Paavai Engineering College

(Autonomous Institution, Approved by AICTE, Affiliated to Anna University, Chennai-25)

Criterion 3.2.2: Percentage of teachers having research projects during the last five years

S.No	Academic Year	No.of Research Projects
1.	2019-2020	279
2.	2018-2019	274
3.	2017-2018	241
4.	2016-2017	239
5.	2015-2016	259

Academic Year 2019-2020

PAAVAI ENGINEERING COLLEGE,
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DEPARTMENT OF AERONAUTICAL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT: DESIGN AND DEVELOPMENT OF BOX TAIL UAV POWERED WITH SOLAR PANEL

PRINCIPAL INVIGILATOR: T.S. VAISHNAVI

CO-PRINCIPAL INVIGILATOR: S.MARY PRIYA

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ABSTRACT

This paper exhibits a prologue to box tail UAV innovation and an outline of ebb and flow look into 'endeavors right now. Box tail innovation offers high lifting capacities, diminishing wing vortices and less unpredictable flight controls. Instead of utilizing aileron a lift we are going for elevons. Anyway at the present condition of innovation the plan of half and half box tail presents numerous difficulties and requires imaginative answers for both the airplane arrangement just as vitality stockpiling framework. For this solar panel (sun oriented boards) are implemented to give power. The airplane's shut wing configuration, named a "twofold box tail", is proposed to bring down initiated drag and be slow down safe, alongside limit layer control techniques. The twin level tails articulate, giving synchronous power over roll and pitch.

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RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT: EXPERIMENTAL INVESTIGATION OF PROPELLER PERFORMANCE WITH PROPELLER SURFACE CORRUGATION

PRINCIPAL INVIGILATOR: G.SASI

CO-PRINCIPAL INVIGILATOR: P.SETHUNATHAN

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ABSTRACT

The propeller is the primary component of flying vehicles powered by electric motors, internal combustion engines, and turboprops for producing thrust. A propeller thrust is produced in the engine by effective spinning of the propeller through air for cost-effective and environmental friendly flight. Natural flyers like birds as well as aquatic animals like humpback whales effectively use its wings and flippers with its surface features for capturing its prey and escaping from their enemies. As part of this work, corrugations are established in the leading edges or in the suction surfaces of the propeller to modify the flow field prevailing over there. Because of the flow field, the surface corrugations or leading edge corrugations energize the boundary layer in the surfaces of the propeller by counter-rotating vortices which, in turn, delays the separation of the boundary layer from the surface. The performance parameters of the propeller such as thrust, torque, propeller efficiency, power consumption etc., are measured using propeller test rig. Depending on the location of surface or leading corrugations, the variations in the performance of the propeller are investigated for further optimization on the selection of better propeller to the applications of UAVs operating at low Reynolds No.

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DEPARTMENT OF AERONAUTICAL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT: CONCEPTUAL DESIGN AND PERFORMANCE ANALYSIS OF TURBO JET ENGINE

PRINCIPAL INVIGILATOR: DR.R. ARRAVIND

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ABSTRACT

The selection of aero-engine that can meet the design specifications of aircraft is the primary step to the overall design program of an aircraft. Global aviation traffic is expected to increase at an annual rate of 5% for the foreseeable future. However, the engine emissions such as CO, CO_2, UHC, and NO_x have greater adverse impact on the earth atmosphere and human health in addition to its performance degradation. Proper design of the aero-engine to the design requirements of the particular aircraft is essential for meeting the highly competitive airline market. Turbojet is an air-breathing engine which works under the basis of Brayton Cycle. The efficiency and thrust produced by the engine depend on the individual performance of the turbojet components such as Intake, Compressor, Combustion Chamber, Turbine, and Propelling Nozzle in addition to its various operating atmospheric conditions. Here, program has been developed to do a conceptual design of the aero-engine and also performance analysis chart will be developed for the aero-engine to meet the design requirements of the aircraft.

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RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT: ANALYZING THE BEHAVIOUR OF NATURAL AND ARTIFICIAL COMPOSITES

PRINCIPAL INVIGILATOR: P. KARTHIKEYAN

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ABSTRACT

The composite materials are replacing the traditional materials, because of its superior properties such as high tensile strength, low thermal expansion, high strength to weight ratio. Natural fiber composites such as sisal and jute polymer composites became more attractive due to their high specific strength, lightweight and biodegradability. Artificial composites such as Glass Fiber Reinforced Polymer, Carbon Fiber Reinforced Polymer having high strength, durability and non-biodegradability.

In this study, both the Natural (Jute fiber) and Artificial Composites (GFRP) are developed and their mechanical properties such as tensile strength, compression strength, bending test, fatigue strength, shear strength and impact strength are evaluated. The interfacial properties, internal cracks and internal structure of the fractured surfaces are evaluated.

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RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT: DESIGN AND FABRICATION OF WATER SPRAYER AND FLAME THROWER TETHERED DRONE

PRINCIPAL INVIGILATOR: D.RAJKUMAR

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ABSTRACT

The popularity of the hexacopter is increasing as the sensors and control systems are becoming more advanced and less expensive. There are many commercial hexacopter available on the market today, but they are often hard to configure and comprehend. There is main drawback in all drones is that the time of flight is very less (around 20 min) The proposed system aims to provide continuous power supply to the drone by using power supply from ground and it been used for various application such as flame thrower, water stored tanks for cleaning higher raised building at precise location and reduces operating time. This system used IMU 6DOF (3-axis accelerometer & 3-axis gyroscope) and hexa based model which ensure it smooth movement, graceful motion and trajectory tracing. GPS system and barometric sensor make it more efficient with an FPV setup.

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RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT: ANALYSIS AND EFFECT OF SHIM USED IN A COMPOSITED AND METAL BOLTED JOINT

PRINCIPAL INVIGILATOR: P.PRASANNA

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ABSTRACT

This paper about the behaviour of joints, that most of the composites can't be riveted. Mostly bonding (adhesives) technique is used to join the two different materials, like metal to composites and composites-composites. Our work is to address the behaviour (strength and life time) of different composite and metal joints using FEA analysis. Which will reduce the time and cost of the testing. There are different techniques (from literature) which have been considered and by using different thickness layer of shim with bolted joints in the composite material and compare the results with the test results.

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RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT: DESIGN AND DEVELOPMENT OF WILDLIFE CENSUS DRONE USING IR IMAGING TECHNIQUE

PRINCIPAL INVIGILATOR: K.GOKULNATH

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ABSTRACT

Unmanned aerial vehicles have gained well known attention in recent years for a numerous applications such as military, civilian surveillance operation as well as search and rescue missions. Operation as well as search and rescue missions. The drone users have less aviation experience and they are not controlled by professional pilots. Now a days normal people who are not having any of aviation experience can able to fly the drone with less flying practices. The objective is to design, fabricate and implement an unmanned aerial vehicle to take the census of deer in the dense forest by using IR imaging technique. By detecting the body temperature of deer using thermal sensor the counts can be taken for the individual parts by analyzing the results of all parts of the forest. And the final count will be determined. It may be the easy way of taking the wild life census. When comparing to the traditional methods. Wildlife aerial surveys require more time and significant resources. Traditional methods are demanding for observers in terms of concentration and are not accurate to deer censuses. The processing of deer aerial imagery acquired from an unmanned aerial vehicle (UAV) represents a potential solution for deer census. The method used in this study is based on the deer image analysis applied on visible and thermal infrared imagery acquired from a UAV. This project aimed to detect deer in the forest with a known number of individuals.

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DEPARTMENT OF AGRICULTURE ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT: ZERO PESTICIDE CULTIVATION OF BRINJAL

PRINCIPAL INVIGILATOR: A. MEIGNANAMOORTHI

CO-PRINCIPAL INVIGILATOR: Dr.A.VIVEKANANDHINI

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ABSTRACT

In brinjal fruit and shoot borer (Leucinodes orbonalis) is major problem in all over India. The Larva bore into fruits and tender shoots causing wilting and dieback damage.Fruit damage as high as 95% and losses of upto 70% in commercial plantings have been reported.In IPM(Integerated Pest Management) cultural practices method brinjal is cultivated with trap crops (sorghum, sesame, cumbu,cowpea).This trap crops flower release some of the volatiles.This volatiles attract the natural enemies and increase the population of natural enimes in particular area.These natural enemies feed borer moths and larva and reduce the pest attack under zero pesticides condition.

KEYWORDS: *Trap crops,Fruit and shoot borer.*

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RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT: EFFECT OF ORGANIC LIQUID FERTILIZER ON SOIL PROPERTIES & GROWTH OF BRINJAL

PRINCIPAL INVIGILATOR: N.SATHESWARAN

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ABSTRACT

Nowadays, the synthetic fertilizers are used in agriculture when compared with organic fertilizer. But the continuous use of chemical fertilizers are diminishing soil fertility, health threads to human, livestock and also microbial community present in the soil. Applying liquid fertilizers directly to the root zone will provide an immediate effect on plant growth because the solution of fertilizer acts quickly to make the nutrients available to plants. The treatment of liquid fertilizer is prepared from waste materials. The different liquid organic fertilizers are Banana peel, Cow dung, Coconut cake, Groundnut cake and Vegetable waste.

The main intention of this project to compare the performance of different organic liquid fertilizers and to find out the nutrients present in the soil. With the help of parameters like pH, electrical conductivity (EC), nutrients of soil like nitrogen, phosphorous, potassium, organic carbon and plant growth.

KEY WORDS:

Organic liquid fertilizer, pH, Electrical conductivity, nutrients.

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RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT: AUTOMATIC GREENHOUSE ROOFING SYSTEM BY USING IOT

PRINCIPAL INVIGILATOR: N.SATHESWARAN

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ABSTRACT

Now a day, during the summer seasons the cultivated crops gets affected due to the heavy sunshine intensity and temperature. The main theme of this project is that to prevent the crops from the heavy sunshine, temperature, warmth and then save crops. The Temperature sensor and Humidity sensor is used for the working of automatic roof and control the environment condition. This system involves protects the crops by the auto roof which covers the greenhouse. Temperature sensor is used to measure sunshine intensity, temperature value from outer site of greenhouse. When to reached high temperature value, this system is automatically closed roof in greenhouse for reducing impact of high sunshine intensity. Humidity sensor is used to measure temperature value of innerside of greenhouse during high sunshine intensity season like April and May and ventilation fan and water sprayer is used to reducing temperature and to maintain favourable environment condition in greenhouse.

Our project can be considered as the central issue in designing portable greenhouse. This technology provides the portable roof with temperature sensor which it can use to measure temperature of outside in greenhouse and then control the roof condition (open or close) and humidity sensor can use to measure the humidity and temperature of inside greenhouse and then control ventilation fan and water spraying system . It is a portable greenhouse system that works on Arduino Microcontroller and employs two sensors to measure temperature and humidity condition. The Arduino board was selected as the microcontroller platform and its software counterpart, Arduino Software, was used to carry out the programming

Keyword: *Temperature and Humidity sensor, Arduino microcontroller, greenhouse, Arduino software.*

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RESEARCH PROJECT

ACADEMIC YEAR; 2019-2020

TITLE OF THE PROJECT: EFFECT OF DIFFERENT TREATMENTS IN FLOWER CROPS

PRINCIPAL INVIGILATOR: M.BHUVANESHWARI

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ABSTRACT

In this project we are using three flower crops such as Ixora coccinea, chrysanthemum and crossandra under polyhouse cultivation. The temperature, relative humidity and ventilation of air are controlled by the equipments fixed in the polyhouse. Crops grown in the polyhouse are protected from intense heat, bright sunlight, strong winds, hailstones and cold waves. They are grown in two different mediums such as vermiculite and perlite. It is grown by using different treatments like hydrogen peroxide, growth hormone compared with normal growth of the flowers. The effect of the solutions and the mediums are observed. The root elongation and the shoot development of the flowers enhance the development of the flower. Various mediums help the flower growth in the developing periods and the blooming of the flowers is collected. Gibberellin is used as growth hormone that regulates the stem elongation, flower development.

KEY WORDS: Gibberllic acid, hydrogen peroxide, vermiculite, perlite.

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RESEARCH PROJECT

ACADEMIC YEAR; 2019-2020

TITLE OF THE PROJECT: SOLAR POWERED MULTIPURPOSE FARMING VEHICLE

PRINCIPAL INVIGILATOR: M.BHUVANESHWARI

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ABSTRACT

Presently, small land holding farmers use work bulls mostly for land preparation. Their use can be increased and made more economical by using them for other farm operations such as ploughing, harrowing, fertilizer application, sowing and weeding. Improved hand tools will also facilitate farm work. Oxen can be used to pull a cart throughout the year which keeps the training. Ploughs, ridgers, seeders and weeders are all seasonal implements. Manual method of seed planting, results in low seed placement, low crop yield and serious back ache for the farmer which limits the size of field that can be planted. The cost price of imported planters has gone beyond the purchasing power of most of our farmers. Farmers can do much to increase crop production especially grains if drudgery can be reduced or totally removed from their planting operations.

Generally cultivation of any crop involves various steps like seed selection, field preparation, fertilizing, sowing, irrigation, germination, thinning and filling, weed removal, vegetative stage, flowering stage, pesticide spraying, fruit or pod formation stage, harvesting and threshing. Farmer has to use various agricultural equipments and labors for caring out those steps, our purpose is to combine all the individual tools to provide farmers with multipurpose equipment which implements all the scientific farming techniques and specifications and suitable for all type of seed to seed cultivation with as minimum cost as possible. This project work is focused on the design and fabrication of multipurpose equipment which is used for land preparation, sowing, fertilizing, leveling and weed removal process. The multi-crop planter has the capability of delivering the seeds precisely with uniform depth in the furrow, and also with uniform spacing between the seeds . The multipurpose agricultural equipment is very simple to use, the various adjustments are made with ease, and it is maintenance free.

*Key words: cultivation, multipurpose, s*praying, *pesticides*

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DEPARTMENT OF AGRICULTURE ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR; 2019-2020

TITLE OF THE PROJECT: AUTOMATED SPRAYING DEVICE FOR PROTECTED CULTIVATION

PRINCIPAL INVIGILATOR: K.VISHNUBHARATH

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ABSTRACT

Protected cultivation is an emerging technology for raise vegetables, flowers, and others high valued as well as perishable crops. In modern agriculture, protected structures held an extreme potential for more production with higher productivity. Quantity and quality of produce is also much better than open field produces. Looking to the increasing population, climate change, decreasing land holdings, increasing pressure on natural resources i.e. land & water and high demand of quality horticultural fresh produce we are forced to shift towards modern technologies of crop production like protected cultivation. In protected cultivation the application of pesticides and growth regulators is mainly carried out by manual spraying by using hand sprayer and power sprayers. It will requires skilled labour and consumes more time for this operation. At the time manual spraying leads to flower shedding will occurs due to human intervention. Using chemical to spray it will affect the labours health. For that our aim is to design a spraying device for protected structures. It will precisely sprays the pesticides on the crop rows and to restrict the chemicals contact to labour, so chemicals are no affected the labour during the spraying operation and the spraying device moves overhead of the plants with the help of cables to avoid the flower sheading on vegetable crops.

Key words: *protected cultivation, chemicals, spraying.*

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RESEARCH PROJECT

ACADEMIC YEAR; 2019-2020

TITLE OF THE PROJECT: FLAME WEEDER

PRINCIPAL INVIGILATOR: P.ATHIRA

CO-PRINCIPAL INVIGILATOR: S.MANOJKUMAR

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ABSTRACT

In Indian agriculture it is a very difficult task to weed out unwanted plants manually as well as using bullock operated equipments which may further lead to damage of main crops. More than 33% of the cost incurred in cultivation is diverted to weeding operations thereby reducing the profit share of farmers. This is small work towards analyzing weeding cum-earthing up equipment aspects for economical cultivation which will help to minimize the fatigue and to reduce the labour.

The aim of our project is to control the weeds in the field by means of flame weeding. Here the cylinder is used to provide fuel to the flame. This flame will completely burn the weeds in the field and it will eliminate the further growth of weeds in the field. It will create absence of weed seed germination in the field.

Key words : Weeder, cylinder, weed control and flamer

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DEPARTMENT OF AGRICULTURE ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR; 2019-2020

TITLE OF THE PROJECT: ANIMALS AND BIRD SCARER USUNG ULTRASONIC WAVES

PRINCIPAL INVIGILATOR: N.SATHESWARAN

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ABSTRACT

All around the world, domestic birds and animals are a major thread in the field of agriculture causing damage to economic field crops, storage houses and also dirtying human life areas. Such most common pest birds in India are House crows, Common myna, Jungle myna, Brahminy starling, White checked bulbul, Acridotterestritas etc. In order to distract these birds away, many traditional methods such as Scarecrow models, Hawk kites, Coloured lights, Lasers, Flashes, Chemicals etc are used which nowadays do not seem very effective. An effective bird detterent technique i.e. birds and animals using ultrasonic and waves has been developed. These ultrasonic waves produced by the sensor creating a irritating effect to the birds so that they are distracted away from the field. Different sounds due to which different species of birds get detterent were also noticed. Our project aims to control wastage of crops and food grains due to birds and animals and preventing the extinction of birds and animals from the electric shock done to deter the birds which is one of the traditional technique. The main focus of agricultural engineering is to apply various engineering and technological principles in crop production to maximize production and to minimize wastage

Keywords: ***Birds Scarer, Detter, Ultrasonic, Extinction.***

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DEPARTMENT OF AGRICULTURE ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR; 2019-2020

TITLE OF THE PROJECT: MOTORISED AGRICULTURAL SPRAYER WITH PLOUGHER

PRINCIPAL INVIGILATOR: S.SREEDEVI

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ABSTRACT

The project is intended to help the farmers as India being an Agriculture based country. It is a Sprayer cum plough mounted on a movable frame which is operated by an electric drive. The aim of developing such a concept is primarily because of preventing the three major drawbacks of the pump being used currently- Firstly, the farmer has to carry the entire weight of the spraying pump on his shoulder; secondly, he has to continuously use his one hand to pump using the handle; thirdly, the farmers don't take enough precaution while handling chemicals which results in fatal diseases because of its direct contact. In case of using plough through manual method excessive human effort is used. All these factors have been taken care of in this project along with being cost effective, light in weight and good in strength. The pump already available with the farmer can be directly used in this mechanism. The handle of the sprayer will be mechanically operated through the slider crank mechanism. This will result into the reciprocating motion of the piston and hence pumping will be done in user friendly manner.

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RESEARCH PROJECT

ACADEMIC YEAR; 2019-2020

TITLE OF THE PROJECT: AEROPONICS WITH VERTICAL FARMING

PRINCIPAL INVIGILATOR: A. MEIGNANAMOORTHI

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ABSTRACT

Aeroponics growing of plants is becoming a household name for growing plants for their daily food at their kitchen table in metropolitan regions. When the prices of vegetables are growing high and the quality is not fresh farm, above all they all are not chemical free. Because this is a soil-less technique of growing plants, the manual work is cut down considerably while leaving no traces of soil stains. Once it is designed and placed, it begins to operate mechanically with minimum garden work is done to be taken care of. Aeroponics farming can be done to develop few plants to a high number of crops and types growing together by utilizing the maximum distance of a given unused spacing in the home.

KEYWORDS: *Aeroponics,PVC pipes,Mist Chamber.*

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RESEARCH PROJECT

ACADEMIC YEAR; 2019-2020

TITLE OF THE PROJECT: SURVEY ON CHEMICAL AND ORGANIC FERTILIZERS USING FARMERS IN NAMAKKAL DISTRICT

PRINCIPAL INVIGILATOR: A. MEIGNANAMOORTHI

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ABSTRACT

Now a day, farmers are mostly used inorganic farming practices, because inorganic farming gives more yield, to get quick harvest period and to increasing income but not consider the effect of chemical pesticides in vegetables & fruits and that will cause cancer and side effects in human beings. Now we are conducting a study on survey on organic and inorganic fertilizers using farmers in Mohanur block, Namakkal block, Rasipuram block and Puduchataram block of Namakkal district, Tamilnadu. Then we met some farmers in various places and got details about farmers details, agriculture lands, cropping system from the agricultural office and analysed the soil characteristics, crop production and comparison on cost of production, etc... at various blocks in both organic farming and inorganic farming. Finally suggestion was given to farmers to increase the quality and quantity of food crops.

Key words: Survey, Organic, Inorganic, Production

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DEPARTMENT OF AGRICULTURE ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR; 2019-2020

TITLE OF THE PROJECT: DESIGN AND FABRICATION OF AUTOMATIC VEGETABLE SEED SOWING MACHINE WITH FERTILIZER

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ABSTRACT

In this project we have decided to design a better mechanical machine which is available to the farmer at the cheaper rate . In this equipment we used ploughing rod,water pump, seed sowerland levelling attachment.It can sow and seed crop at the same time,specifically for sowing soyabean, maize, pigeonpea, groundnut.The power supply from battery enter into DC motor which causes vehicle to move.The ploughing operation is done when the rod gets contacted with ground.Then the seed is loaded into the hopper and discharged into the field.By activation of DC the water sucked from the reservoir and discharged into the field.At last using levelling lever ploughed land gets levelled. So we are developing this equipment which will satisfy all this need and to solve labourproblem.This machine performs the operation (ploughing, sowing, water spraying) which is used for small scale farming.

KEYWORDS: *Ploughing, sowing, water spraying ,DC motor, Seed hopper, Levelling lever.*

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DEPARTMENT OF AGRICULTURE ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR; 2019-2020

TITLE OF THE PROJECT: AGROTECHNIQUES FOR MAXIMIZING YIELD IN GREEN GRAM

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ABSTRACT

Green gram (*Vigna radiata L.*) is the third most important pulse crop of India both in terms of area and production next to chickpea and pigeon pea. It is cultivated in kharif, rabi and summer seasons in different parts of the country. The production of pulse crops in India in general is not enough to meet the domestic need of the ever growing population. Green gram contains 25 percent protein, this being about two third of the protein content of soybean, twice that of wheat and thrice that of rice. The productivity is far below the potential and there is substantial scope for improvement with the adoption of improved technologies. The protein is comparatively rich in lysine, which is deficient in cereal grains. Among various improved technologies, the application of nutrient through foliar application of RDF + Water control spray(T1), RDF + Foliar application of Nitrobenzene 2% at 25 and 45 DAS(T2), RDF + Soil application of DAP at 2% 25 and 45 DAS (T3), RDF + Salicylic acid at 75ppm spray (T4), RDF + Urea at 2% + Nitrobenzene 2% + Salicylic acid at 75ppm spray (T5), RDF + 25kg of extra dose of nitrogen at 40 DAS + foliar application of DAP 2% at 25 and 45 DAS(T6) to increase the yield as well as nutrient use efficiency is considered to be an effective and economic method of supplementing part of nutrient requirement at critical stages. An uniform dose of RDF was applied to all the plots as basal.

An investigation entitled "Agrotechniques for maximizing yield in Green Gram" to study the effects of foliar nutrition on growth, yield, quality and economics of green gram in acid soil. The experimental was laid out in a Randomized Block Design with six treatments replicated thrice and the variety was Co8.

KEY WORDS: *Foliar application, treatments, yield and quality*

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DEPARTMENT OF AGRICULTURE ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR; 2019-2020

TITLE OF THE PROJECT: ZERO WASTE MANAGEMENT UNDER INTEGRATED BIOGAS AND FARMING TECHNIQUE

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ABSTRACT

Integrated biogas and farming technique have a significant role to play in the development of agro ecological farming system. Integrated Biogas and Algal system is the best method for treating biowaste. These system provide a valuable product slate from existing biowaste resources. Which means day by day the amount of biowaste Resources was increased at all the agro based process but that resources containing benifitial energy for some other process. But the people not comes forward to utilize these resources due to their, Financial problems of less intensity, poor involvement of them. So many people not getting the knowledge about the biowaste management. For these kind of problem our project will help them to understand easily about agro waste management and improve, the interest of people to reduce the agrowaste and utilize with in less amount of cost. The product slate will includes biogas, high protein algal animal feed, rich water for aquaculture and liquid fertilizer for aquaponics, hydroponics and field irrigation. Algal pond system and Integrated Biogas system are essentially Zero waste Systems that make optimal use of nature in form of Plants,Animals, Bacteria, Fangi and Algae, to produce Biodiverse-food,Energy and Nutrients. It is the process of making profit where the waste of each process becomes the feedstock for another process. This project will help the people to understand that Biogas is a better source of energy and how the waste from one energy can be ulitized as the main source of producing another energy.

Key words: *Biogas digester, Azolla, Fish farming, Hydroponics, Aquaponics, Foddercrop.*

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DEPARTMENT OF AGRICULTURE ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR; 2019-2020

TITLE OF THE PROJECT: DESIGN AND FABRICATION OF SUGARCANE CHIPPING CUM PLANTING MACHINE

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ABSTRACT

Sugarcane planting is a very labour intensive job and involves considerable human drudgery. Cost of sugarcane planting by mechanized method is less compared to traditional methods. It also reduces drudgery involved in unit operations of sugarcane planting. The reduction in cane yield owing to delayed planting cannot be compensated by additional inputs viz., frequent irrigations, extra fertilizers and inter culture operations. In order to achieve uniform crop stand, correct seed rate, appropriate depth of setts placements and uniformity of setts with required overlapping are important. These, however can better be achieved by using tractor-drawn sugarcane cutter planter apart from economizing labor and energy. Thus, recently developed sugarcane cutter planters are getting very good acceptance amongst sugarcane cultivators. Generally planting of any crop is very much important as far as the crop growth and yield is concern. This project describes regarding the design refinement of a sugarcane cutter planter and its prototype development. In this machine, the complete sugarcane, which is fed by the laborers sitting on the machine, is cut automatically into pieces before dropping into furrows. It also opens the furrows, applies fertilizer, chemical and fungicide and also covers the sets and presses it automatically. It is operated completely by a manual force.

Key words: *Human drudgery, Intercultural operations, Prototype.*

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DEPARTMENT OF CIVIL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR; 2019-2020

TITLE OF THE PROJECT: STRENGTH CHARACTERISTICS OF RESIN CONCRETE

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ABSTRACT

Although there seems to be widespread interest in resin concretes, there has been only a limited number of publication n this subject, in contrast to the numerous publication on specific resins(Bonding agents). Resin is a binder, whereas resin concrete is the composite material resulting from the mixing and hardening of resin and hardener with fly ash and aggregates.

The major advantages are high strength, bonding ability and resistance to wear moisture and abrasives. The major disadvantages are high cost materials, reduction in strength due to temperature increase. The major applications are for jointing, repairing, lining and retrofitting.

The primary aim of this project is to compare the strength (both compression & flexural strength) of the resin concrete with normal concrete without curing the concrete, instead of curing the concrete is kept in the normal room temperature due to the properties of the resin. The concretes are tested on the 3, 7 and 14th days after the casting of the concrete samples.

The research work consistsof: (i) Initial setting time of the resin with fly ash: (ii) workability test of the resin concrete: (iii) casting of concrete samples and testing them for Compressive strength and Flexural strength: (iv) using the resin as retrofitting materials.

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DEPARTMENT OF CIVIL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR; 2019-2020

TITLE OF THE PROJECT: EXPERIMENTAL STUDY ON PARTIAL REPLACEMENT OF CEMENT BY RED MUD

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ABSTRACT

This research investigates experimental behavior of red mud with concrete. In this study, the cement replaced with various percentage of red mud in concrete and checked out various mechanical properties. The Bayer Process for the production of alumina from Bauxite ore is characterized by low energy efficiency and it results in the production of significant amounts of dust like, high alkalinity bauxite residues known as red mud. Nowadays, the wastes are not having any industrial applications, so it can be innovatively using these wastes as a raw material in the civil engineering field. It comprises of oxides of iron, titanium, aluminum and silica along with some other minor constituents. Presence of Alumina and Iron oxide in red mud compensates the deficiency of the same Based on economics as well as environmental related issues, enormous efforts have been directed worldwide towards red mud management issues i.e. of utilization, storage and disposal. By taking cementitious behaviour of the red mud into account, an experiment was carried out to partially replace the cement by red mud in concrete for different percentages (0%, 5%, 10%, 15%, 20%, 25%) and also its effects on the strength and other properties of the concrete is studied by compressive strength ,split tensile strength and flexure strength for M25 grade concrete.

KEY WORDS: Red mud, Compressive strength, Flexural strength.

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DEPARTMENT OF CIVIL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR; 2019-2020

TITLE OF THE PROJECT: EXPERIMENTAL STUDY ON ANALYSIS OF WATER QUALITY IN KOLLI HILLS

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ABSTRACT

Water is an essential resource for every living being. In recent days water is being polluted in large amount and hence, the quality of water gets decreased and it becomes the major reason for a lot of diseases to emerge. Due to human activities and industrial wastes the water gets contaminated including the ground water. Its necessary for a water to be in its standard quality. As the water is used for different purposes, the standard of the water must be checked before it is used.

Water quality management is an important practice to check the quality of water before it is used. The quality management should be done periodically to protect the water resource. Poor condition of water is not only an indicator of environmental degradation but also it becomes a major threat to the ecosystem. Hence it becomes the fundamental thing to check the quality of water before its usage. Here, the water in the Kolli hills is analysed for its standard quality. There are various parameters for water to be in its standard quality. Some of these parameters are its alkalinity, turbidity, PH and the chlorine content in the water etc. All these parameters are checked in the water to prove that the water is in standard quality and it can be used for human purpose without affecting their health. Therefore, analysing the water quality becomes important to lead a healthy life.

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DEPARTMENT OF CIVIL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR; 2019-2020

TITLE OF THE PROJECT: EXPERIMENTAL STUDY ON TREATMENT OF RIVER WATER USING BANANA PEELS

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ABSTRACT

The Purpose of this project is to find out the harmful toxic metals from the river water by using banana peel. It was discovered that banana peels could indeed purify water of metals. The reason why it can do this is because of the carboxylic acids in the peels which chemically bond with the metal atoms; removing them from the water by absorbing them into the peel.

The experiment we conducted involved cups of water and dried banana peels. The metal filings were placed in the water, then banana peels were added to one cup and the other cup had no peels. Several hours later, the results were compared. The water in the cup without the bananas had lots of metal on the bottom that eventually rusted.

The water was a sort of light brown colour. The water with the dried banana peels became a bit dark, but it was still clear and there wasn't a lot of metal dust in the water. There was also no rust. The conclusion was that the dried banana peels were able to have an effect on the metal in the water.

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RESEARCH PROJECT

ACADEMIC YEAR; 2019-2020

TITLE OF THE PROJECT: EXPERIMENTAL STUDY ON THE PROPERTIES OF PERMEABLE CONCRETE

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ABSTRACT

Pervious concrete is a type of concrete with high porosity. It is used for concrete flatworks application that allow the water to pass through it, thereby reducing the runoff from a site and allowing ground water recharge. The high porosity is attained by a highly interconnected void content. Typically pervious concrete has water to cementisious material ratio of 0.28 to 0.4

The mixture is composed of cementisious materials, coarse aggregates and water with little to no fine aggregates. Addition of a small amount of fine aggregates will generally reduce the void content and increase the strength.

Generally pervious concrete is used in parking areas, areas with light traffic, residential areas. It is an important application for ground water recharge.

The present project deals with the study and comparison of mechanical properties, permeability and durability properties of different grades of pervious concrete(M15,M20,M25)

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RESEARCH PROJECT

ACADEMIC YEAR; 2019-2020

TITLE OF THE PROJECT: AN EXPERIMENTAL STUDY ON FIBER REINFORCED CONCRETE USING COCUNUT COIR AND STEEL AS FIBRES

PRINCIPAL INVIGILATOR: B.KIRUTHIKA

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ABSTRACT

Fiber reinforcement is commonly used to provide toughness and ductility to brittle cementitious matrices. Reinforcement of concrete with a single type of fiber may improve the desired properties to a limited level. A composite is termed as hybrid, if two or more types of fibers are rationally combined to produce a composite that derives benefits from each of the individual fibers and exhibits a synergetic response

This study aims to characterize and quantify the mechanical properties of hybrid fiber reinforced concrete. The combining of fibers, often called hybridization, is investigated in this paper for a M_{25} grade concrete. Control and two-fiber hybrid composites were cast using different fiber proportions of steel and coconut coir. Compressive test, split tensile strength and flexural strength were performed and results were extensively analyzed to associate with above fiber combinations.

The Steel Fibers (S.F) are hooked end steel elements with a length to diameter ratio equal to 60. The Hybrid Fibre Reinforced concrete contents examined are SO.5C0.5, SO.6C0.4, SO.7C0.3, and SO.8C0.2.

Based on experimental studies, the paper identifies fiber combinations that demonstrate maximum compressive, split tensile strength and flexural strength of concrete

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RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT: UTILISATION OF MAGNESITE DUST AS A PARTIAL REPLACEMENT OF FINE AGGREGATE IN CONCRETE

PRINCIPAL INVIGILATOR: S.RAJESWARI

CO-PRINCIPAL INVIGILATOR: M.SABARI

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ABSTRACT

In this experimental study, briefly explains method for manufacture of magnesite concrete for replacement ordinary concrete which is mainly used for construction purpose. Magnesium compounds which are caustic magnesia or dead burnt magnesia. Magnesium chloride, Magnesium Hydroxide Magnesium Carbonate (Magnesite) are produced from sea water and mineral deposits. Magnesium ore (MgCo3) is a natural mineral mainly composed magnesium carbonate. Magnesite ore is composed of Serpentiny, Quartz-Based silica and lime stone SiO2, Fe2O3, CaO, Al2O3 content is important to determining quality of magnesite ore. Magnesite duat is a waste from deposits of sea water in 20%. This values done to according economic evolution benefication magnesite ore is using physical and chemical method to produce high grade product to be used in the manufacture of magnesium components. Magnesite dust is seperatted from impurity silica and iron by crushing, Grinding, Screening benefication methods. In this study is aimed to determine that benefication methods which used for magnesite ore is successful. According to experiment Result the best result has been obtained by chemical methods is best suitable method for benefication ore. Natural sand was replaced with magnesite dust by three proportions (i.e. 10%,20%, and 30%). Magnesite dust can be used as fine aggregate, but it has to satisfy the technical requisites like workability and strength.

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DEPARTMENT OF CIVIL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR; 2019-2020

TITLE OF THE PROJECT: EXPERIMENTAL STUDY ON CONCRETE USING QUARRY DUST AND STEEL SLAG AS A PARTIAL REPLACEMENT FOR FINE AGGREGATE AND COARSE AGGREGATE

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ABSTRACT

In this experimental study, the effect of using waste steel slag and quarry dust as a replacement of coarse aggregate and fine aggregate on the mechanical properties of the concrete has been investigated.Steel slag is an industrial by-product of steel industry. Quarry dust is a waste from the stone crushing unit accounts 25% of the final product from stone crushing unit. This quarry dust which is released directly into environment can cause environmental pollution. It possesses the problem of disposal as waste and is of environmental concern. The results were compared with conventional concrete property can be maintained with advanced mineral admixtures such as steel slag as partial replacement of coarse aggregate 0 to 60%. Experiments were conducted to determine the compressive strength; split tensile strength of concrete with various percentages of steel slag aggregate. Compressive strength of steel slag concrete with different dosage of slag was studied as a partial replacement of cement. From the experimental investigations, it has been observed that, the optimum percentage of steel slag for high strength concrete. To reduce the impact of the quarry dust on environment and humans, this waste can be used to produce a new product by partially replacing fine aggregates with quarry dust in concrete. The main aim focus of this paper was to quarry dust partial replaces natural sand in concrete for studying the hardened strength properties of concrete. Natural sand was replaced with Quarry dust by three proportions (i.e. 10%, 20%, and 30%). Quarry dust can be used as fine aggregate, but it has to satisfy the technical requisites like workability and strength. Concrete mixes were tested for compressive strength and split tensile strength of concrete replaced by quarry dust was compared. The aim of the test was to find the mix proportion which shows strength values are high compared to natural concrete.

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DEPARTMENT OF CIVIL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR; 2019-2020

TITLE OF THE PROJECT: EXPERIMENTAL STUDY ON THE PROPERTIES OF CONCRETE BY PARTIAL REPLACEMENT OF CEMENT USING SUGARCANE BAGASSE ASH

PRINCIPAL INVIGILATOR: B.KARTHIGA

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ABSTRACT

This research addresses the suitability sugarcane bagasse ash (SCBA) in concrete used as partial cement replacement. The grades of concrete M25 was used for the experimental analysis The cement was partially replaced by SCBA at 0%, 10%, 20% and 25%, by weight in normal strength concrete (NSC), The innovative part of this study is to consider grades of concrete mixes to evaluate the performance of concrete while cement is replaced by sugarcane bagasse ash. The cubicle specimens having size 150 mm x 150 mm were used and tested after curing period of 7, 14 and 28 days. It was observed through the experimental work that the compressive strength increases with incorporating SCBA in concrete. Results Indicated that the use of SCBA In Concrete (M25) at 10% increased the average amount of compressive strength by 10% as compared so the normal strength concrete. The outcome of this work indicates that maximum strength of concrete could be attained at 10% replacement of cement with SCBA. Furthermore, the SCBA also gives compatible slump values which increase the workability of concrete.

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RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT: AN EXPERIMENTAL STUDIES ON PARTIAL REPLACEMENT OF FINE AGGREGATE BY USING MARBLE WASTE CONCRETE

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ABSTRACT

In this experimental study, the effects of using waste marble powder (WMP) as a fine material on the mechanical properties of the concrete has been investigated. For this purpose four different series of concrete mixtures were prepared by replacing the fine sand (passing 4.75 mm sieve) with waste marble at proportions of 0%, 10%, 20%, 30%, 40%, and 50% by weight. In order to determine the effect of the WMP on the workability, compressive strength and splitting tensile strength with respect to the curing age, the samples were recorded at the curing ages of 7 and 28 days. The use of particular waste product will be economically advantageous usually at the place of abundant availability and production.

The result is that the mass which is 40% of total marble quarried has reached as high as millions of tons. This huge unattended mass of marble waste consisting of very fine particles is today one of the environmental problems around the world. Marble dust can be used either to produce new products or as an admixture so that the natural sources are used more efficiently and the environment is saved from dumpsites of marble waste The marble sludge was obtained in wet form as an industrial byproduct directly from the deposits of marble factories, which forms during the sawing, shaping and polishing processes of marble in Elazig region. The wet marble sludge was dried up prior to the preparation of the samples. The dried material was sieved through a 4.75 mm sieve and finally the marble dust was obtained to be used in the experiments as fine aggregate.

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RESEARCH PROJECT

ACADEMIC YEAR; 2019-2020

TITLE OF THE PROJECT: EXPERIMENTAL STUDY OF CONCRETE BY USING PARTIAL REPLACEMENT OF FINE AGGREGATE WITH WASTE FOUNDRY SAND

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ABSTRACT

The project represents the current utilization of fine sand in the construction industry. The amount of waste foundry sand generated also encrypted in this paper. The paper also gives the remark on the utilization of waste foundry sand in the construction industry. The project mostly focuses on the amount of foundry sand can be used as a cementitious material. The percentage of foundry sand which gives the maximum strength according to our conclusion has been also recorded here. The project gives the noticeable and remarkable conclusion on utilization of foundry sand as a cementitious material.

This project gives the remarkable results about the properties according to compressive strength and workability test .

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RESEARCH PROJECT

ACADEMIC YEAR; 2019-2020

TITLE OF THE PROJECT: EXPERIMENTAL INVESTIGATION OF CONCRETE BY PARTIAL REPLACEMENT OF CEMENT USING MESQUITE AND RICE HUSK ASH

PRINCIPAL INVIGILATOR: K.SHARMILADEVI

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ABSTRACT

The optimized RHA, by controlled burn or grinding, has been used as a pozzolanic material in cement and concrete. Using it provides several advantages, such as improved strength and durability properties, and environmental benefits related to the disposal of waste materials and to reduced carbon dioxide emissions. Up to now, little research has been done to investigate the use of RHA as supplementary material in cement and concrete production .The main objective of this work is to study the suitability of the rice husk ash as a pozzolanic material for cement replacement in concrete. However it is expected that the use of rice husk ash in concrete improve the strength properties of concrete. Also it is an attempt made to develop the concrete using rice husk ash as a source material for partial replacement of cement, which satisfies the structural properties of concrete like compressive strength.

From the entire experimental work & studies it is concluded that mix M20 with the replacement of 20% is the best combination among all mixes, which gives the maximum compressive strength.

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RESEARCH PROJECT

ACADEMIC YEAR; 2019-2020

TITLE OF THE PROJECT: MANAGEMENT OF WASTE MINIMISATION IN CONSTRUCTION INDUSTRY USING LEAN TECHNOLOGY

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ABSTRACT

The construction sector is undergoing important technological and organizational changes, and construction companies will have to adapt to these changes in order to survive. For this to happen, we need to incorporate and apply production and organizational techniques from other more advanced sectors. For this, the application of lean production principles to the construction industry known as lean construction takes on special importance. This study deals with the various lean practices which should be adopted to achieve lean construction. Lean tools used to achieve lean principles are mentioned below. Also Value Stream Mapping (VSM) a lean tool has been used to take survey at two different construction sites. The observation from survey reveals the time spent on non productive activities and the means of reducing them as a goal towards attainment of lean construction.

Waste in the construction industry has been the subject of several research projects around the world in recent years. It is commonly acknowledged that a very high level of waste exists in construction. Since construction has a major and direct influence on many other industries by means of both purchasing inputs and providing the products to all other industries, eliminating or reducing waste could yield great cost savings to the society. Lean construction considers construction materials wastes as potential wastes that hinder flow of value to the client and should be eliminated. The creation of this waste can be prevented by applying lean construction principles.

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DEPARTMENT OF CIVIL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR; 2019-2020

TITLE OF THE PROJECT: TREATMENT OF DYING WASTE WATER USING CHITOSAN

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ABSTRACT

The waste water that comes out from homes, businesses as a result of laundry, dyeing industries also using the bathroom and all the soapy water from washing dishes and rainwater entering drains is what we call as waste water.

Dyeing wastewater consists of inorganic and inorganic substances such as cadmium, lead, zinc, colours. The dyeing wastewater cannot be used various purposes. So, we are going to the treatment of dyeing waste water but chitosan is the best method compared to other method of treatments.

After the treatment the water can be used for irrigation and discharge to surface waterbodies.

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DEPARTMENT OF CIVIL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR; 2019-2020

TITLE OF THE PROJECT: REMOVAL OF TOXIC METALS FROM INDUSTRIAL WASTE WATER BY USING NATURAL COAGULANT

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ABSTRACT

Now-a-days, Usage of chemical coagulants is not suitable due to health and economic considerations. In this present study, we use natural coagulants namely Phyllanthus Emblica and Citrus Medica are used to treat the various waste water. There are many tests are carried out to find out the different characteristics of waste water like Colour, Turbidity, pH, BOD,COD, Total Dissolved solids, Total suspended solids. These tests are to be conducted before and after coagulation process.

For the process of coagulation, seeds of Phyllanthus Emblica and peels of Citrus Medica are converted into very fine powder to replace the chemical coagulant to treat the waste water. Filter is needed to obtain the acceptable turbidity value. The dosages of coagulants used are 0.1gm, 0.3gm and 0.5gm/ml. Here, we use this natural coagulant to treat the waste water such as Tannery Waste Water and Dye waste Water for the purpose of Irrigation.

The optimum pH of treated waste water with Phyllanthus emblica seed powder and Citrus medica is found to be 7.2.The reduction of turbidity after treatment is 65.6%, Reduction of BOD after treatment is 22.1%, Reduction of COD after treatment is 46.9%, Reduction in total dissolved solids after treatment is 83.54% and Reduction in total suspended solids after treatment is25.7%.The optimum dosage of Phyllanthus emblica and Citrus medica used to treat water as a coagulant is found to be 0.3mg/ml and it is in the permissible limit of irrigation.

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DEPARTMENT OF CIVIL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR; 2019-2020

TITLE OF THE PROJECT: NUMERICAL INVESTIGATION ON BUCKLING BEHAVIOUR OF COLD FORMED STEEL ANGLE COLUMNS

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ABSTRACT

This project report presents the numerical and theoretical study on the behaviour of cold formed steel lipped angle columns under hinged end conditions. The sections were analyzed by using ABAQUS software. Geometric and material non linearities were included in the model.

Parametric study was conducted by varying the thickness and length of the material. Three types of sections were chosen for this study are based on the geometric limitations for the pre-qualified sections provided in the North American Specifications for Cold formed steel structures (AISI S100 – 2007). The Analysis was conducted on 18 specimens with hinged end conditions. All the specimens are failed in Distortional Buckling. Theoretical study was carried out using Direct Strength Method in the North American Specifications for Cold formed steel structures. The Numerical results were compared with the Direct Strength method. Based on the comparison of results suitable recommendations were suggested in the direct strength method.

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RESEARCH PROJECT

ACADEMIC YEAR; 2019-2020

TITLE OF THE PROJECT: EXPERIMENTAL INVESTIGATION ON CONVENTIONAL CONCRETE AND LIGHT TRANSPARENT CONCRETE

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ABSTRACT

Transparent concrete allows light to pass through it because of the presence of optical fibres within the concrete wall. Light is transmitted from one surface of the said wall to the other, because of the presence of optical fibre strands along the width of the wall, which allows light to pass through. The principle objective of this project is to design translucent concrete blocks with the use of glass optical fibres, and then analyse their various properties and characteristics. All tests further performed on our concrete samples and on the optical fibres as such were done to ascertain the improvements of the casted blocks over normal concrete blocks of the same size and with the same design ratios, and to ascertain the practical utility of using transparent concrete as a building material for green building development.

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DEPARTMENT OF CIVIL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR; 2019-2020

TITLE OF THE PROJECT: EXPERIMENTAL STUDY ON CONCRETE WITH PARTIAL REPLACEMENT OF CEMENT BY DYEING INDUSTRIAL WASTE SLUDGE AND RED MUD

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ABSTRACT

In Tamil Nadu Erode alone, have about 830 large textile units as per Tamil Nadu state pollution control board. These industries have established two types of treatment process, they are eight Common Effluent Treatment Plants (CETPs) and many Effluents Treatment Plants (ETP), which is tends to treat 75,000 m^3 of effluent per day and the other hand the sludge will retained in treatment plant, which is hard to dispose and create environmental problems. Red mud is a waste material generated by a BAYER process. It is extraction of ore of iron material and it is easily available. The sludge from the industries and red mud is to be replaced with cement. This study is to investigate that the effect of addition of textile sludge and red mud as cement replacement material in the concrete. An experimental study was designed to find the compressive strength and at periodic intervals of 28 days. The results will be helpful reuse of waste sludge and to reduce the impact due to disposal of textile sludge and red mud.

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DEPARTMENT OF CIVIL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR; 2019-2020

TITLE OF THE PROJECT: REMOVAL OF NITRATE AND HARDNESS FROM GROUND WATER BY BIOREMEDIATION

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ABSTRACT

Water pollution is a serious problem in India as almost 70 percent of its groundwater and surface water resources are contaminated by biological, toxic, organic, and inorganic pollutants.The present research focused on low costs and environmental friendly water purification technology, which will benefit to the community.Hence,the present study was undertaken to study the bio-remediation treatment of ground water with seed powder and bio-filter.Bio-filter is one of the most important separation processes that can be employed to remove organic pollutants from air, water, and waste-water. Natural polymer coagulants are concerned by many researchers because of their abundant source, low price, environment friendly and biodegradable in water.Even though, it has been used over a century, it is still difficult to explain theoretically all the biological processes occurring in a bio-filter.The laboratory-and full-scale applications of the bio-filter in water and waste-water treatment are also needed.The efficiency of using these plants, seeds as plant-based cationic coagulants have been studied here.Therefore, the potentials and effectiveness of using active coagulant proteins are obtained from plant seeds for effective for removing hardness and nitrate in the ground water.

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RESEARCH PROJECT

ACADEMIC YEAR; 2019-2020

TITLE OF THE PROJECT: IDENTIFICATION OF GROUNDWATER POTENTIAL ZONES AND ARTIFICIAL RECHARGE SITES IN UPPER THIRUMANIMUTHAARU RIVER BASIN USING REMOTE SENSING AND GIS TECHNIQUES

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ABSTRACT

The upper Tirumanimuthar River basin covers an area of about 938.12 Sq.Km in Salem district of Tamilnadu. In the present research an attempts made to delineate the groundwater potential zones and artificial recharge sites in Tirumanimuthar river basin using integrated approach of Remote Sensing and Geographical Information System (GIS).

For the study we adopted remote sensing and techniques found that association with field work, these techniques provide very associate results very short time span for delineating the groundwater potential zones. The groundwater in the study area is restricted mostly to the zones of secondary porosity developed due to fractures, joints and weathering. The groundwater potential of hydro-geomorphological units, alluvial plain and pediplain is found to be good to moderate, while the pediment, highly dissected plateau and moderately dissected plateau units have poor to moderate groundwater potential.

Geomorphological analysis was carried out by using six geomorphic surfaces, such as alluvial plain, pediplain, pediment, valley fill sediments, highly dissected plateau and denudational hill. Good quantity of groundwater occurs in alluvial plain area, groundwater potential is restricted in valley fill sediment. Pediplain area has moderate to good groundwater potential, pediment area has moderate to poor, while the areas of highly dissected plateau and denudational hills are associated with poor groundwater potential.

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RESEARCH PROJECT

ACADEMIC YEAR; 2019-2020

TITLE OF THE PROJECT: EXPERIMENTAL STUDY ON CONCRETE BY PARTIAL REPLACEMENT OF CEMENT WITH RICE HUSK ASH

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ABSTRACT

The optimized RHA, by controlled burn or grinding, has been used as a pozzolanic material in cement and concrete. Using it provides several advantages, such as improved strength and durability properties, and environmental benefits related to the disposal of waste materials and to reduced carbon dioxide emissions. Up to now, little research has been done to investigate the use of RHA as supplementary material in cement and concrete production .The main objective of this work is to study the suitability of the rice husk ash as a pozzolanic material for cement replacement in concrete. However it is expected that the use of rice husk ash in concrete improve the strength properties of concrete. Also it is an attempt made to develop the concrete using rice husk ash as a source material for partial replacement of cement, which satisfies the structural properties of concrete like compressive strength.

From the entire experimental work & studies it is concluded that mix M20 with the replacement of 20% is the best combination among all mixes, which gives the maximum compressive strength.

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RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT: SMART PERSONAL ASSISTANT WITH ENHANCED FEATURES

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ABSTRACT

The aim of this Project is to develop a Smart Personal Assistant with enhanced features. Assisting users in performing their tasks is the main goal of today's personal assistant applications. Many such applications are being developed, which are capable to discover the user's habits, abilities, preferences, and goals, even more accurately and predicting the user's actions in advance and perform them without user's interaction. The assistant agent has to continuously improve its behaviour based on previous experiences. Improvements are achieved in personal assistant applications by learning mechanism. Agents are capable of accessing information from internet to guide people through different tasks, deploying a learning mechanism to acquire new information on user behaviour. Some features like URL shortener, iplookup, Chatbot, Weather and many can be added in the personal assistant as per the requirement of the user. In this project, we have designed a personal assistant that can be used in Command line Interface and by Speech.

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RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT: FATIGUE DETECTION SYSTEM TO ALERT THE DRIVER USING EYE BLINK DETECTION ALGORITHM

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ABSTRACT

Fatigue Detection system consists of a computer vision system that can automatically detect driver drowsiness in real-time video stream and then play an alarm to alert the driver if the driver appears to be drowsy and an alert message will be send to the owner along with driver's location. By using EAR value eye rates will be identified and when the value reaches, alarm will be provided and the alert message will be sent to an owner. Drivers who do not take regular breaks when driving long distances, run a high risk of becoming drowsy a state which they often recognize early enough according to the experts. This system shows that around one quarter of all serious accidents are attribute able to sleepy drivers in need of a rest, meaning that drowsiness causes more road accidents than drink-driving. Attention assist can warn of inattentiveness and drowsiness in an extended speed range and notify drivers of their current state of fatigue and the driving.

This system will primarily measure and record the real time features of the driver or the driving pattern and continuously evaluate the basics of the levels predetermined to indicate fatigue. The driver may show signs of fatigue in numerous ways. On the basis of the number of times the eyes are found to be closed, it can be determined whether the person is drowsy or not. If the driver shows the signs of fatigue, the system will alert the driver by playing an alarm sound and an alert message will be sent to the owner along with the location.

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RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT: Camera Vision Based Trash Classification And Detection Using Deep Learning

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ABSTRACT

Trash is a residual object that will be no longer used anymore. Usually, it was a result of some process, which is by a human doing or natural ecosystem. There are many classifications of trash, one is organic waste and the other is non-organic waste. Organic waste is easily decomposed by the organism. This organic waste usually likes leafage and animal carcasses.Non-organic waste is hardly decomposed by the organism. It's like plastics, bottles, etc., Recycling is necessary for a sustainable society as it helps minimize the amount of waste. However, the current recycling process requires recycling facilities to sort garbage manually and use a series of large filters to separate more defined objects. Although several action/behavior recognition methods have been investigated, these studies are hardly applicable to real-world scenarios because they are mainly focused on well-refined datasets. Because the dumping actions in the real-world take a variety of forms, building a new method to disclose the actions instead of exploring previous approaches is a better strategy and detected the dumping action by the change in relation between a person and the object being held by them. The person-held object was then tracked and the relation model between the joints and objects was built. . Utilizing deep learning to classify trash has the potential to make processing plants more efficient. This will not only have positive environmental effects but also beneficial economic effects. In this project, Camera Vision Based Trash Classification and Detection System Using Deep Learning are introduced.

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT: UNSOLICITED BULK EMAIL (UBE) USING NATURAL LANGUAGE PROCESSING

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ABSTRACT

Unsolicited Bulk Email (UBE) can be referred as Spam emails. Spam emails are also sent for phishing purpose that deceive users and lead the recipients to malicious websites with unethical intentions. Due to advertising agencies and social networking websites most of the emails circulated contain unwanted information which will be not relevant to the user. UBE cause inconvenience loss to the users so there is a need to filter them and separate them from the legitimate mails through Machine learning using Natural Language Processing (NLP) Algorithm. There are several techniques have been developed to block such spam emails but still the users receive. This is due to ability of the spammers to manipulate the filters of emails. To solve these problems, by presenting a method based on Natural Language Processing (NLP) for filtering of spam emails to enhance online security. The preliminary discussion in the study background examines the applications of machine learning techniques to the email spam filtering process of the leading internet service providers (ISPs) like Gmail, Yahoo and Outlook emails spam filters. Discussion on general email spam filtering process, and the various efforts by different researchers in combating spam through the use machine learning techniques was done. Here review compares the strengths and drawbacks of existing machine learning approaches and the open research problems in spam filtering.

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RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT: CONTROLLING SMART APPLIANCES USING SMART INTELLIGENCE

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ABSTRACT

With the rapid development of society, solutions to reduce energy consumption in the world have also gained attention, especially electrical energy. In this project, a system that can control light on and off by determining the position of the person is being developed in order to reduce the waste of electricity used in public buildings. In the age of automation, the ability to navigate persons and devices in indoor environments has become increasingly important for a rising number of applications. The proposed framework covers multiple types of information. In addition, we systematically discuss the problems and solutions of each unit according to the frame structure to identify research directions for the development of smart intelligence system. Raspberry PI, camera module and relay is used as a part of hardware requirements.

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT: Borewell Child Monitoring System

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ABSTARCT

Today's major problem faced by human society is water scarcity. which leads to a large number of borewell being sunk. This borewell in turn have started to take many innocent lives. Borewell which yielded water and subsequently got depleted all left uncovered. due to the uncovered borewell most of the innocent lives are taken. There are equipments used to operate and take the child out. But there is no equipments that are need to monitor the pulse and heart rate of the child. the objective of the project is to construct and design a borewell monitoring system using the pulse sensor. In the existing system they only set the cameras in the machine and send in to the borewell but in the proposed system with the help of cameras in the machine and also add the pulse sensor,high temperature o2 sensor and human body temperature sensor.The advantage in the proposed system is using the pulse sensor we can measure the exact pulse rate of the child in the borewell.

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RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT: CUCKOO SEARCH ALGORITHM-NEURAL NETWORKS FOR KIDNEY STONE DETECTION

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ABSTRACT

Computed Tomography (CT) scan images is a noninvasive imaging technique that uses X-ray technology to depict internal structures of the body such as the urinary tract. All kidney stones are visible on CT scan. Kidney are classified as abnormal images by preprocessing (i.e. grey- scale conversion), generate region-of interest, extracting the features as sobel filtering method , Cuckoo Search (CS) for optimization and Artificial Neural Network (ANN).The CS-ANN method is simulated on the platform of MATLAB and these results are evaluated and contrasted. The proposed system, an image pre-processing using filters in which image gets smoothed as well as the noise is removed from the image. Image enhancement is a part of preprocessing which is used to enhance the image which is achieved with cuckoo search algorithm. Next, the image segmentation is performed on the preprocessed image using sobel filter technique. The ANN is used for classifying the kidney images through extracted features and provides better classification by combining with CS algorithm. Keywords: Kidney stone, Pre-processing, Sobel filter, Cuckoo search, Artificial Neural Networks, CT scan images.

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT: DROWSINESS DETECTION SYSTEM USING CONVOLUTIONAL NEURAL NETWORKS

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ABSTRACT

Drowsiness/sleepiness is a serious issue that needs to be addressed for improvement in the safety of road driving. Drowsy driving is one of the primary causes of road accidents and death. Past statistical data on road accidents has shown enormous increases in car crashes due to drowsy/sleepy feelings. The proposed system used to detect real time drowsiness of car driver. Computer vision and embedded system are used to design the system. The system is based on behavioral based approach and neural activation changes occurring during wakefulness and in the drowsy state, in which Drowsiness detection System consider eye closing rate, eye blink frequency, iris edge detection and face detection. This project uses library functions such as OpenCV and keras to do all the operation related to images. Image processing techniques such as Convolutional Neural Network and Haar Cascade classifier are used for acquiring details of driver's eye object and face detection

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RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT: EFFECTIVE IMAGE ENHANCEMENT FOR FOG AFFECTED INDOOR AND OUTDOOR IMAGES

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ABSTRACT

Haze in the environment that will hinder the accurate recognition of objects captured in an image. To overcome the problem, image dehazing processes have been an active technique applied in much research work. Introducing an effective technique to enhance the images captured and degraded due to the medium scattering and absorption. It builds on the blending of two images that are directly derived from a color compensated and white-balanced version of the original degraded image. The two images gets fused, as well as their associated weight maps, are defined to promote the transfer of edges and color contrast to the output image. To avoid sharp weight map transitions that create artifacts in the low frequency components of the reconstructed image,it adapts a multiscale fusion strategy. The dehazing technique consists of three main steps: inputs derivation from the white balanced image, weight maps definition, and multi-scale fusion of the inputs and weight maps. Experiments are Implemented and Simulated using MATLAB.

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RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT: AUTOMATIC FACE DETECTION AND AUTHENTICATION LOGIN CREDENTIALS

PRINCIPAL INVIGILATOR: M.SIVAGANESH

CO-PRINCIPAL INVIGILATOR: R.SANDHIYA

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ABSTRACT

In today's era, security has great significance on everyone's forum. Biometric appears as a promising tool for Authentication System to further increase the degree of security. Several Biometrics like face recognition, fingerprint recognition and and are used. The face is one of the easiest ways to distinguish the individual identity of each other. Human face recognition procedure basically consists of two phases, namely face detection, where this process takes place very rapidly in humans, except under conditions where the object is located at a short distance away, the next is the introduction, which recognize a face as individuals. Stage is then replicated and developed as a model for facial image recognition (face recognition) is one of the much-studied biometrics technology and developed by experts. There are two kinds of methods that are currently popular in developed face recognition pattern namely, Eigenface method. Facial image recognition Eigenface method is based on the reduction of face dimensional space using Principal Component Analysis (PCA) for facial features. Biometric identifiers are reliable and unique for individuals based on their physiological (shape of the human being) and behavioural (the pattern of behaviour of a person) characteristics. Nowadays biggest growth area of biometric is Smartphone. The main purpose of the use of PCA on face recognition using Eigen faces was formed (face space) by finding the eigenvector corresponding to the largest eigenvalue of the face image. The area of this project face detection system with face recognition is Image processing.

PAAVAI ENGINEERING COLLEGE,
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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT: AN EMPHERICAL INVESTIGATION OF INVENTORY MANAGEMENT SYSTEM FOR PAPER MILLS

PRINCIPAL INVIGILATOR: DR.D.BANUMATHY

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ABSTRACT

Inventory measured in terms of money, constitutes an important element in the working capital of most business firms except financial ones. Their size and rate of turnover are greatly influences the working capital of the income and profit of a business. There is no proper stock management applications available in paper industry .This project consists of application which integrate the database of all the departments in the paper industry and automatically update the stocks and sales in the inventory without any missing of information using ant colony technique that provides the paper mills with high sales and turnovers by providing optimizaion and scheduling of stocks. It saves more time and money. This project concludes that the adoption of an appropriate combination of modern inventory management approaches can help practitioners to improve corporate service delivery in terms ensuring steady flow of materials while also minimizing the attendant carrying costs.

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT: An Effective Way of Using Resource Management Algorithm For Monitoring and Protecting The Crop Field

PRINCIPAL INVIGILATOR: R. Kaviyaraj

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT: ANALYSIS OF UDP AND TCP NETWORK TRAFFIC USING NAIYE BASED ALGORITHM

PRINCIPAL INVIGILATOR: P.RENUKA DEVI

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CHAPTER 1

INTRODUCTION

A network traffic analysis software tool, which provides searching, visualization, and preprocessing functions with a user-friendly GUI implemented in Java language. Within the huge network traffic data collected, a user can identify any particular packets using various searching functions provided. Visualization presents the analyzed result in a different setting to further enhance the analysis. The GUI in Java allows the tool to be used in different platforms. This tool is tested and demonstrated through several real network datasets. Network traffic analysis becomes more and more crucial in the IP network infrastructure as the amount of IP packets transmitted on the Internet at any given moment of time increases enormously. A thorough understanding of the IP traffic will help us better design our network topology and utilize bandwidth more effectively. From the perspective of security, it can also protect our system from attacks, such as intrusions, if we understand better the network traffic instead of treating them within a black box. Naive bayes algorithm used for classification purpose. we propose a new framework, Traffic Classification using Correlation information (TCC), to address the problem of very few training samples. The correlation information in network traffic can be used to effectively improve the classification accuracy. In the preprocessing, the system captures IP packets crossing a computer network and constructs traffic flows by IP header inspection.After that, a set of statistical features are extracted to represent each flow. Feature selection aims to select a subset of relevant features for building robust classification models. Flow correlation analysis is proposed to correlate information in the traffic flows. Finally, the robust traffic classification.

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT: SHARE MARKET PRICE PREDICTION USING MACHINE LEARNING ALGORITHM

PRINCIPAL INVIGILATOR: R.LOGANATHAN

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ABSTRACT

One decision in Stock Market can make huge impact on an investor's life. The stock market is a complex system and often covered in mystery, it is therefore, very difficult to analyze all the impacting factors before making a decision. Tried to design a stock market prediction model which is based on different factors. The prediction model predicts market as positive or negative with the help of different attributes. And also it is going to present and review a more feasible method to predict the stock movement with higher accuracy. The first thing have taken into account is the dataset of the stock market prices from previous year. The dataset was pre-processed and tuned up for real analysis. Hence, it will also focus on data preprocessing of the raw dataset. Secondly, after preprocessing the data, it will review the use of random forest on the dataset and the outcomes it generates. In addition, it examines the use of the prediction system in real-world settings and issues associated with the accuracy of the overall values given. And also it presents a machine learning model to predict the longevity of stock in a competitive market. Each factor was studied independently to find out its association with market performance. The successful prediction of the stock will be a great asset for the stock market institutions and will provide real-life solutions to the problems that stock investors face. The change in market showed the strongest association with market performance. The results suggested that behavior of market can be predicted using machine learning techniques.

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT: LANDSLIDE DETECTION USING RANDOM FOREST CLASSIFIER

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ABSTRACT

The aim of this project is landslide detection by using random forest classifier. Landslides are destructive and recurrent natural disasters that cost annually significant social and economic losses all over the world. These events can be induced by natural factors as earthquakes and extreme rainfall, as well as by human intervention, including construction and mining we explored OBIA, an image processing technique that has demonstrated better performance than the pixel-based approach, specially when the target objects are bigger than the cell resolution. The developed method consists in cloud-free images acquisition and determination of suitable features for image segmentation and image classification. In this project, It doesn't need any old datasets for landslide detection. we can find out detection for a new places even when there is no occurrence of landslide.

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT: AN EFFICIENT HEART DISEASE PREDICTION IN NAIVES BAYESIAN

PRINCIPAL INVIGILATOR: DR.D.BANUMATHY

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ABSTRACT

Smart heart disease prediction (SHDP)is built via navies Bayesian in order to predict risk factors concerning heart disease. The existence system is poor in processing large volumes of multistructured data using genetic algorithm. The present research utilizes naïve Bayesian classification techniques for effectively enabling heart disease diagnosis and thereby offering appropriate treatment. The proposed approach includes dataset collection, user registration and login (Application based), classification via navies Bayesian, prediction and secure data transfer by employing AES (Advance encryption Standard). The output reveals that the established diagnostic system effectively assists in predicating risk factors heart disease.

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT: WISDOM OF MODELS– BUSINESS PROFIT PREDICTION

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ABSTRACT

When there is no computerized system there is always a difficulty in predicting profit as there are many considerations to be done. Wisdom of Models is a machine learning algorithm for predicting profit via R&D costs, administration cost and marketing spend in a business. Wisdom of Models focusses on other three machine learning algorithms, SVR, random forest and multiple regression to derive a new prediction, which can be safer than depending on a single algorithm.

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT: CYBER-ATTACK DETECTION IN LARGE-SCALE SMART GRID BY MACHINE LEARNING

PRINCIPAL INVIGILATOR: DR.D.BANUMATHY

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ABSTRACT

Smart grid technology increases reliability, security, and efficiency of the electrical grids. It strongly dependence on digital communication technology bring up new vulnerabilities that need to be considered for efficient and reliable power distribution. A supervised anomaly detection based on statistical correlation between measurements is proposed. The goal is to design a scalable anomaly detection engine suitable for large-scale smart grids, which can differentiate an actual fault from a disturbance and an intelligent cyber-attack. Consequently the objective of this project is to detect the False Data Injection attack (FDI). The proposed method applies feature extraction utilizing Machine Learning and Shallow Neural Network (SNN) to reduce computational burden while discovering causal interactions between the subsystems. This system provides the possibility of automating the process of detecting attacks on smart grid, avoiding the great loss of money and power transmission loss.

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT: DIGITAL POPULATION CENSUS SURVEY THROUGH APPLICATION

PRINCIPAL INVIGILATOR: DR.A.SUPHALAKSHIMI

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ABSTRACT

The purpose of the project entitled as "DIGITAL POPULATION CENSUS SURVEY USING APPLICATION" is it concentrates on improving the efficiency of census data collection. The usual census data collection system involves an authorized enumerator, who collects the census data manually with paper and pen. This method has been a lot of time consuming and painstaking one. In today's world of data communication, a client tool for a portable system becomes important to access and update a database. The finest solution for this would be using a Personal Digital Assistant. An online census is the web-based application which allows respondents to complete the census via the internet. We have designed and developed such a client tool with Personal Digital Assistant. The idea is to implement by providing a Personal Digital Assistant containing the census application to every enumerator authorized by government through which they can collect census data and update the collected data to the census database thus saving time and money.

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT: TRENDING ANALYSIS AND SPAM DETECTION IN TWITTER

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ABSTRACT

Twitter spam has long been a critical but difficult problem to be addressed. So far, researchers have developed a series of machine learning-based methods and blacklisting techniques to detect spamming activities on Twitter. According to investigation, current methods and techniques have achieved the accuracy of around 80%. However, due to the problems of spam drift and information fabrication, these machine-learning based methods cannot efficiently detect spam activities in real- life scenarios. Moreover, the blacklisting method cannot catch up with the variations of spamming activities as manually inspecting suspicious URLs is extremely time-consuming. Novel technique based on deep learning techniques to address the above challenges. The syntax of each tweet will be learned through WordVector Training Mode.Then constructed a binary classifier based on the preceding representation dataset. In experiments, collected and implemented a 10-day real Tweet datasets in order to evaluate our proposed method. studied the performance of different classifiers, and then compared with method to other existing text-based methods. Then found the method largely outperformed existing methods. compared the method to non-text-based detection techniques. According to the experiment results, the proposed method was more accurate.

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT: TWITTER MORPHING AND TEXT IP ADDRESS BLOCKING USING NAIVE BAYSE ALGORITHM

PRINCIPAL INVIGILATOR: R.LOGANATHAN

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ABSTRACT

Twitter trends, a timely updated set of top terms in Twitter, have the ability to affect the public agenda of the community and have attracted much attention. Unfortunately, in the wrong hands, Twitter trends can also be abused to mislead people. We collect more tweets from the twitter accounts and using those collected tweets, we first conduct a data analysis and discover evidence of Twitter trend manipulation.

Then, we study at the topic level and infer the key factors that can determine whether a topic starts trending due to its popularity, coverage, transmission, potential coverage, or reputation. What we find is that except for transmission, all of factors above are closely related to trending. And we can find the person who is reason for the morphed pictures. Finally, we further investigate the trending manipulation from the perspective of compromised and fake accounts and discuss countermeasures.

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT: ANALYSIS OF UDP AND TCP NETWORK TRAFFIC USING NAIVE BASED ALGORITHM

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ABSTRACT

Network traffic analysis becomes more and more crucial in the IP network infrastructure as the amount of IP packets transmitted on the Internet at any given moment of time increases enormously. A thorough understanding of the IP traffic will help us better design our network topology and utilize bandwidth more effectively. From the perspective of security, it can also protect our system from attacks, such as intrusions, if we understand better the network traffic instead of treating them within a black box. Naïve bayes algorithm used for classification purpose, we propose a new framework, Traffic Classification using Correlation information (TCC), to address the problem of very few training samples. The correlation information in network traffic can be used to effectively improve the classification accuracy. In the preprocessing, the system captures IP packets crossing a computer network and constructs traffic flows by IP header inspection. A flow consists of successive IP packets having the same 5-tuple: {src ip, src port, dst ip, dst port, protocol}. After that, a set of statistical features are extracted to represent each flow. Feature selection aims to select a subset of relevant features for building robust classification models. Flow correlation analysis is proposed to correlate information in the traffic flows. Finally, the robust traffic classification engine classifies traffic flows into application-based classes by taking all information of statistical features and flow correlation into account.

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT: OPINION BEHAVIOR ANALYSIS IN SOCIAL NETWORK UNDER THE INFLUENCE OF COOPERATIVE MEDIA

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ABSTRACT

Interpersonal communication and media contact are important information sources and play a significant role in shaping public opinions of large populations. In this article, we investigate how the opinion-forming process evolves over social networks under media influence. In addition to being affected by the opinions of their connected peers, the media cooperate and/or compete mutually with each other. In this endeavor, a novel mathematical model of opinion dynamics is introduced, which captures the information diffusion process under consideration, makes use of the community-based network structure, and takes into account personalized biases among individuals in social networks. By employing port-Hamiltonian system theory to analyze the modeled opinion dynamics, we predict how public opinions evolve in the long run through social entities and find applications in political strategy science. A key technical observation is that as a result of the port- Hamiltonian formulation, the mathematical passivity property of individuals' self- dynamics facilitates the convergence analysis of opinion evolution. We show that public opinions become polarized or neutralized and investigate how an autocratic media coalition might emerge that ignores the public opinions. We also assess the role of interpersonal communication and media exposure, which in itself is an important topic in mathematical sociology.

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT: COMPRESSION MINING FOR MALWARE DETECTION USING ASVM ALGORITHM

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Abstract

Behavior-based malware detection, malware detection techniques are used in the majority. It is easy to detect known malicious programs in a system but the problem arises when the malware's unknown. Because unknown malware cannot be detected busing available known malware behaviors. Malware detection used some well know techniques such as graph-based technique. In the case of an unknown malware family of attack, detection is various challenging tasks. In malware detection used graph based mining. The process of classification improves the process of detection of malware. The used graph-based technique for malware classification and detection. The graph-based technique used for a feature collection of different malware data. The proposed algorithm is very efficient in compression of the previous method. Associative support- vector machine (ASVM) algorithms for analyzing software behavior. ASVM algorithm generates detection model learning from a sufficient dataset of malicious software.Signature based detection techniques detect unknown malware. It can be detected by using available known malware signatures approaches is required to represent malware features effectively to detect obfuscated, unknown, and mutated malware. Here, it emphasizes malware behavior, characteristics, and properties extracted by different analytic techniques and decides to include them to create a signature-based malware.

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT: FACE TRACKING ON THE LIVE STREAMING

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ABSTRACT

Human face detection by computer systems has become a major field of interest. Face detection algorithms are used in a wide range of applications, such as security control, video retrieving, biometric signal processing, human computer interface, face recognition's and image database management. However, it is difficult to develop a complete robust face detector due to various light conditions, face sizes, face orientations, background and skin colors. In this report, we propose a face detection method for color images. Our method detects skin regions over the entire image, and then generates face candidates based on a connected component analysis. Finally, the face candidates are divided into human face by an enhanced version of the template-matching method. Face recognition from image or video is a popular topic in bio-metrics research and artificial intelligence. Many public places usually have surveillance cameras for video capture and these cameras have their significant value for security purpose. It is widely acknowledged that the face recognition have played an important role in surveillance system as it doesn't need the object's cooperation. The actual advantages of face based identification over other bio-metrics are uniqueness and acceptance. As human face is a dynamic object having high degree of variability in its appearance, that makes face detection a difficult problem in computer vision. In this field, accuracy and speed of identification is a main issue. The goal of this paper is to evaluate various face detection and recognition methods, provide complete solution for image based face detection and recognition with higher accuracy, better response rate as an initial step for video surveillance. A Solution is proposed based on performed tests on various face rich databases in terms of subjects, pose, emotions, race and light.

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT: PREDICTABILITY OF IP ADDRESS ALLOCATION FOR CLOUD COMPUTING PLATFORM

PRINCIPAL INVIGILATOR: J.VELUMANI

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ABSTRACT

The recent emergence of public cloud offerings, surge computing - outsourcing tasks from an internal data center to a cloud provider in times of heavy load- has become more accessible to a wide range of consumers. Deciding which workloads to outsource to what cloud provider in such a setting, however, is far from trivial. The objective of this decision is to maximize the utilization of the internal data center and to minimize the cost of running the outsourced tasks in the cloud, while fulfilling the applications' quality of service constraints. We examine this optimization problem in a multi-provider hybrid cloud setting with deadline-constrained and preemptible but non-provider-migratable workloads that are characterized by memory, CPU and data transmission requirements. Linear programming is a general technique to tackle such an optimization problem.

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RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT: SMILE DETECTION BASED ON SVM CLASSIFIER

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ABSTARCT

Image processing is any form of processing for which the input is an image or a series of images and videos such as photographs, frames of videos. Smile detection is a special task in facial expression analysis with various potential applications such as photo selection, user experience analysis. In existing system, transfer learning based smile detection approach is used. To classify and detect the smile, the CNN classifier has been used, since the present system is not accurate. In proposed system use the Support Vector Machine detect the smile is upper smile, lower smile or non-smile. Smile detection performed using the pixels at left corner, right corner, upper mouth and lower mouth to identify the person and their unique features of smile and the implementation period is reduced.

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RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT: Securing Resources In Decentralized Cloud Storage

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ABSTRACT

To diminish the processing time and reaction time between Token solicitation and reaction, File transfer or download solicitation and results. It lessens the measure of extra room in distributed storage. To secure the secrecy of information differential approved copy check is utilized. It present this approved copy check in cross breed cloud engineering. The half and half cloud engineering proposes about both the open cloud and the private cloud. So as to give greater security, the private cloud is furnished with staggered confirmation. Headways in distributed computing are prompting a promising future for Collaborative Cloud Computing (CCC).

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT: A Fast And Recursive Transmission Algorithm Using Vanets

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ABSTRACT

Vehicular ad-hoc networks (VANETs) technology has emerged as an important research area over the last few years. A reliable transmission protocol is presented based on any cast routing. Using Optimizing Route Request Response Technique as a contribution, control overhead is minimized in the proposed protocol. Signal from the fall detection system is transmitted. This method is used for vehicle node to be able to upload the sensor data to the management center for storage is such a security risk, such as malicious tampering and data leakage is susceptible. In order to address the challenges of these security, on the basis of the Fast Recursive Transmission Algorithm (FRTA) sharing and storage system of data security is to be used. Fast routing protocol is proposed to guarantee the multi-hop wireless link between the source and destination using fast recursive transmission algorithm. Based on bilinear characteristics, the digital signature technology pairing for elliptic curve is used to ensure the reliability and integrity when transmitting data to the nodes. Emerging Consortium block chain technology, decentralized maintained by the entire network node, a safe, and provides a reliable data smart contract is used to limit the trigger condition for assigning data coin involvement vehicle contribution of data for a preselected node stores transmission and data. Security analysis and performance evaluation, our FRTA solutions, from the viewpoint of the storage and sharing of data, has demonstrated that the more secure and reliable.

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT: ATM SECURITY USING FACE RECOGNITION

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ABSTRACT

This system used to avoid the ATM robberies and wrong person misuses the ATM. There has been countless number of mishap and misrepresentations which usually occurs of in banking transactions.This paper proposes the alliance of Face Recognition System for verification process and enhancing the security in the banking region.

Using this system proposes the amalgamation of Face Recognition System in the identity verification process engaged in ATMs to enhance the security system.The recent progress in biometric identification techniques, including finger printing, retina scanning, and facial recognition has made a great efforts to rescue the unsafe situation at the ATM.

Features like face recognition and One-Time Password (OTP) are used for the enhancement of security of accounts and privacy of users. Face recognition technology helps the machine to identify each and every user uniquely thus making face as a key.Government agencies are investing a considerable amount of resources into improving security systems as result of recent terrorist events that dangerously exposed flaws and weaknesses in today's safety mechanisms.

Image recognition using fisherface method is based on the reduction of face space dimension using Principal Component Analysis (PCA) method, then apply Fisher's Linear Discriminant (FDL) method or also known as Linear Discriminant Analysis (LDA) method to obtain feature of image characteristic.

Finally, the current system is fully updated through latest technology as technology increases theft ,terrorism ,fraudlant also increases so this project also be updated to the current or latest system.

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT: Automatic Robbery/Theft Motion Detection Using Smart Surveillance with Artificial Intelligence

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ABSTRACT

Integrating image processing in video surveillance systems may be a challenging task that has been attempted for the past several decades. Despite being vulnerable to crime, (Bank) closed-circuit television has not been fully integrated with image processing application for detecting criminal activity. On the opposite hand, the traditional state of the art image processing algorithms available for occluded and covered face detection, human abnormal behavior analysis and illegal object detection may not work for banking sector having different environment (i.e. illumination and camera view), abnormal gestures, and crime devices. Literature review of previous research works on all possible image processing applications has been made in bank surveillance camera. The review embarks with the aim of categorizing the studies, analyzing their weaknesses and strengths, highlighting significant research findings and providing future research directions. To achieve these goals, the proposed system utilized the knowledge supported abnormality detection, features, system framework and methodology, image acquisition, sample specification, performance analysis and project funding. Furthermore, the system evaluates the studies from the purpose of view of their applicability, suitability, and usage in dynamic environment like bank. On the whole, despite having huge potential, a full-fledged video closed-circuit television integrated with Artificial intelligence algorithm has been found in the proposed system especially for bank sector. The findings of the system may help the longer-term researchers to develop dynamic and multipurpose algorithms for closed-circuit television which prevents bank theft.

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT: Block Chain Based Digital Voting System

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ABSTRACT

Election is a significant job in our Elective Government. As technology progress with upcoming days, its impact becomes more optimistic. One such outcome is the Blockchain. It is possible to transform the process of voting system due to its decentralized property of immutability. Voting in most places are non-transparent and common with the corruption. In this paper we proposed the technology, is Blockchain technology. The concept of this paper is to develop a decentralized application for voting system. From there, the transaction votes are stored in the blockchain could be illustrated by the examining the block hashes. The outcome of the project shows the transaction of tokens from voter's wallet into the candidate's wallet. This application can deploy on a test platform using the Ethereum Virtual Machine (EVM) it provides the network to test the application. From there, the integrity of the blockchain technology is illustrated.

Keywords: Blockchain,Decentralized,e-voting,Ethereum,SmartContract

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT: ENCODED POLYMORPHIC ASPECT OF CLUSTING

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ABSTRACT

In the big data era, the data are generated from different sources or observed from different views. These data are referred to as multi-view data. Unleashing the power of knowledge in multi-view data is very important in big data mining and analysis. Binary Multi-view Clustering (BMVC) has attracted increasing attention in recent years by aiming to exploit complementary and consensus information across multiple views. The paper summarizes a large number of multi-view clustering algorithms, provides a taxonomy according to the mechanisms and principals involved, and classifies these algorithms into five categories, namely, co-training style algorithms, multi-kernel learning, multi-view graph clustering, multi- view subspace clustering, and multi-task multi-view clustering. The basic idea of clustering algorithms is to partition a set of data objects according to some criteria, such that similar objects are grouped into the same cluster, and dissimilar objects are divided into different clusters.

Multi-view Clustering performs effectively on multi-view data by considering the diversity and complementary of different views. Let consider clustering problems in which the available attributes can be split into two independent subsets, such that either subset suffices for learning. In a multi-view clustering algorithm, the mixture components have a smaller overlap when the views are concatenated.

A principled binary multi-view clustering method, dubbed BMVC, was proposed for solving the challenging problem of multi-view clustering on large-scale image data, which can greatly reduce the computational complexity as well as the memory requirement.

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT: NFC BASED SAFETY AND SECURE VEHICLES MOVEMENT SYSTEM

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ABSTRACT

In our project Arduino based automatic vehicle engine locking with location tracking system. We hear lot of accidents due to drunken driving. Drunken drivers will not be in stable condition and so rash driving causes inconvenience for other road users. In this project we are developing an Automatic engine lock system.We are introducing a system that will detect drunken driver through alcoholic sensor through fitted on the steering .The controller keeps looking for the output from these sensors. If there are any traces of alcohol above the set limit, then the system will lock the engine.GPS and GSM are used to track the location and the system sends an alert to the owner on his mobile phone or mail as a short message (SMS). By implementing this system in vehicle, a safe journey is possible which would decrease the injuries during accident also reduce the accident rate. Additional features such as mobile call detector and vibration sensor are also included. Mobile call detector is used to detect the incoming and outgoing calls, SMS and video, etc.., and vibration sensor is used for the indication of accident to the police/ambulance.

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT: EAACK-A SECURE INTRUSION DETECTION SYSTEM FOR MANET'S

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ABSTRACT

Coal mining Disaster Management Systems that use Wireless Sensor Networks (WSNs). Software adopted ZigBee technology to build wireless sensor networks, determined out real-time surveillance with early-warning intelligence on temperature, leakage of gasoline in mining place, and alerting the manage station the use of wireless ZigBee technology. Different environment parameters can be detected by sensors, such as, the temperature useful for detecting mining, forest and building fires, toxic gases caused by an explosion, water level to detect and prevent floods, vibration level to detect chocks and many other data. By using RSSI communication method detecting the aliveness of the coal mining places disasters. The machine also monitors the LPG gas leakages the usage of fuel detection sensor, fireplace the use of temperature sensor, in the mines and if it exceeds the threshold degree, it alerts via alarm the usage of buzzer. The application followed ZigBee wi-fi technology to build wireless sensor networks, found out actual-time surveillance with early-warning intelligence on temperature, leakage of gas in mining place, and alerting the control station the usage of wireless ZigBee technology. Machine-to-machine communication technology concept enables ubiquitous connectivity between one or more autonomous devices without or with minimal human interaction. This technique allows the quick range of an person node to be accelerated and improved, covering a far larger region.

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RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT: SMART TRAFFIC CONTROL SYSTEM BY USING LIGHT DETECTION SENSOR TO START AND STOP THE ENGINE

PRINCIPAL INVIGILATOR : Dr.M.SUDHA

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ABSTRACT

Railway is the most popular and friendly transportation system of the largest part of the cities in the world. The development in railway sector resulted in an increase in railway traffic. Due to absence of technology the number of accidents in railway has increased. This project discusses on how to prevent these accidents. In this project, the proposed system uses Ultrasonic sensor with special Embedded system which aim at alerting the loco pilot to prevent the collision caused due to Insecure level crossing, obstacles. The proposed system makes use of the Ultrasonic sensor for sensing the obstacle on the railway track, Arduino board and Servo motor. The proposed system aims on maintaining the safe distance of 1km between the trains and object collision avoidance.

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RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT: MONITORING OF SMART GRID UNCERTAINTIES USING IMAGE PROCESSING

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ABSTRACT

In today's world, the images used are in digital format. In recent times, the introduction of information technology and e-healthcare system in medical field helps clinical experts to provide better health care for patients. The process of identification, segmentation and detection of infected area in brain tumour of MRI images are a difficult and more time consuming task. Through the image processing technique, the diagnosis region of any human part or the different anatomy structure of human body can be identified and classified more accurately. But simple imaging process will not provide better result regarding the diagnosis requirements of certain abnormal structures of human brain. Therefore, the development and involvement of Magnetic resonance imaging (MRI) technique has been increased more for obtaining the neural architecture of human brain. The MRI technique contains many imaging modalities that scans and capture the internal structure of human brain. So detection of such brain tumour location, identification and classification in earlier stage is a serious issue in medical science. By developing the new imaging techniques, it helps the doctors to observe and track the occurrence and growth of tumour-affected regions at different stages. It also includes noise removal technique, extraction of Grey-Level Co-occurrence Matrix (GLCM) features, DWT-based brain tumour region growing segmentation to reduce the complexity and improve the performance. The experimental results achieved nearly 100% accuracy in identifying normal and abnormal tissues from brain MR images demonstrating the effectiveness of the proposed technique.

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RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT: IMPLEMENTATION OF VLAN AND INTERN VLAN IN CORPORATE NETWORKS

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ABSTRACT

In traditional Local Area Network (LAN), all devices connected on switches belong to one broadcast domain. Virtual Private Local Area Network (VLAN) technology segments a physical LAN into different groups called VALNs and allows only devices on the same VLAN to communicate with one another while restricting devices on other VLANs from sending network traffic. This technology adds security in the LAN and controls network broadcast domain. Virtual LANs (VLANs) offer a method of dividing one physical LAN into multiple broadcast domains. However, VLAN-enabled switches cannot, by themselves, forward traffic across VLAN boundaries. For inter-VLAN communication, a Layer 3 router is required. This research paper discusses the VLAN protocol and different ways and possible protocols involved in creating and implementing Inter-VLAN routing for effective distribution of network services.

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT: IOT BASED WASTE MANAGEMENT SYSTEM FOR SMART CITY

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ABSTRACT

The present day scenario, many times we see that the garbage bins or dust bin are placed at public places in the cities are overflowing due to increase in the waste every day. It creates unhygienic condition for the people and creates bad smell around the surroundings this leads in spreading some deadly diseases, to avoid such a situation we are planning their multiple dustbins located throughout the city, these dustbins are provided with low cost embedded device which helps in tracking the level of the garbage bins and a unique ID will be provided for every dustbin in the city so that it is easy to identify which garbage bin is full. To access the concern authorities from their place with the help of Internet and an immediate action can be made to clean the dustbins. The proposed system will consist of waste bins that are equipped with ultrasonic sensor, DTH11, gas sensor which are interfaced with Arduino Uno and a Wi-Fi module. The system will collect the waste fill level status and upload the data to database. The data will be used to represent the bin level of the of all bins on the android application. Normally the electromagnetic waves or passive infrared radiation are emitted from the living body that is human body. This rays are observed by the PIR sensor. In here the dustbin are open when the human is arrive in front of the dustbin, otherwise it will be in closed condition. The ultrasonic sensor will detect depth of waste present in the dustbin and send it to the web server, through the mobile application the collected information is forwarded to concerned person mobile phone through the notification from developed application. Once a bin gets filled, notification will be sent to the appropriate client based on their location and the dustbin will be automatically closed. when the smart card is swipe in the dustbin it will open. If smart card gets damaged the lock is undo by passing the command to the web server through cloud.

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT: TIME BASED SMART SPEED BREAKER USING EMBEDDED SYSTEM

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ABSTRACT

The concept of this Project is to have an automatic speed breaker on time demand according to the requirements. Means when there is no need of the speed breaker on the road, it disappears from the road and the road becomes flat and when there is a need then the breaker comes on the road from ground and it starts its working of slowing speed of the vehicles. In implementation of this Project, we use an iron made hemi-cylindrical speed breaker which is capable of rotating itself using control circuitry of embedded systems. So when needed, it comes on the road by rotating itself from flat position and when not needed, it rotates itself again and gets flat and combines with flat road. In the system, real time clock is used to mention the required time for having the speed breaker on road. When time gets started, breaker comes on the road and remains until the countdown gets zero. In the Embedded system's clock any time and date can be stored on which the speed breaker is required on the road. So this type of speed breaker is useful before any building for which the time is specified for coming in the building and going out from it e.g. schools, any organization etc. Additionally we used a Wireless sensor network which provides a interface to monitor and control multiple humps at the same time. Further we used a internet of things (IOT) for better capability of handling from remote areas. For the exceptional cases like emergency or for the Ambulance the RF is used. So that the RF will automatically disable the Speed braking system. When the RF receiver, receives high signal strength then the microcontroller will command the system to disable at that time.

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT: SMART FARMING SYSTEM

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ABSTRACT

Smart forming system is autonomous & sophisticated, which will aid in the growth of agriculture yield by applying hi-tech agriculture technique without human intervention. There are lot of new technology have the potential to create a impact on the green revolution. In droughty California nowadays utilizing smart irrigation system not only for the environment sustainability but also for the lower expense of water usage in the field.

In olden days farmers used to figure the ripeness of soil and influenced suspicious to develop which kind of yield .they don't think about the humidity, level of water & especially climate condition. Motor is connected with DOL starter it contains on /off push button to start and stop the motor, GSM control circuit is connected to the DOL starter for control the motor turn on/off operation through the GSM control. There are three lands for the irrigation purpose that timer is giving the input signals to solenoid valve for only the time which required irrigating the land and that moisture sensor checks the lands moisture level and gives the signal to the timer.

In our system the man work for irrigation is eliminated & loss of water during irrigation is avoided by our system, this system provide unimaginable benefit to farmer in the field without require huge man work. The smart farming system developed by our team is adaptive plants and crops irrigation. This purpose of our smart farming system are to provide a water delivering schedule to the crop to ensure all the crop having enough water for their healthy growth, to reduce the amount of water wasted in irrigation, this system able to make decision for the user when distribute water into field.

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR:2019-2020

TITLE OF THE PROJECT: SMART TROLLEY FOR SHOPPING MALLS

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ABSTRACT

Nowadays, buying and searching at huge malls is turning into a daily activity in subway cities. We can see large rush at malls on holidays and weekends. The rush is even a lot of once there are special offers and discount. People purchase totally different things and place them in trolley. After total purchase one needs to go to cashier for payments. The cashier prepares the bill victimization bar code reader that could be a time overwhelming method and leads to long queues at charge counters. This project targeted to minimize the Queue at a billing counter in a shopping complex. Smart Trolley does the same by displaying the total price of the product kept inside the cart. In this way the customer can directly pay the amount at the billing counter and leave with the commodities he/she has bought. The hardware is based on Arduino Uno, RFID Reader Module, RFID Card and Buzzer. It eliminates the traditional scanning of products at the counter and in turn speeds up the entire process of shopping, also with this system the customer shall know the total amount to be paid and hence can accordingly plan his shopping only buying the essential commodities resulting in enhanced savings. Since the entire process of billing is automated it reduces the possibility of human error substantially. Also the system has a feature to delete the scanned products by customer to further optimize the shopping experience.

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR:2019-2020

TITLE OF THE PROJECT: SOLAR POWER SYSTEM USING MPPT ALGORITHMS FOR ON AND OFF GRID

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ABSTRACT

The photovoltaic (PV) maximum power point tracking (MP?T) based on biological swarm chasing behavior is proposed to increase the MPPT performance for a module-integrated PV power system. Each Module is viewed as a particle, and as a result, the maximum power point is viewed as the moving target. Thus, every PV module can chase the maximum power point (MPP) automatically. Comparing with a typical perturb and observe (P&O) MPPT method, the MPPT efficiency (η-MPPT) is improved about 12.19% in transient state by the proposed MPPT as theoretical prediction.

One of the most popular swarm intelligence paradigms is the particle swarm optimization (PSO), which is basically developed through the simulation of social behavior of bird flocking and fish schooling. PSO is a global optimization algorithm for dealing with problems on which a point or surface in an n-dimensional space represents a best solution. Particles move through the problem space, then, a certain fitness criterion evaluates them. Several areas have adopted the idea that swarms can solve complex problems.

The PV module can automatically chase the MPP by proposed bio-MPPT algorithm. One sampling time is required to decide accurately the MPP tracking direction. The bio-MPPT algorithm build in the master controller runs and command operating voltages. Irradiation and temperature are automatically recorded in the bio-MPPT controller. The MPPT behavior of the proposed bio-MPPT is still confused with partial shadow effect.

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT: SMART E-VEHICLE CHARGING SYSTEM BY USING RFID

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ABSTRACT

An increased number of Electric Vehicles (EV) on the roads, charging infrastructure is gaining an ever-more important role in simultaneously meeting the needs of the local distribution grid and of Electric vehicle users. This project proposed system RFID system for user identification and charging authorization as part of a smart charging infrastructure providing charge monitoring and control.

The RFID provides a cost-efficient solution to identify and authorize vehicles for charging and would allow Electric vehicle charging to be conducted effectively while observing grid constraints and meeting the needs of EV drivers. The vehicle charging is based on voltage level. In this system we can monitor our charging level through the server at any where any time using IOT.

The IoT cloud service offer applications that receive, analyse and manage data in real-time to assist Electrical vehicles users in making real time decision that would enhance the quality of electric vehicle charging. Here while tapping the RFID tag into the RFID reader then the signal is given to the Arduino controller board. Next step the user can select the output port because of in this smart charging system has the three level of output ranges like 60V output, 48V output and 12V output ranges. The Smart EV charging station is an innovative product developed for the growth of both two-wheeler and four- wheeler.

PAAVAI ENGINEERING COLLEGE,

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(AUTONOMOUS)

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT: WIRELESS VIDEO LED DISPLAY SYSTEM

PRINCIPAL INVESTIGATOR: P. HAMSAVENI

CO-PRINCIPAL INVESTIGATOR: S.MANIKANDAN

HoD

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ABSTRACT

The display development is driven by the increasing need to present information and graphics to larger audiences in more temporary and flexible formats. The need for portability, fast setup, easy reconfiguration and multiple uses has driven the need for light, efficient, easily erected, high quality displays. Through collaboration with multiple industry representatives, the display was designed to meet expectations of visual quality, portability, and display management, influenced by the LED arrangement, power efficiency, thermal regulation and physical construction. Notice Board is primary thing in any institution / organization or public utility places like bus stations, railway stations and parks. But sticking various notices day-to-day is a difficult process. A separate person is required to take care of this notice display.

This project deals about an advanced hi-tech wireless notice board. The overall software interface is simple, powerful, easy to learn and use. The project is built around the P6 LED module. This acts as a controller and Wi-Fi module provides all the functionality of the display. Display is obtained on LED Matrix Display Array on a printed circuit board. The scrolling speed text can also be changed according to user requirement using a mobile. This can be done using Wi-Fi wireless communication.

The key outcomes of this prototype include an operational, full scale prototype display, which implements large LED display colour aliasing, a purely passive thermal management solution, a rapid deployment system, and LED current control with two way display communication, auto-configuration and complete signal redundancy.

PAAVAI ENGINEERING COLLEGE,
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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT: SMART CLASS BASED ON FINGERPRINT ATTENDANCE SYSTEM AND SMART TV

PRINCIPAL INVESTIGATOR: T.NANDAGOPAL

CO-PRINCIPAL INVESTIGATOR: R.PRIYANKA

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ABSTRACT

Fingerprint attendance system aim to automate the attendance procedure of an educational institution using biometric technology The system of recording student attendance using fingerprint identification that allows student to monitor student attendance to class is a true electronically by using biometric recognition (visual biometric). It can reduce the presence of fraudulent student who are now mostly done by the students and system can also reduce problems such the presence of missing paper and easily damaged. In this project work, attendance is mark after student biometric identification. For student identification a fingerprint recognition-based identification system is used. Finger print features are the best and fastest method for biometric identification. It will be more secure to use and unique for every person don't change in one's lifetime. Identifying individual from a set of enrolled fingerprints is a time taking process. The proposed system has been implemented using C# programming by using Arduino. A smart learning setting not solely permits student to access digital resources and engage in learning system any place and anytime. Smart class is a digital initiative which is rapidly transforming the way teacher teach and student learn. Smart class as a modernized method of education in Indian education, Which provide quality education to student by using smart class. Without use of CPU, processor or computer required only a pen drive is plugged to smart TV. Smart TV we are used for Bluetooth, wi-fi connection, casting, audio system and network connection.

PAAVAI ENGINEERING COLLEGE,
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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT: HYBRID ELECTRICAL BIKE USING SUPER CAPACITOR

PRINCIPAL INVESTIGATOR: C.ARULKUMAR

HoD

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ABSTRACT

Different brands of Electric bikes are available in the market at present. In all most all Electric bikes a rear wheel with hub motor, lead acid battery pack, a light weight chassis, and a controller is placed which is very long and lifespan of batteries is short i.e. around years. Considering these limitations in this, we are giving solutions to modify the existing design to give a better performance. Super capacitor modules help to increase the lifespan of battery. Regenerative braking or a small control module could be availed onboard so as to charge battery or super capacitor. Along with the inclusion of modules and super capacitors, pedal system in electric bike also saves lot of battery power. The electric bikes which are available and are affordable incorporates a rear wheel Hub motor which is suitable and compact. The battery pack is a series combination of cells, a controller which controls the power transaction. Batteries are generally lead acid which are cheaper compared with other types. A potentiometer box is present which acts as accelerator along with other minor circuitry and accessories.

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT: AUTOMATIC FAN AND LIGHT CONTROL IN SMART CLASS ROOM

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HoD

Dr.G.GALAJIME.E, Ph.D.,
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ABSTRACT

Now a days a smart fan and light is very much essential to the concept of smart class. When it is hot using a fan which is less expensive then compared to air conditioner. Where some problems arises when individuals forgot to turn off the fan and light. These results in increase in electric bill. So they moved to automation. In the recent developments in automation is to sense the presence of human in the room. Most of the previous research paper explained that IR and PIR sensors as the sensing sensors. The performance of IR sensor has poor tolerance to light reflection such as bright light object. The passive infrared sensor (PIR) has the drawback of temperature limit. But ultrasonic sensors the main advantage is it does not have any range or zone like a PIR sensor. The ultrasonic sensor is used to measure the distance between the human and predefined set point. The microcontroller and ultrasonic transducer HC-SR05 forms the basic of the circuit. The ultrasonic module sends signal to the object the pick up its echo and output a wave form processing and varies the intensity of the fan. Here these sensors are fixed in the overhead ceiling fan in order to use the maximum length sequence (MLS) diffusors for sensing a 360 degree circumference beneath the fan and a thermostat maintain the temperature in the room. This paper also describes about the remote controller fan On pressing the OPEN switch and CLOSE switch, the curtain successfully open and close from the center respectively. And energy audit is also done here in order to know the usage of electric power in the form of graphical representation.

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT: BOREWELL CHILD RESCUE ROBOT

PRINCIPAL INVESTIGATOR: V.VIJIYAL

CO-PRINCIPAL INVESTIGATOR: D.MURUGESAN

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ABSTRACT

In the past few years, there have been several accidents of children falling into abandoned bore wells in India. Abandoned bore wells that have turned into death pits for children. The problem is all over India. Rescue teams spend hours and sometimes days in futile attempts to save these little kids.

A lot of money is also spent in these missions. In most cases they are unable to save the kids. Such events have happened umpteen times in the past, and every time either the government or the bureaucracy is blamed. The rescue process to save the child from bore well is a long and complicated process now.

The rescue team tries to approach the victim from a parallel well that take about 20-60 hours to dig. This complicated process makes 70% of the rescue operations fail. The design of handling system is made in such a way that the baby/victim never gets hurt and this rescue system is sent through the same well where the victim is felt inside to bring back the victim safe through an autonomous control of drives.

Our design constitutes a best Ergonomic Design and performs safest rescue operation. In addition to this incorporating of sensors makes the system to sense the condition of environment, which helps to increase the safety of victim and also reduces complexity of rescue operation.

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT: IOT BASED MESSAGE SCROLLING LED DISPLAY

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ABSTRACT

Notice boards are playing a very important role in our day to day life. By replacing conventional analog type notice board with digital notice board we can make information dissemination much easier in a paperless community. Notice board could be a primary factor in any establishment or public places like bus stations, railway stations, colleges, malls etc. Sticking out numerous notices day to day could be a tough method. A separate person is needed to take care of this notice display.

The objective of our project is to design a dot-matrix moving message display using microcontroller and IOT where the characters shift from left to write continuously. In this project we have used ATmega8 microcontroller. ATMega8 is a family of 8-bit microcontrollers. It has a maximum rated processor frequency of 16MHz. The ATMega8 lends itself extremely well to prototyping due to its simple requirement of a 4.5V-5.5V power source. It has a shift out frequency of around 100MHz and storage register of 3-stage output and finally we have used 16x32 dot- matrix display. At first a code was developed. And we got our desired result there.

This project is regarding advanced wireless notice board. In IOT based Web Controlled Notice Board, Internet is employed to wirelessly send the message from Browser to the LED display. The main objective of the project is to develop a wireless notice board that displays messages sent from the user's mobile application.

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT: DESIGN OF AC - DC CONTROLLED RECTIFIER FOR HYBRID ELECTRIC VEHICLE

PRINCIPAL INVESTIGATOR: K.K.POONGODI

HoD

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ABSTRACT

Hybrid electric vehicles are gaining a significant presence in automobile industry. However, the present-day hybrid electric vehicle mostly use battery as a secondary source of power. As a global warming countermeasure, reduction of carbon dioxide emitted from vehicles and improvement of fuel efficiency have become increasingly important of automobile industry. In such circumstances, many automakers concentrated their efforts on the development of hybrid electric vehicles. To overcome the above mention issue hybrid electric vehicles are introduced. In this project internal combustion engine (ICE) and electric motor combine together for providing a transmission to the vehicles.

In this project, mainly focused on the rectifier circuit. AC-DC conversion of electric power is widely used in several applications such as adjustable speed drivers, switch mode power supplies, uninterrupted power supplies and battery energy storage. Conventionally, ac-dc converters, popularly referred to as rectifier, are implemented using diodes and thyristors to provide uncontrolled and controlled dc power with unidirectional and bidirectional power flow.

An AC-DC converter which supplies electric power from a commercial power system to an onboard high voltage battery. A highly efficient low-cost hybrid three phase three level rectifier is proposed. At last, a simulation model is established in MATLAB/ simulink to test and the result verified the validity of the proposed system.

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT: FINGER PRINT BASED ONLINE PAYMENT SYSTEM

PRINCIPAL INVESTIGATOR: A.SUGANYA

CO-PRINCIPAL INVESTIGATOR: V.KUMARAKRISHNAN

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ABSTRACT

The technology model Finger Print Based Online Payment System. Aadhar Card unique mark installment frame work is utilized for different sort of instalment frame work opposed to conveying numbers. Today current big issue in e-payment system providing security is the uses banking transaction. Finger print technology is a bio-matric system. Is utilized to classify an individual based there physical qualities. Finger print payment system is and much safer and secured and base very easy to use even without using any password or secret codes to use and compared with previous system like, credit card, debit card and net banking payment system, wireless system. Finger payment system is most reliable economical and more advantage compare with others. On the focus development of a system that uses finger print bio matric as password which is stored in UID database, doing secure online cashless payment system. By using bio matric stored in UID database, identifying fraudulent person will become easier. The biometric payment system will solve this problem.

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT: REAL TIME BIOMETRIC BASED VEHICLE SECURITY SYSTEM OF SPEED CONTROL

PRINCIPAL INVESTIGATOR: S.THINESH

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ABSTRACT

This project has an aim to control the speed of any vehicles automatically in cities and also in restricted areas such schools, parks, hospitals and in speed limited areas etc. Nowadays in a fast moving world all the peoples are not have self-control. Such peoples are driving vehicles in a high speed so the police are not able to monitor all those things. This paper provides a way for how to control the speed without harming others. Driver does not control anything during such places, controls are taken automatically by the use of electronic system.

In this project we using RF for indicating the speed limit areas it is placed front and back of the restricted zones. RF receiver is placed inside the vehicle. Speed is acquired by the help of speedometer in the vehicle. The controller compares the speed. if it exceeds the limited speed the controller alerts the driver and controls taken automatically.

In addition we added biometric and fingerprint based password security system. This system will help for the user of vehicle and prevent from theft. If user forget the password they can use their fingerprint to unlock the vehicle. After receiving this signal RF transmitter sends a signal to the motor to reduce the vehicle speed automatically which can control vehicle speed immediately. Vehicle is controlled automatically without any manual operation when the vehicle is at 50 meter distance away from the front school zone.

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT: HARMONIC SENSING SMART METER

PRINCIPAL INVESTIGATOR: S.THIRUNAVUKARASAR

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ABSTRACT

In the modern world we are under a necessity to use the electrical equipment in our day-to-day life and for convenience of life. Due to increase in usage of electrical appliance, it may consume more power. It may also produce harmonics in power signal. Some of harmonics in the power signal are harmful to sensitive equipment and also cause power loss. It is essential to analyze the power signal and find the value of the THD (Total Harmonic Distortion). It is therefore important to find such harmonics and use different harmonic mitigation techniques to get the pure signal for safe operation of the connected equipment and minimize the power loss.

Harmonic distortion is the corruption of fundamental sine wave at frequencies that are multiple of the fundamental. Here the measurement of THD value is carried out by using arduino. The ratio between the real power and the apparent power is called as power factor. The main motto of any energy utility company is to maintain the unity power factor.

If the power factor value goes less than one, the load current value increases as they are inversely proportional. This may also incur more line losses. So here we measure the power factor value to maintain it properly and the THD value to

By using simulation we can analyze the waveform and we can also identify the order of harmonics.

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT: COST EFFECTIVE CONVERSION OF ELECTRIC BIKE

PRINCIPAL INVESTIGATOR: G.UMAMAHESWARI

HoD

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ABSTRACT

Air pollution from motor vehicles and exhaustion of natural resources has become a serious global and environmental hazard. The emission of poisonous gases such as carbon monoxide(CO), nitrogen dioxide(NO), sulphur dioxide(SO_2) and other hazard gases from two wheelers is a significant contributor to air quality problems which cause severe threats to all living organisms. Due to increase in number of vehicles and limited use of emission control strategies, two wheelers are considered to be a significant source of urban air pollution in most of the Indian cities.

To overcome such harmful effects, the modification of existing fuel operated bike into an electric bike is necessary. The alternate method involves the use of battery as the primary source. The high efficient brushless dc motor uses the supply from the battery to drive the wheels where the controller is used to govern the supply. Though this efficient operation is facilitated.

The conversion of existing bike into hybrid bike is cost effective and predominantly it reduces the number of air pollutants as well as the maintenance cost is much less compared to existing models.

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT: DESIGN AND DEVELOPMENT OF BREATH ACETONE BASED NON INVASIVE BLOOD GLUCOSE LEVEL MONITORING SYSTEM

PRINCIPAL INVESTIGATOR: Dr.B.MURALIBABU

HoD

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ABSTRACT

Diabetes is one of the rapidly growing chronic diseases in the world, for which the cost for both diagnosis and monitoring is expensive. The constant monitoring of blood glucose levels is necessary for maintaining the health of the patients and to alert medical specialists to take preemptive measures before the onset of any complication as a result of diabetes. The human body may get affected by various disorders as a result of the change in blood glucose level, it can be either due to increased or decreased amount of blood glucose.

The current clinical techniques for monitoring blood glucose are invasive which involves pricking the finger with a needle and piercing the blood. These conventional methods are uncomfortable and may lead to the occurrence of infectious diseases in diabetic patients. If the glucometer strip used by one patient was reused by another patient then it may spread contagious blood-prone diseases. Proper handling of the equipment is necessary for checking the glucose level in the conventional methods. In addition to that, optimum conditions were also required for monitoring blood glucose.

In this modernized world of embedded controllers and biomedical equipment, medical problems could be solved which may enhance the quality of life. Recent research has proven that acetone as a biomarker for diabetes which has a strong correlation towards blood glucose. Thus, we have developed a reliable, instantaneous, cost-effective, and high accuracy, IoT based non-invasive breath analyzer. The proposed system is an implementation of embedded controllers to monitor the blood glucose level through a non-invasive method. TGS822 gas sensor which has high sensitivity towards acetone was used for the measurement of acetone concentration in breath. The proposed methodology of monitoring blood glucose has overcome all the drawbacks in the existing conventional methods. The glucose level of the patients was uploaded to the google cloud account which could be viewed later for any future medical analysis.

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT: DESIGN OF DC–DC CONVERTER FOR HYBRID ELECTRICAL CAR DRIVE

PRINCIPAL INVESTIGATOR: C.HEMALATHA

CO-PRINCIPAL INVESTIGATOR: D.BOOPATHI

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ABSTRACT

Hybrid Electric Vehicle (HEV) is a recent developing technology in automobile industry. Now a day most of the vehicles are using fossil fuel like petrol, diesel while increasing the using of fossil fuel the emission of CO_2 and other toxic gas are pollutes the environment. And, also the shortage of fossil fuels increases. To overcome the above mention issue hybrid electric vehicles are introduced. The term hybrid is combination of two or more sources together In this project Internal Combustion (IC) engine and electric motor combine together for a providing transmission power to the vehicles.

To operate the electric motor in vehicle,72V DC supply is required. It is a plug-in type electric vehicle. So energy storage units such as battery (type) used to provide electric power to motor The maximum output of battery is 12V or 24V but the motor required 72V To balance the voltage demand, a DC-DC boost converter is designed and implement in the HEV.

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(AUTONOMOUS)

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT: PERMANENT MAGNET BRUSHLESS DC MOTOR COUPLING WITH GEAR AXIAL DRIVE IN HYBRID CAR

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ABSTRACT

As the conventional energy resources are depleting there is an urgent need for switching to renewable energy resources as well as increasing its functionality. This paper proposes a design of coupling of brushless DC motor with a modified rear axle for a normal car. The Permanent magnet brushless DC motor is a high efficient in operation with high torque in range.

The comparative investigation on the efficiency, weight, cost, cooling, maximum speed, and fault tolerance, safety, and reliability is carried out for switched reluctance motor, induction motor, permanent magnet blushless dc motor, and brushed dc motor drives, in order to find most appropriate electric motor drives for electric vehicle applications. The study shows permanent magnet brushless dc motor drives are the prior choice for electric vehicles. With ever-increasing concerns on our environment, there is a fast growing interest in electric vehicles (EVs) and hybrid EVs (HEVs) from automakers, governments, and customers. As electric drives are the core of both EVs and HEVs, it is a pressing need for researchers to develop advanced electric-drive systems. In this paper, an overview of permanent-magnet (PM) brushless(BL) drives for EVs and HEVs is presented, with emphasis on machine topologies, drive operations, and control strategies.

PAAVAI ENGINEERING COLLEGE,
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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT: ENHANCE THE POWER QUALITY OF SOLAR CELL SAVONIUS ROTOR HYBRID SYSTEM

PRINCIPAL INVESTIGATOR: P.ELAKKIYA

CO-PRINCIPAL INVESTIGATOR: S.SUGANYA

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ABSTRACT

The growing energy demand reduced supply of conventional fuels, evidenced by petroleum crisis. Development of alternative energy sources that are cleaner are renewable and produce little environmental impact. Among the alternative sources, the electrical energy from hybrid system is currently regarded as a natural energy source that is more useful, since it is clean, abundant and distributed over the Earth. In spite of the phenomena of reflection and absorption of sunlight by the atmosphere, it is estimated that solar energy incident on the Earth's surface is on the order of ten thousand times greater than the world energy consumption. A great advantage of hybrid system is the reduction of carbon dioxide emissions. These methods are accurate, fast and reliable. Hybrid system has become increasingly important as a renewable source due to its advantages such as absence of fuel cost, low maintenance requirement and environmental friendliness. These methods vary in complexity, sensors required, convergence speed, cost and range of effectiveness. Hybrid Systems holds the most potential to meet our energy demands. solar energy is present throughout the day but the solar irradiation levels vary due to sun intensity and unpredictable shadows cast by clouds, birds, trees, etc. Similarly, Wind energy is capable of supplying large amounts of power but its presence is highly unpredictable as it can be here one moment and gone in another. The common inherent drawback of hybrid systems are their intermittent natures that make them unreliable. This configuration allows the sources to supply the load separately or simultaneously depending on the availability of the energy sources. These regulators support step up and step-down operations for each renewable energy sources.

PAAVAI ENGINEERING COLLEGE

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DEPARTMENT OF MECHANICAL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT:

DESIGN AND FABRICATION OF TREAD MILL BICYCLE

PRINCIPAL INVIGILATOR: M.Makesh

CO-PRINCIPAL INVIGILATOR: J.Mahendran

PI/Co-PI

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ABSTRACT

This project deals with the design and fabrication of the treadmill cycle. The treadmills are not used to harness power, but as exercise machines for running or walking in one place, we are utilizing same principle for travelling a shorter distances. The motion of the machine is achieved by transferring the human's energy to the machine through the concept of treadmill. This machine can be helpful for travelling to short distances as well as used for exercise to the peoples. Using this machine, allotting a separate time for their exercise is not needed. The same action performed on the treadmill is used in this machine for the movement of the machine. As we (the operator), walks forward, the machine moves forward.

PAAVAI ENGINEERING COLLEGE

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DEPARTMENT OF MECHANICAL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT:

WASTE SPARATOR

PRINCIPAL INVIGILATOR: S.Prabhakaran

CO-PRINCIPAL INVIGILATOR: R.Mohanraj

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ABSTRACT

A waste separator is designed to separate the different types of waste like iron materials, papers, plastics and hard materials. This separator which consists hopper, belt conveyor, magnet, chamber, air blower and waste collection drums. The hopper carries a waste which passes through the belt conveyor. The conveyor consists two rollers. The magnet is placed on the inside of one roller. In this conveyor rolled with the help of DC motor. The belt is rolled and the waste transfer from one place to another. At the end of second roller due to magnetic force the iron materials are absorbed and deposite in a separate drum and other waste enter into the chamber. An air blower placed inside corner of the chamber. The blower release the air then light materials are separate at a certain distance and other hard materials carry the separate drum. The main concept of our project is separate the waste for recycling and reduce the waste dumping areas for the land availability of increasing the population.

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DEPARTMENT OF MECHANICAL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT:

SOLAR POWERED SMART TROLLEY FOR SUPER MARKET

PRINCIPAL INVIGILATOR: Dr.J.Selvakumar

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ABSTRACT

The super market is equipped with solar power plant. From this solar power plant electricity will be supplied to charging section and other utilities through battery storage system. Initially the trolley will be kept in charging section to charge battery in the trolley. The customer takes a trolley the passive infrared sensor in the trolley switched on automatically. The customer needs not to push the trolley. Using PIR sensor and DC motor, the trolley simply follows the customer at a specified distance. When the customer stopped at a place to pick a product, the trolley will also stop automatically. If the customer put the product in the trolley, the bar code scanner will scan barcode in the product and display the cost in LED display. When the customer put another product in the trolley, the cost of second product and total cost will also be displayed. The number of products put in the trolley and number of products billed will be compared to avoid products taken without billing. The customer can also remove any item from the bill by using display. The display will provide add and remove options to all the products put in the trolley. Ultrasonic sensors used to count the products put in the trolley. After completion of purchase, the customer goes to payment section. When the customer goes close to payment section, the total bill will be automatically transferred to payment counter computer through Zigbee.

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DEPARTMENT OF MECHANICAL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT:

FABRICATION OF COMPOSITE MATERIAL (ALUMINIUM-MAGNESIUM ALLOY)

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ABSTRACT

This project represent the fabrication procedure of making aluminium magnesium composite material by use powder moddulory method.in this method we make this composite materil by doing recinforcement process.composite material is less in weight,high in strength,or also less coastly.composites have many different properties like high thermal conductivity,haigh tensile strength.composite material is generally an mixture of two or more same or different metlas.we can use composite metal in different mechanical sector,because of there multipurpose uses. In composite material we can easily find two metlas properties in one metal. . The new material may be preferred for many reasons.

Composite materials are generally used for buildings, bridges, and structures such as boat hulls, swimming pool panels, race car bodies, shower stalls, bathtubs, storage tanks, imitation granite and culture marble sinks and countertops.

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DEPARTMENT OF MECHANICAL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT:

DESIGN AND FABRICATION OF BANANA FIBRE REINFORCED COMPOSITE

PRINCIPAL INVIGILATOR: R.Gunasekaran

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ABSTRACT

The natural fiber has many advantages such as light in weight, biodegradability, high strength, smaller elongation, fire resistance quality, moisture absorption quality and with promising mechanical strength. These fibers are growing towards eco-friendly technology, the present review discusses the research in the area of natural fibre composites with epoxy-based and analysis of mechanical properties. In this paper, mechanical properties of the composite material have been studied by considering different parameters like fiber content, fiber geometry, volume fraction, fiber size, properties of epoxy resin, and also orientation of fiber etc.

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DEPARTMENT OF MECHANICAL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT:

MACHINING OF ALUMINIUM COMPOSITE BY EDM AND MICRO EDM PROCESS

PRINCIPAL INVIGILATOR: S.Karthikeyan

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ABSTRACT

The composite materials are extensively used globally in major industries. It is very difficult to machine the metal matrix composite materials impeded with reinforcement by conventional machining methods . Hence non conventional machining techniques are employed to overcome these difficulties. The influence of process parameters of Electrical discharge machining such as current, pulse on- time and pulse -off time on Metal Removal Rate (MRR) and Surface Roughness (SR) were analysed for Al356 hybrid metal matrix composite reinforced with Silicon carbide (SiC) in this paper. The hybrid metal matrix composite was fabricated using stir casting process and machining was performed by EDM using copper tool with the machining parameters. The machining characteristics for different set of experiments were analysed. The optimum parameters were identified with the help of Taguchi's *L*9 orthogonal.and the optimum values were verified.

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DEPARTMENT OF MECHANICAL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT:

PERFORMANCE TEST ON ALTERNATIVE FUELS USED IN DI DIESEL ENGINE

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ABSTRACT

Continuous use of diesel based fuels is now widely recognized as unsustainable because of the depleting supplies and the contribution of these fuels to the accumulation of carbon dioxide and carbon monoxide in the environment. Renewable, carbon neutral, transport fuels are necessary for environmental and economic sustainability. Here we will compare the sole fuel with the blends of biodiesel extracted by two stage trans-esterification process from lemon-grass to study the performance characteristics and emission of diesel engine.The investigation was carried out in the DI diesel engine with the sole fuel blended with lemon grass and the engine performance and emissions, and will be analysed. From the experimental investigation it is observed that the brake thermal efficiency of B25 blend with 80ppm Aluminium oxide particles is 32.03% which is near to diesel fuel. The CO, HC, NOx emission are found to decreases for all the biodiesel blend with decrease in smoke emission when compared to that of diesel fuel.

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DEPARTMENT OF MECHANICAL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT:

FABRICATION OF HANDICAPPED STEERING CYCLE

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ABSTRACT

Mobility of physically disabled persons is a concerning social issue nowadays and various hand driven tricycles, wheelchairs, retrofitted vehicles etc. It's commonly available for disabled people as a mode of transportation. Traditional manual wheelchairs require considerable use and control of both arms for operation, thus adaptations are required for individuals with asymmetrical use of their arms. Building upon previous projects, the goal of this project was to create an accessory, to be installed on a standard wheelchair, which would allow full control of the wheelchair with only one arm/hand while addressing areas lacking in commercial products and previous designs, such as manufacture ability, attendant control, user comfort and ergonomics. After preliminary testing and analysis of three one-arm propulsion designs, the project team developed a design for a removable, lever-operated accessory which could be adapted to fit a range of the most popular standard wheelchair models. The propulsion system, connected to the main lever by a coupler link, consists of a dual gear-pawl assembly in which the desired direction of motion is chosen by moving a shifter to engage one of the two gears press-fit around clutches, each of which allows motion in only one direction, either forward or reverse. By including a neutral pawl position in which neither clutch is engaged, this design allows an attendant to propel and control the chair.

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DEPARTMENT OF MECHANICAL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT:

ROBOTTOILETCLEANER

PRINCIPAL INVIGILATOR: S.Maniraj

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ABSTRACT

There are many washrooms provided by the authority in the rural and urban areas but because of limited number of resources it is not possible to maintain all the cleaning assemblies from all areas so because of this we lag to maintain cleaning is these areas so all the things taken into consideration here decided to work on cleaning on washrooms of rural and urban areas. Here decided to work on a mechanism i.e. Fabrication of Advanced controlled Indian toilet sheet cleaning system .In modern world their lack man power to clean the toilet cleaning. Most of the disease is spread from toilet only .To maintains the toilet clean people can automatic toilet and normal people can use it. The disease mainly spread from washroom. Our main aim to develop the automatic toilet cleaner without man power. Now day's people are not ready to clean the washroom and shortage of man power. To overcome this problem automatic machine more useful. Over main to create low cost machine.

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DEPARTMENT OF MECHANICAL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT:

EXPERIMENTAL AND THEORITICAL INVESTIGATION OF CI ENGINE CHARACTERISTICS FUELLED WITH TYRE OIL AND DIESEL BLENDS

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ABSTRACT

Day by day increase in fossil fuels demand and price will be lead to search for alternative energy. This make us to do project in finding alternate fuel.Today scenario there are so many alternate fuels are under research. Today's problem is to dispose waste tyre in sate manner because of production of huge amount. So in this project we focused on converting the waste tyre into useful fuel. Initially we purchased waste tyre oil from supplier, if contains impurities, to remove impurities we go for purification process by . Then purified tyre oil was tested for basic fuel properties as per ASTM standard and compared with diesel are in this report. The properties are nearer to diesel fuel. So we planned to conduct experimental & theoretical investigation in Phase II

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DEPARTMENT OF MECHANICAL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT:

PARAMETRIC OPTIMIZATION OF SINGLE CYLINDER DIESEL ENGINE FUELED WITH WASTE TYRE OIL DIESEL BLEND FOR BRAKE THERMAL EFFICIENCY AND EMISSIONS USING TAGUCHI METHOD

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ABSTRACT

In present position of the world, energy crisis due to fast depletion of fossil fuel is main problem. Increase in fuel price day by day continuously, growth of automobile industry, rapid growth in individual mobility and improved living standard Considering a waste tyre oil as a substitute of diesel, Researchers are continuously finding best alternative solution. which gives the best performance and fuel characteristics. Most of waste tyre fuels used today for biodiesel or bio ethanol which can be used in existing engines. Recently in this field, the research work is going on to increase maximum portion of pyrolysis fuel in blend with diesel. Pyrolysis oil is obtained from tyre waste by process which is called pyrolysis process biodiesel was found to be higher for B20 (20% pyrolysis oil and 80% diesel) and B40 (40% pyrolysis oil and 60% diesel) blend among different combination of diesel blend. B60 and B80 delivered the maximum efficiency order to determine the optimum blend of pyrolysis oil and diesel on engine performance and emission characteristics of a variable compression ignition engine, two major input parameters namely blend of fuels and load the output parameter were efficiency and emission to be main design factors. pyrolysis oil mainly extract from waste tyre it is a fuel has heating value it is a good alternative energy to traditional limited energy in this sense diesel and pyrolysis oil are same.

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RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT:

ELECTRO CHEMICAL MICRO MACHINING OF COPPER ALLOY

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ABSTRACT

The industries like automobile, electronics, medical and biomedical sectors provide scope for various types of micro products/features made up of copper material. Due to the higher ductility of copper the electrochemical micro machining (EMM) is a prominent technique owing it's no tool wear, high accuracy, burr free and non-contact machining surface. Although enhancing of EMM performance is significant work in the micro components manufacturing industry. Hence, in this present work the hot air is mixed with aqueous citric acid ($C_6H_8O_7$) electrolyte (HAME) to machine high aspect ratio micro-holes (HAR micro-hole) and the results are compared with the dry air mixed electrolyte (DAME). The process parameters such as machining voltage (M_v), Duty cycle (D_c), and electrolyte concentration (E_c) are taken into account in evaluating the machining performance. The electrolyte temperature (E_t) and frequency are kept at a constant level as 36 ± 1°C and 85 Hz respectively. The machining performances are estimated by means of material removal rate (MRR), overcut (OC) and taper angle of the HAR micro hole (TAHAR-micro-hole).The MRR shows 1.43 times improvement for HAME at the parametric combination of 20 g/L, 13 V, and D_c at 90% and reduced OC by 30.4% over DAME.

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RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT:

PERFORMANCE STUDY OF BRONZE ALLOY

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ABSTRACT

ZCuPb20Sn5 alloy is a cast lead-tin bronze alloy. Due to its high lead content, it has excellent comprehensive properties such as friction reduction and wear resistance, high fatigue strength, good thermal conductivity, and good wear resistance. It is widely used in automobiles, Aerospace industry and other fields. Therefore, this article selects ZCuPb20Sn5 alloy as the research object. By adding rare earth La to ZCuPb20Sn5 alloy solution, the metallographic structure and mechanical properties are observed, and the effect of rare earth La on the microstructure and properties of ZCuPb20Sn5 alloy material is analyzed. The results show that with the increase of La content, the tensile strength, elongation and hardness of lead-tin bronze alloys all increase first and then decrease. Without the addition of rare earth lanthanum, the tensile strength of lead-tin bronze can reach about 241.5 MPa. Adding different amounts of rare earth to the lead-tin bronze alloy can improve the tensile strength and elongation of the alloy. When 0.04 wt.% rare earth lanthanum is added, The strength and elongation reached the maximum. After several experiments, the tensile strength remained at about 267.1, the elongation remained at about 15.13%, the tensile strength increased by about 25.6 MPa, and the hardness remained at about 80 HB, with little increase.

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DEPARTMENT OF MECHANICAL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT:

FRICTIONAL EVALUATION OF PLASMA SPRAYED COATING APPLIED ON THE CYLINDER KLINER

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ABSTRACT

Aluminium, steel and cast iron are the common materials used for engine components manufacturing. In this work we chose Al6061 because it consists of magnesium and silicon as its major alloying element, which provide good weldability and durability properties for making engine components like cylinder liner and piston crown. The components will be coated with ceramic combination of TiO2, ZrO2 and Al2O3. Al2O3
is taken as constant for the coating composition fraction volume 85% and other two ceramic powders (TiO2, ZrO2) are taken in different ratios. The ceramic coating compositions are mixed by using ball milling method for Nano accuracy. Plasma spray process is used to coat the composition over the Al6061 rod to protect the metal from wear and corrosion. the composition of the specimen subjected to the coated specimen
are pin-on-disc test to analyze the wear rate of the coating. Vickers-micro hardness tests is conducted to measure the hardness of coated materials and corrosion test also carried out to investigate the corrosion resistance of the coated materials.

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RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT:

DESIGN AND FABRICATION OF EMERGENCY RESQUE VEHICLE

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ABSTRACT

Traffic accidents are a result of the convergence of hazards, malfunctioning of vehicles and human negligence that have adverse economic and health impacts and effects. Unfortunately, avoiding them completely is very difficult, but with quick response to rescue and first aid, the mortality rate of inflicted persons can be reduced significantly. Smart and innovative technologies can play a pivotal role to respond faster to traffic crash emergencies comparing conventional means of transportation. For instance, Rescue Emergency Drone (RED) can provide faster and real-time crash site risk assessment to emergency medical services, thereby helping them to quickly and accurately assess a situation, dispatch the right equipment and assist bystanders to treat inflicted person properly. To conduct a research in this regard, the case of a traffic roundabout that is prone to frequent traffic accidents. Emergency Disaster Management Simulation (EDMSIM) has been used to verify the response time of RED from a fire station of the town to the presumed crash site. The results of the study demonstrate the robustness of RED into emergency services to help save lives.

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RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT:

TRIBOLIGICAL BEHAVIOUR OF INTERNAL PLASAMA SPRAYED AL6061 BASED CERAMIC COATINGS ON ENGINE CYLINDER

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ABSTRACT

In the present research work, various ceramic materials such as Al_2O_3 - Cr_2O_3 - SiC, and Al_2O_3 - ZrO_2 - TiO_2 were developed for the analysis of wear performance and hardness. The specimens were coated using plasma spray coating technique. A bond coat of 50 µm thickness was applied on the substrate using NiCrAlY for good adhesion before laying the top coat. The wear behaviour and hardness of the samples were investigated by wear and hardness tests. The Energy Dispersive X-ray Analysis (EDAX) was performed to analyse the chemical composition of the samples. The Field Emission Scanning Electron Microscope (FE-SEM) was used to analyse the surface and cross-section of the samples. X-ray diffraction (XRD) studies are carried out to understand the structural and crystallographic information. The performances of the coated and uncoated samples were compared and investigated. It was observed that the specimen with Al_2O_3 (60%) + ZrO_2 (20%) + TiO_2 (20%) coating produced best results for wear rate (0.03612 mm^3/Nm) and Coefficient of friction (0.357). The proposed ceramic coating composition could be recommended for automobile components that require good wear and heat resistance to improve the service life.

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DEPARTMENT OF MECHANICAL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT:

FABRICATION OF AGRICULTURAL MULTI PURPOSE MACHINE

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ABSTRACT

Agriculture has been the backbone of the economy and it will continue to remain. Agriculture is the science and art of farming including cultivating the soil, producing crops and raising livestock. Generally, cultivation of any crop involves various steps like ploughing, harvesting, sowing, and irrigation. Farmer has to use various agricultural equipment's and labours for caring out these steps, our purpose is to combine all the individual tools to provide farmers with multipurpose equipment which implements all the scientific farming techniques and specifications, suitable for all type of seed to seed cultivation with minimum cost as possible. All this can be done in this same machine. This multipurpose agro machine is wireless remote operated & designed and fabricated as a multipurpose equipment which is used for agricultural processes like ploughing, sowing seeds and sprinkling water. This machine works in both directions when it is pushed forward it ploughs the field with the help of plough. The height of the plough can be adjusted, with the help of screw arrangement and the seed feeder is mounted directly to the motor. The motor rotates and the shaft attached to it has holes. The motor is directly attached to the shaft with holes. When we push the agriculture machine in a backward direction, we can pick the plough up from the ground and the pump which is attached to the front shaft will start pumping the water from the tank and it will sprinkle water over the field.

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DEPARTMENT OF MECHANICAL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT:

ALTERNATIVE FUELS FOR PETROL ENGINE

PRINCIPAL INVIGILATOR: V. Senthilkannan

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ABSTRACT

The strict regulation of environmental laws, the price of oil and its restricted resources, has made engine manufacturers use other energy resources instead of oil and its products. Despite the fact that nowadays alternative fuels are not currently widely used in vehicular applications, using these kinds of fuels will be definitely inevitable in the future. In this paper, a computer code is developed in Matlab environment and then its results are validated with experimental data. This simulated engine model could be used as an powerful tool to investigate the performance and emission of a given SI engine fueled by alternative fuels including hydrogen, propane, methane, ethanol and methanol. Also, the superior of alternative fuels is shown by comparing the performance and emissions of alternative fueled engines to those in conventional fueled engines. Eventually, it is concluded that volumetric efficiency of the engine working on hydrogen is the lowest (28% less that gasoline fueled engine), gasoline produce more power than the all being tested alternative fuels and BSFC of methanol is 91% higher than that of gasoline while BSFC of hydrogen is 63% less than gasoline.

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DEPARTMENT OF MECHATRONICS

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT:

AUTOMATIC INSPECTION AND WEEDING IN AGRICULTURE USING IoT

PRINCIPAL INVIGILATOR: Ms.Sumithra.C

CO-PRINCIPAL INVIGILATOR: Mr.S.Rajesh Raja

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ABSTRACT

This inspection strives to develop a robot capable of performing operations like automatic monitoring, inspecting water content according to seed varieties by use of IoT and it automatically weeds the plants which is manually controlled by the user. It checks the level of humidity and informs the farmer. The operating system will be facile even for uneducated peoples. It is user friendly products in which the controls will be facilitate to operate. The monitoring and spraying is been controlled by mobile phone in the basis of IoT. From the initial operation to the final operation, the total control is on phone control. Hence the advent of robots in agriculture drastically increased the productivity and output of agriculture in several countries. Further, the usage of robots in agriculture reduced the operating costs and lead time of agriculture. The current paper reviews the success stories of robotic agriculture in different areas of agriculture. The work also throws light on the future scope of robotic agriculture especially in developing countries It may be useful in every form of application in agricultural field in future use. To date we prepared automatic inspection and weeding whether the crop is good and automatic spraying among crops.

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DEPARTMENT OF MECHATRONICS

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT:

DESIGN AND FABRICATION OF COMPRESSOR FOR AUTOMATIC AIR FILLING

PRINCIPAL INVIGILATOR: Dr..D.R.P.Rajarathnam

CO-PRINCIPAL INVIGILATOR:

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ABSTRACT

An air compressor is a device that converts power using an electric motor into potential energy stored in pressurized air. By one of several methods, an air compressor forces more and more air into a storage tank increasing the pressure. When tank pressure reaches its engineered upper limit, the air compressor shuts off. The compressed air, then is held in the tank until called into use. The energy contained in the compressed air can be used for a variety of application utilizing the kinetic energy of the air as it is released and the tank depressurizes. When tank pressure reaches its lower limit air compressor turns on again and re-pressurizes the tank. An air compressor must be differentiated from a pump because it works for any air, while pumps works on a liquid. Air compressor were designed to compress air to high pressure and harness this potential energy source. Unlike other source of power on conversion from another form of energy.

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DEPARTMENT OF MECHATRONICS

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT:

ANTI-TANK RADAR GUIDED MISSILE SYSTEM

PRINCIPAL INVIGILATOR: Mr.Ajaykarthik.R.T

CO-PRINCIPAL INVIGILATOR:

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ABSTRACT

The aim of our project is to design and develop the automated movable radar system. The movements of the missile are controlled by the Bluetooth connection from the mobile phone. The launching and positioning of the missile system is done by the ultrasonic waves developed by the ultrasonic sensor. The system comprises of the microprocessor Arduino UNO and Motor driver shield, and also the electronic devices like Ultrasonic sensor (HC-SR04), Servo motor, TT gear motor, Bluetooth module (HC-05). Assembling and connections are made as per the circuit connections and then programming is done with the arduino coding language, simulated and verified in the Arduino IDE, then interfaced to the Arduino UNO. This project is useful in the defense purpose.

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DEPARTMENT OF MECHATRONICS

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT:

AUTOMATIC BUS INDICATION AND TRACKING SYSTEM

PRINCIPAL INVIGILATOR: Mr.T.R.Arunprasand

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ABSTRACT

The present generation requires the information time to time. The use of technology has been increasing day by day. So we are planning for the combination of present technology with the requirement of information transmission, we planned for the creative approach of "Automatic bus indication and tracking system". To overcome the drawbacks of the previous methods of paper based and we introduce a project "Automatic bus indication and tracking system". This Vehicle Tracking System can also be used for Accident Detection Alert System, Soldier Tracking System and many more, by just making few changes in hardware and software and widely in tracking Cabs/Taxis, stolen vehicles, school/colleges buses etc.

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RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT:

Automatic Temperature Based Fan Controller Using Thermistor

PRINCIPAL INVIGILATOR: Mr.S.punithan

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ABSTRACT

Over the last decade, advances in electronics have made devices smaller, cheaper and faster. This project is about how the speed of a fan can be controlled, based on temperature sensor. It is also a part of smart home application where the fan will gradually increase its speed if the temperature is increasing. In general, home appliance fans need to be operated manually with the help of regulators with the variation of temperature, thus requires a repeatedly extra effort for regulating the fan speed which acts to our agony. So as to reduce this extra effort and to add comfort, it is intended in this paper designing an "Automatic Temperature based Fan Controller using Thermistor". In this project the main intension is to control the fan by heating the sensor, i.e. the thermistor, where the speed of the fan is dependent and controlled by any device's temperature like PC. As the temperature of the device increases or decreases, the speed of fan increases or decreases respectively. So it can be used mainly as a cooling device. By modifying the circuit slightly, it can also be used to control the room temperature, depending on the property of thermistor. The thermistor used in the circuit here, decreases its resistance with increasing temperature, hence the electrical conductivity also increases, increasing voltage across it, resulting in an increment in the speed of the fan. Thus, it is possible to control the speed of the fan automatically when the device's temperature varies. Experiment can be followed to evaluate whether this circuit can save energy through the use of temperature sensor and thus promote efficiency.

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RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT:

GESTURE CONTROLLED WHEEL CHAIR

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ABSTRACT

This paper presents a Hand Gesture Controlled Wheel chair using Arduino and lily pad, which can be controlled by simple hand gesture. According to the movement of the person hand, the lily pad start moves. It is based on 3axis of accelerometer and vehicle moves in four directions forward, backward, left and right. For sensing Human motion, we use infrared sensor, it is range is 800 mm wavelength from human body. The main goal of this project is to control the movement of the vehicle with hand gesture using accelerometer. This gesture Wheel Chair is very useful for physically challenged people. In previously, the physically challenged people using their wheelchair movement by using joysticks. It creates more pressure and stress in their hands. By using this the movements are very easy to them to operate. In previous gesture devices we are using Arduino UNO. But here by using ARDUINO LILYPAD which senses minor movements in their hands. These wireless communications make the user to interact in a friendlier way.

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RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT:

HYBRID VEHICLE PARKING SYSTEM

PRINCIPAL INVIGILATOR: Mr. Arunbabu.R

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ABSTRACT

Here we have fabricated the model for "HYBRID VEHICLE PARKING SYSTEM". It is the concept but the steering control with four wheel drive. It is an innovative concept which is mainly used in four wheeler vehicles. Four-wheel Arduino control is a system employed by some vehicles to improve steering response, increase vehicle stability while maneuvering at high speed, or to turn at low radius at low speed. In most active four-wheel steering systems, the rear wheels are steered by a controller and actuators. This allows the vehicle to turn in a significantly smaller radius, sometimes critical for large trucks or tractors and vehicles with trailers. So we are introducing small model of four wheel Arduino control through this project. Four wheel Arduino control is a system that allows the rear wheels to turn for maneuvering rather than just follow the front wheels. This would be very useful in industrial areas with less floor space. In addition with four wheels steering the vehicle is a multi-utility vehicle, so it is used for scrap collecting, shifting etc. To overcome problem like vehicle maneuvering on narrow roads and during parking this system has been proposed.

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RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT:

MASK 2ND GENERATION

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ABSTRACT

The Masks are used as a protection device but it is not highly efficiency to protect a person from the dust, pollution, gases, etc. By this project mask-2 nd generation the protection of a person's life from dust, pollution, gases can be increased, by this increment in protection leads a person to healthy life from pollution and other form of dust, gases that affects the human health. This mask gives fresh air to breath were the breathing problems are reduced and the person may have a cure.

This mask is categorizing into two types based on the filters used in it: uni-functional filter and multi-functional filters. The filters play a major role in this mask which is the heart of the mask. The airflow is maintained by the motors which are in the form of 2:2 rations where 2- motors for suction and 2- motors for exhaustion. These motors and connecting tubes used in this mask act as nerves. The air flow is the important thing to be maintained to get a good air for breathing. The technology used here is the compression/minimization of large industrial technologies like Electro Static Precipitator (ESP), filters. It is a device used to collect carbon particles from the polluted atmospheric air. This is minimized into a pocket device where the high voltage supply is to be given for that ESP-process.

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RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT:

MEDICAL ASSISTANT ROBOT

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ABSTRACT

In today's world there is an increasing need to create artificial arms for different inhuman situations where human interaction is difficult or impossible. They may involve taking readings from an active volcano to diffusing a bomb. Here we propose to build a robotic arm controlled by natural human arm movements whose data is acquired through the use of accelerometers. For proper control mechanism and to reduce the amount of noise coming in from the sensors, proper averaging algorithm is used for smoothening the output of the accelerometer. The development of this arm is based on ATmega328 platform along with a personal computer for signal processing, which will all be interfaced with each other using serial communication. Finally, this prototype of the arm may be expected to overcome the problem such as placing or picking hazardous objects or non-hazardous objects that are far away from the user.

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RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT:

A NOVEL SECURITY ENABLED SYSTEM FOR VEHICLE USING WIRELESS TECHNOLOGY

PRINCIPAL INVIGILATOR: Mr.P.sabari

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ABSTRACT

Nowdays most of the accidents are occurred due to non licence drivers careless driving.So here a system is introduced that will avoid accidents to a particular level. a vehicle on road is that a system is introduced that will avoid accidents to a particular level. A vehicle on road is that the person should be a licence holder,Which the permission is issued by he government to drive a vehicle. So to check that firstly an RFID card is provided to licence holders and the details are checked.The authorized licence holder can access every vehicle by using digital RFID licence and can switch on the engine also.

The system also detects alcohol concentration on the breath, Just like common breath analyzer.the alcohol sensor used in this embedded system is to determine wheather the driver is drunk or not.The system also provide safety measures for limiting the speed of the vehicle.For that a hall effect sensor is used.It is one of the magnetic field sensor which are used to calculate the speed of the vehicle .The system is inbuilt in a vehicle and the trackin system works on GPS and GSM\GPRS.The embedded device will send all current information to android phone by using Bluetooth communication.The informations contains liceence number ,vehicle speed and alcohol status.

The GSM\GPRS module attatched in smartphone is used to transmit and update the vehicle location to a database.A smart phone application is also developed for continuously monitoring the vehicle location.A voltage converter IC (MAX232) is used to convert the voltage level and system can connected to the PC.The PC is used to store the details of the licence holder

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RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT:

SEMI-AUTOMATED TROLLEY FOR SUPERMARKETS WITH ULTRASONIC SENSOR AND RFID

PRINCIPAL INVIGILATOR: Mr.M.Ramesh

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ABSTRACT

Consider any shopping mall we have to wait much time for billing even though you purchase little things and we are not aware of cost of the product that we wanted to purchase. With the help of this project we reduce the billing time and customers can know the exact cost of the products that they purchased before billing so that they can do their shopping within their budget. The objective of this project is to improve the speed of purchase by using barcode. This project is designed to use the Barcode based system application in the shopping trolley. This project is used in shopping complex for purchase the products.

In this project RFID Key fob is used as check the access of the trolley. If the product is put in to the trolley means it will shows the amount and also the total amount. But in this project RFID Key fob with 13.6 MHZ is used for accessing the trolley. So this project improves the security performance and also the speed. In this project Barcode is used as security access. So each product has the individual barcode which represents the product name. Barcode reader is interfaced with micro controller. Here the micro controller is the flash type re-programmable micro controller in which we already programmed with card number. Ultrasonic sensors will avoid the bumping of the trolleys. The billed products will be sent to cashier which will be sent to server to make at Point of Sale.

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DEPARTMENT OF CHEMICAL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT: In vitro GC-MS and anti-diabetic analysis of phyllanthus niruri

PRINCIPAL INVIGILATOR: Dr.G.Srinivasan

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ABSTRACT

Phyllanthus Niruri means (Keezhanelli) is used in herbal medicine for treatment of diabetes. The objective of this study was to investigate the Anti-Diabetic analysis of *phyllanthus niruri* using *In-vitro* α-amylase assay on methanolic and chloroform extract. Methanolic and Chloroform extracts of the plants were prepared by Soxhlet extraction. Distillation is partial separation that increase the concentration of sample in the solvent extract. The bio active components of methanol and chloroform extracts were evaluated by GC-MS analysis**.** Preliminary phytochemical screening of different extracts of *phyllanthus niruri* revealed the presence of alkaloids, proteins, amino acid, flavonoids, tannins, phenolic compounds, saponins and phytosterols.972.91 µl of chloroform extract have IC_{50} and 449.03 µl methanolic extracts have IC_{50}. Methanolic extracts of the plant showed maximum anti diabetic activity as compared the chloroform extracts. Methanolic extract of *phyllanthus niruri* showed the presence of nine bioactive components. Humulin and Betulin is present in the *phyllanthus niruri* methanolic extracts with peak area highest percentage (11.82 %) and used to control Insulin level in blood cell.The findings indicate that all the above plant extracts possess anti-diabetic properties too varying degrees. They can used to developed natural drugs which may be used in lieu of commonly used strong allopathic drug which possess a number of harmful side effects.

Key words:

Phyllanthus niruri, Anti-diabetic activity, GC –MS Analysis, Soxhlet extraction*, In Vitro* α - amylase assay.

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DEPARTMENT OF CHEMICAL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT: In vitro immuno madulatory activity and GC-MS analysis of catharanthus roseus extracts

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ABSTRACT

Researches carried out over the years have demonstrated the growing interest in recovering phytochemicals from plants. *Catharanthus roseus* means (Nithyakalyani) is used in herbal medicine for treatment of inflammation diseases. The main goal of this work is to investigate the immunomodulatory analysis of *Catharanthus roseus* using *In-vitro* NBT assay on petroleum ether and n-Hexane extract. Petroleum ether and n-Hexane extracts of the plants were prepared by Soxhlet extraction. Distillation is partial separation that increase the concentration of sample in the solvent extract. The bio active components of n-Hexane extracts were evaluated by GC-MS analysis**.** Preliminary phytochemical screening of different extracts of *Catharanthus roseus* revealed the presence of alkaloids, proteins, amino acid, flavonoids, tannins, phenolic compounds, saponins and phytosterols. Petroleum ether and n-Hexane having IC_{50} values are 730.66 and 326.00. n-Hexane extracts of the plant showed maximum immunomodulatory activity as compared the petroleum extracts. n-Hexane extract of *Catharanthus roseus* showed the presence of thirteen bioactive components. β-Amyrinacetate, 1-Nonadecene and Azulene is present in the *Catharanthus roseus* n-Hexane extracts with peak area 1.67%, 0.62% and 0.14% and used to control the inflammation activity and increase the leucocyte cells in the human body.The findings indicate that all the above plant extracts possess immunomodulatory activity properties too varying degrees. They can used to developed natural drugs and this will help for further research details.

Key words:

Catharanthus roseus, Immunomodulatory activity, GC –MS Analysis, Soxhlet extraction*, In Vitro* NBT assay.

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DEPARTMENT OF CHEMICAL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT: Extraction and characterization of pectin from citrus medica

PRINCIPAL INVIGILATOR: Mr.D.Sreenivasan

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ABSTRACT

Pectin can be used as food and pharmatecitical additives. This study investigated the effect of temperature, time and pH on the yield and physicochemical characteristics of pectin extracted from *Citrus Medica* peels. Pectin was extracted using acid extraction method. The optimum temperature, time and pH for the extraction of pectin for both peels were determined to be 82°C, 105 min respectively. The yields of pectin under these optimum conditions were found to be 18.5% *Citrus Medica* peel respectively. Temperature, extraction time and pH showed a significant ($p < 0.05$) effect on the pectin yield. The equivalent weight, methoxyl content, anhydrouronic acid content, degree of esterification, moisture content and ash content of the Citrus Medica peel pectin obtained under the optimum conditions were found to be 476.01g/mol, 1.56%, 10%, 64.5%, 88.6%, 3.3%. In general, the finding of the study shows that pectin, being used as food and pharmaceutical additives, can be obtained from *Citrus Medica* peel.

KEYWORDS: *CitrusMedica*, Degree Of Esterification, Methoxyl Content, Ash content.

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DEPARTMENT OF CHEMICAL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT: Isolation of chitin and its derivative from scylla serata

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ABSTRACT

Extraction and depolymerisation of chitin and chitosan from Scylla Serrata was carried out using various chemical procedures. Scylla serrata is one of the most used and predominant marine animal and its waste is one of the agricultural waste. So in order, as a management method, this process is being used. Sodium hydroxide and hydrochloric acid solutions were used for deproteination and demineralization. Respectively, acetone was used for decolourisation. The chitin was deacetylated using sodium hydroxide at 100°C and the influence of the concentration of the reagent and duration of the reaction was investigated. The degree of deacetylation (DD) of the chitosan was evaluated by FTIR and UV spectroscopy. From these results taken from the FTIR, UV spectroscopy and HPLC indicates several ideas and presence of the Chitin and Chitosan in the given feed of the shell powder of the Crab or Scylla serrata. From the FTIR it represents the presence of functional groups like Amide, Azide, C=O, C-H etc as the primary functional groups which are important in the presence of the primary product of Chitosan. From the UV spectroscopy it is also concluded that the functional groups having great peaks and it is also concluding the more percentage of presence of the amine in the product. All this analysis concludes that higher concentration has high quality.

Key words: Biomaterial, Chitin, Crab shells, and Deacetylation.

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DEPARTMENT OF CHEMICAL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT: Coagulation based chemical treatment of industrial and domestic effluents

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Abstract

Industrial effluent treatment and disposal is a major problems in industries such as tannery and textile. The effluents coming from these industries are generally consists of high dissolved solids, COD (Chemical Oxygen Demand) and BOD (Biological Oxygen Demand) content. Therefore it has a great impact on environment upon disposal. The present experimental studies are done by single stage process of settling and ozone. Aluminium Sulfate (alum) is the coagulant used for the treatment due to its performance, cost effectiveness and availability. Coagulant treated effluents are then disinfected by ozonation process to kill the pathogens and microorganisms. Results concluded that the effluents after treatment can be reused.

Keywords: COD, BOD, Ozonation, Alum.

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DEPARTMENT OF CHEMICAL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT: Bioethanol production from coconut husk fiber using fermentation method

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ABSTRACT

Coconut palm (cocos nucifera) is an important commercial crop in many tropical countries. But its industry generates large amounts of residue one way to reduce. This problem is to use this residue, coconut husk to produce bio ethanol. However coconut fiber contents lignin that will in habit conversion process of glucose to ethanol. In this research, pre-treatment steps aim is to release and breakdown lignin in coconut fiber. Pre-treatment was conducted by using alkaline method with 5% potassium hydroxide solution. Hydrolysis method was used to produce glucose by using sulfuric acid solution with various concentration (4% and 5%) while in fermentation process used Baker's yeast with various times (1, 3, 5, 7 and 9 days) and distillation used to get pure product of bio ethanol. The result showed that higher h2so4 concentration using on hydrolysis process made more glucose converted to bioethanol. FTIR analysis is used to identified the presence of bioethanol through analytical method. The properties of bioethanol also identified and mentioned in this research. The highest bioethanol content produced was 5.72% from sample of 5% H_2SO_4 in 7 days of fermentation and 5.34% from sample of 4% h2so4 in 7 days of fermentation.

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RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT: Adsorption of chromium from tannery waste water using bioadsorbent as vetivera zizonoides

PRINCIPAL INVIGILATOR: Mr.P.N.Gururaj

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ABSTRACT

Leather which use of putrescible animal raw hide and skin to convert into non-putrescible material. It contains large amount of chromium and many heavy metals. This study was carried out to evaluate the environmental application for the removal of hexavalent chromium Cr(VI) .The aim was to find the optimal conditions of hexavalent chromium which is removed from tannery effluent under different treatment conditions of PH, adsorbent dosage, contact time. The modified herb usually named as Vetiver zizanoides which is mainly attributed for the chromium removal to the various physical and chemical properties in it. Vetiver zizanoides have been carried by using analytical method of SEM(Scanning Electron Microscopy)and FTIR(Fourier Transform Infrared Spectroscopy) and .The result showed that 20% of chromium removal achieved by using Vetiver zizanoides at pH 4.5 at 10RPM and 2 hours for dosage of 7g of Vetiver zizanoides. The adsorption isotherm plots were well fitted with experimental data.

KEYWORDS:

- Leather
- Chromium (Cr)
- Vetiveria Zinanoides
- Adsorption

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DEPARTMENT OF CHEMICAL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT: Automated adsorption of chemical spill (Phenol) using activated carbon by fabrication of chembot

PRINCIPAL INVIGILATOR: Mr.P.N.Gururaj

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Abstract

A chemical spill is a situation in which a chemical is accidentally released. However, spills of toxic chemicals represent a more serious problem. The main objective is to design the Chembot for the removal of chemical spill to ensure the safety of the environment and to check how it works by comparing its absorption capacity with the existing absorption methods for removing the chemical spill. The simulation of the robot will be presented through robot simulation software, where the tracking is done through embedded programming, so as to configure its movement and requirements through every cycle of change of state. A prototype of the Chembot is constructed through hardware with the help of robot-specific apparatus and with the same norms of a line follower robot. In summary Chembot would be useful technology used for removal of oil spill.

Keywords: Chemical spill removal, Advanced robotic System, Robotic simulation software, Adsorption method, Ensure safety environment.

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DEPARTMENT OF CHEMICAL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT: High transparent keratin-based bioelastic with anti-bacterial activity from waste hair

PRINCIPAL INVIGILATOR: Ms.J.S.Ruthra priya

CO-PRINCIPAL INVIGILATOR: Ms.J.S.Ruthra priya

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ABSTRACT

Plastics have been one of the highly valued materials and it plays it plays a significant role in day to day activities such as food packaging and biomedical applications. Bioplastic materials can gradually work as a substitute for various materials based on fossil oil. The issue like sustainability and environmental challenges which occur due to manufacturing and disposal of synthetic plastics can be conquering by bio-based plastics. Main objective of this research is to synthesis bioplastic using keratin from waste Human hair. Keratin has been attracting interest due to its stability against enzymatic degradation, thereby allowing more predictable degradation profile for tissue regeneration. Human hair are among the most inexpensive abundant and renewable protein sources. Initially human hair was washed, delipidized and dissolved in sodium sulfide. Extracted keratin solution mixed with PVA and glycerol and stirred under constant magnetic stirring at 60 °C for 1-2 h. Finally, antibacterial agent like benzoic acid were added. The mixture was poured to on Petri plate having 10cm of diameter greased with greasing agent and dried in oven at 60^{o}C for 24 h. The mechanical properties of the samples were tested and the physio-chemical properties of the bioplastic were studied. According to the results, Scanning Electron Microscopy(SEM) test shows good compatible morphologies without holes, cavity and edge. The difference in chemical composition and presence of functional groups were analyzed using Fourier transform infrared spectroscopy (FTIR). The samples were also characterized by X-Ray diffraction (XRD) to check the crystallinity properties. According to biodegradability test, all bioplastic produced are proven biodegradable. These results provide new insight into the extraction of keratin from human hair with implications for its use as a biomaterial.

Keywords: Human hair, protein structure, keratin extraction, bioplastics

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DEPARTMENT OF CHEMICAL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT: Development of cactus mucilage (Opuntia Ficus Indica) edible coating to extend the shelf life of Daucus carota

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ABSTRACT

Different coatings were developed from the mucilage of cactus. The effects were investigated on the quality and storability of carrot. Pure mucilage extract, mucilage extract with 5 ml edible glycerol, soy oil, olive oil were served as plasticizer. The parameters were measured: weight loss, ascorbic acid, and firmness. The carrots were cut into pieces and treated with the prepared solution and they are dried under Evaporative coolant system. Results showed that the cactus mucilage was effective in extending the shelf-life of carrot when compared to untreated carrots. It also revealed that coatings hindered the growth of micro-organisms significantly.

Keywords: Carrot, Edible film, Cactus mucilage

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DEPARTMENT OF CHEMICAL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT: Insilico and GGMS analysis of cymbopogon flexuosus in anti-inflammatory activity

PRINCIPAL INVIGILATOR: Mr.T.Senthil Kumar

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ABSTRACT

The aim of this study is to investigate the anti-inflamatory activity of methanol leaf extract obtained from *Cymbopogon Flexuosus* using GC-MS analysis and Molecular Docking studies. Methanol leaf extract of *Cymbopogon Flexuosus* was obtained using reflux extraction method. GC-MS analysis of the leaf extract revealed presence of nine phytocompounds. Among those phytocompounds Bornyl acetate and Phytol were identified to possess anti-inflamatory activity. When these phytocompounds were subjected to molecular docking against inflammatory receptor target Cyclo-oxygenase (COX-2), phytol showed high binding energy with lower docking score as well as bornyl acetate shows low binding energy with higher docking score. The study substantially proved that Bornyl Acetate has anti-inflamatory potential of phytocompounds from *C.Flexuosus* leaf extracts can be exploited for commercial designing of novel anti-inflammatory drug to treat various inflammatory disorders.

Key Words: GC-MS, Molecular Docking, Anti-inflammatory, *Cymbopogon Flexuosus*

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DEPARTMENT OF CHEMICAL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT: Recycling of sewage water of Paavai institution for gardening and agriculture

PRINCIPAL INVIGILATOR: Dr.K.Gopi

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ABSTRACT

The waste water generated from the house hold activities contributes to the major part of the sewage. The domestic waste water is the main source of water pollution in India, especially in and around urban areas. The discharged water is in general either in black or grey colour. Generally domestic sewage does not contain any inorganic matter or organic compounds in highly toxic concentration. Grey water collected from PAAVAI treatment plant is designed to recycle and to use resulting water for agriculture. Primary treatment consist of screens (for removal of floating matter), grid chamber (for removal of inorganic suspended solids) and primary sedimentation tank (for removal residual settleable solids which are mostly organic) alone by the principle of simple gravity settling. However, presence of certain compounds such as metal stearate, oleate, and sulphates in higher concentration disturb the secondary treatments (aeration, ozonation and UV) of sewage. In biological treatment system (BOD), the organic material is metabolized by bacteria. Depending on the mode of disposal, the tertiary treatment is planned for killing pathogens and microorganisms. Generally secondary treatment followed by disinfection will meet the effluent standards for disposal into water bodies. When the treated sewage water is utilized for irrigation, the level of disinfection needs depend on the type of secondary treatment and type of crops with restricted or unrestricted public access.

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DEPARTMENT OF CHEMICAL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT: Removal of heavy metals from tannery effluent using Acacia Nilotica and Solanum Surattense leaves

PRINCIPAL INVIGILATOR: Mrs.P.Bharani

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ABSTRACT

Tannery industries are one of the most polluting industries. The major aim of the leather industry is to convert putrscible animal hide or skin to leather approximately about 30-36m^3 waste water is discharged to the environment during processing of every one ton of leather. Raw tannery effluent cause's serious damage to the environmental because it contains many organic matters dissolved suspended solids and heavy metals. Tannery waste water are highly complex and are characterized by high content of solids and heavy metals (Cr, Cd, Pb, Ni, Co, Mn). The major treatment methods for removing the contaminants from waste water are chemical precipitation, solvent extraction, ion exchange, electrolytic reduction etc... These methods are non-economical and having many disadvantages such as incomplete metal removing, high reagent and also generation of high toxic sludge. Heavy metals like Cr(VI), Cd(II) and Ni(II) are the most polluting metals. So removal of these ions from disposed waste is essential. In this study we are using adsorption method to reduce the heavy metal ions from the tannery effluent using natural adsorbents such as *Acacia nilotica* and *Solanum surattense.* Hence adsorption method is the best way to remove the heavy metal ions from waste water.

Keywords: Tannery effluent*, A.nilotica* , *S.surattense,* adsorption

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DEPARTMENT OF CHEMICAL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT: Synthesis and characterization of Mesoporous silica from palm kernel ash and used it for effective drug delivery

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CO-PRINCIPAL INVIGILATOR: Dr. K. Muthamizhi

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ABSTRACT

Commonly mesoporous silica (MCM-41) can extract from the coconut shell and rice husk. But we are trying to extract mesoporous silica (MCM-41) from the palm shell kernel ash. The Reason behind choosing the palm shell as a source is due to its abundant silica availability. Mesoporous Silica (MCM-41) characteristics of large specific area, large pore volume, high drug loading capability, high targeting ability, chemical and thermal stability. This mesoporous silica (MCM-41) has the pore size of 2-50 nm.The MCM-41 is one of the granular, vitreous, porous and valuable inorganic multipurpose chemical compounds. MCM-41 is used in the drug delivery in the effective manner compared to others. Because, it has the require pore volume for incorporating with the drug into its pores. Silica nano particles have numerous applications including drug delivery, lightweight aggregates, and energy storage. It has been manufactured from different agricultural bio resources with limited research on palm kernel shell ash (PKSA). This study produced silica nano particles from palm kernel shell ash. Modified sol–gel extraction technique was used to produce the silica nano particles from PKSA. The extracted silica nano particles were characterized using, scanning electron microscope (SEM), Fourier transform infrared (FT-IR) techniques. The micro structural analysis reveals that the unit size of the extracted silica nano particles is between 50–98nm, with a very high specific surface area (438m2 g−1). FT-IR analysis shows the existence of silanol and siloxane groups. This success means, decrease in environmental contamination caused by indiscriminate disposal of palm kernel shell (PKS) and silica nano particles for advanced material applications. The efficiency of drug delivery is determined by using dissolution test followed by UV spectrometry.

Keywords: Mesoporous silica,MCM-41,Palm shell,Drug delivery.

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DEPARTMENT OF CHEMICAL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT: Analysis of custard apple seed as a potential coagulant for wastewater treatment

PRINCIPAL INVIGILATOR: Ms.S.Nivedha

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ABSTRACT

From this report the potential of custard apple seed as a natural coagulant for water treatment. It was aimed at identifying custard apple seed as a possible replacement for alum and other synthetic polyelectrolytes in treating water. Laboratory scale studies using jar test experiments were performed on medium turbid water to determine the effect of dosage, pH and stirring time. Results obtained showed that at dosage of 0.5g/ml, pH of 7.0 and stirring time of 8 minutes optimal removal was obtained. The removal of turbidity, BOD, COD, TDS, TSS, TS, Alkalinity and Chloride are 24.5NTU, 347.2mg/l, 408.4mg/l, 3334mg/l, 6433mg/l, 9767mg/l, 948.7ppm, 3432ppm. When used in combination with alum (20%), it caused unfavourable changes in the pH and optimal removal was obtain. The removal of turbidity - 0.89 NTU, Colour-95%, pH-6.50,BOD-343.4mg/l, COD-405.31mg/l, TDS-3336mg/l, TSS-6423mg/l, TS-9759mg/l, Alkalinity-948.45ppm, Chloride-3439.19ppm. The results showed that Custard apple seed can be used as a natural coagulant for water treatment.

Key words; Coagulant, BOD, COD, TDS, TSS, TS, Turbidity

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DEPARTMENT OF INFORMATION TECHNOLOGY

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT

BLOOD GROUP DETECTION USING IMAGE PROCESSING WITH MATLAB

PRINCIPAL INVIGILATOR: DR.P.MUTHUSAMY

CO-PRINCIPAL INVIGILATOR: MR.B.VENKATESAN

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ABSTRACT

It is very crucial to determine human blood groups in any emergency situation.Bloodtypingissystemwhichbasicallyusedtodetectspecificblood groupofhuman.Itismandatorythateveryoneshouldknowtheirbloodgroup. Investigation of appropriate blood type within the short interval of timeplays vital role in blood transfusion, donation, accident and other emergency situations.Currently,thesetestsareperformedmanuallybytechniciansinthe laboratory, when the test is handled with larger number of samples, it is monotonous to do and it may lead to human errors. The aim of this system is to provide a result within the shortest possible time with precision and accuracy along with storage of result for further use. The system uses image processing algorithm to performed blood test based on ABO and RH blood typing system. Thus, this system is helpful in an emergency situation to determine blood group without humanerror.

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DEPARTMENT OF INFORMATION TECHNOLOGY

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT

SOIL TESTING USING ARUDINO

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CO-PRINCIPAL INVIGILATOR: MR.R.DEENADHAYALAN

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Soil testing

ABSTRACT

In agriculture to grow healthier yield nutrients existing in the soil should be managed properly. Continuous growing of plants affects the soil fertility and its fertility level goes down. Farmers should go to laboratory for testing the fertility of the soil and it's time consuming. An optical transducer is developed to measure and to detect the presence of Nitrogen (N), Phosphorus (P) and Potassium (K) of soil. Such transducer is needed to decide how much extra contents of these nutrients are to be added to the soil to increase soil fertility. This can improve the quality of soil and reduces the undesired use of fertilizers to be added to the soil. The N, P, and K value of the sample are determined by absorption light of each nutrient. The advance in the technology helps to progress even in the field of agriculture. In proposed framework, soil nutrients can be identified using IOT. PH, temperature and moisture, NPK is found using sensors. By this measure of fertilizers required for the field will be known. This helps farmers to examine soil and know its fertility level before sowing. By this large amount of yield can be gained. then this system also suggest to farmers for which type of crops are suitable in that soil. IOT-Internet of Things is the large domain which deals with collecting information through internet at any time, at anywhere. Which helps in monitoring system in the absence of human intervention? Which are observed by sensors, used even in farming to experiment soil, by which the fertility of soil is maintained

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RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT

SOIL TESTING USING ARUDINO

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DEPARTMENT OF INFORMATION TECHNOLOGY

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT

BLOOD GROUP DETECTION USING IMAGE PROCESSING WITH MATLAB

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CO-PRINCIPAL INVIGILATOR: DR.P.MUTHUSAMY

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Blood Group

ABSTRACT

It is very crucial to determine human blood groups in any emergency situation.Bloodtypingissystemwhichbasicallyusedtodetectspecificblood groupofhuman.Itismandatorythateveryoneshouldknowtheirbloodgroup. Investigation of appropriate blood type within the short interval of timeplays vital role in blood transfusion, donation, accident and other emergency situations.Currently,thesetestsareperformedmanuallybytechniciansinthe laboratory, when the test is handled with larger number of samples, it is monotonous to do and it may lead to human errors. The aim of this system is to provide a result within the shortest possible time with precision and accuracy along with storage of result for further use. The system uses image processing algorithm to performed blood test based on ABO and RH blood typing system. Thus, this system is helpful in an emergency situation to determine blood group without humanerror.

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DEPARTMENT OF INFORMATION TECHNOLOGY

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT

HEALTHCARE OBSERVER WITH MEDICINE INTIMATOR APPLYING IOT

PRINCIPAL INVIGILATOR: DR.G.MADASAMYRAJA

CO-PRINCIPAL INVIGILATOR: MR.B.VENKATESAN

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ABSTRACT

Healthcare observer with Medicine intimator is an Iot based project.This project is developed as a Device which is used to maintain the Health Condition of a person.This Device is helpful to the persons who are taking medicines and tabulates regularly,especially to the aged persons and unknowledgeable persons whom were in difficulty to identify tabulates and for the people whom were forgetting to take tabulates at the correct time.This Device is also helpful to intimate the Relatives or Saved contacts when the Tabulate in the Device got emptied. Finally, this Device is acts as an Health monitoring system based on the different sensor modules used in it. With the help of this Device ,it is possible to maintain the health condition of a person by regular health monitoring and taking tabulates at the appropriate time.

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DEPARTMENT OF INFORMATION TECHNOLOGY

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT

E-COMMERCE APPLICATION BASED ON LORAWAN

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ABSTRACT

E-commerce application based on LoRaWAN works without using the internet connection. The connectivity between product store and consumer are established with the help of LoRaWAN (Long Range Wide Area Network) technology. It is one of the IoT (Internet of Things) enabling technology and it was based on spread spectrum modulation techniques derived from chirp spread spectrum (CSS) technology. LoRa uses license-free sub-gigahertz radio frequency bands like 433 MHz for long range communication. Two types of LoRa based IoT devices will be developed. One for user which can be connected to the smart phones via Wi-Fi and another device for the business administrator which will be connected to the admin computer. While the user placing any order or booking tickets using our device, he/she does not need an internet connection. All the communication process will be done by our LoRaWAN device.

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RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT

E-COMMERCE APPLICATION BASED ON LORAWAN

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E-Commerce

ABSTRACT

E-commerce application based on LoRaWAN works without using the internet connection. The connectivity between product store and consumer are established with the help of LoRaWAN (Long Range Wide Area Network) technology. It is one of the IoT (Internet of Things) enabling technology and it was based on spread spectrum modulation techniques derived from chirp spread spectrum (CSS) technology. LoRa uses license-free sub-gigahertz radio frequency bands like 433 MHz for long range communication. Two types of LoRa based IoT devices will be developed. One for user which can be connected to the smart phones via Wi-Fi and another device for the business administrator which will be connected to the admin computer. While the user placing any order or booking tickets using our device, he/she does not need an internet connection. All the communication process will be done by our LoRaWAN device.

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DEPARTMENT OF INFORMATION TECHNOLOGY

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT

HEALTHCARE OBSERVER WITH MEDICINE INTIMATOR APPLYING IOT

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Healthcare

ABSTRACT

Healthcare observer with Medicine intimator is an Iot based project.This project is developed as a Device which is used to maintain the Health Condition of a person.This Device is helpful to the persons who are taking medicines and tabulates regularly,especially to the aged persons and unknowledgeable persons whom were in difficulty to identify tabulates and for the people whom were forgetting to take tabulates at the correct time.This Device is also helpful to intimate the Relatives or Saved contacts when the Tabulate in the Device got emptied. Finally, this Device is acts as an Health monitoring system based on the different sensor modules used in it. With the help of this Device ,it is possible to maintain the health condition of a person by regular health monitoring and taking tabulates at the appropriate time.

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DEPARTMENT OF INFORMATION TECHNOLOGY

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT

A SECURE ACCESS AND SHARING OF DATA IN CLOUD WITH TIME LIMITS

PRINCIPAL INVIGILATOR: MRS.M.BABYLATHA

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ABSRTACT

Cloud computing is an emerging technology used to store and share huge volume of data. To ensure data security in cloud cryptographic techniques has been utilized however current encryption algorithms does not enforce privacy concerns over cipher text associated with multiple owners. The issues are co-owners of data do not know whether the data should be disseminated by the disseminator. In our proposed scheme we introduce a system which supports multi owner data sharing in cloud computing in secure manner. Here disseminator can share data to other users when the attributes satisfies the access policy of the encrypted data. To overcome privacy conflicts three policy aggregation strategies are considered such as full permit, owner priority and majority permit. In general, the authorized users can generate some search tokens and send them to the cloud for running the search operation. These search tokens can be used to extract all the ciphertexts which are produced at any time and contain the corresponding keyword. Since this may lead to some information leakage, it is more secure to propose a scheme in which the search tokens can only extract the ciphertexts generated in a specified time interval. To this end, in this paper, we introduce a cryptographic primitive called RC4 encryption and temporary keyword search which provide this property. The security analysis and experimental results show our scheme is practical and efficient for secure data sharing with multi-owner in cloud computing.

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RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT

MACHINE LEARNING DRIVER EXHAUSTION DETECTION BASED ON FACIAL NODAL POINTS

PRINCIPAL INVIGILATOR: MRS.M.BABYLATHA

CO-PRINCIPAL INVIGILATOR: MR.S.SARAVANAKUMAR

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ABSTRACT

Drowsiness and fatigue of automobile drivers reduce the drivers' abilities of vehicle control, natural reflex, recognition and perception. Such diminished vigilance level of drivers is observed at night driving or overdriving, causing accident and pose severe threat to mankind and society. Therefore it is very much necessary in this recent trend in automobile industry to incorporate driver assistance system that can detect drowsiness and fatigue of the drivers. This project presents a nonintrusive prototype computer vision system for monitoring a driver's vigilance in real time. Eye tracking is one of the key technologies for future driver assistance systems since human eyes contain much information about the driver's condition such as gaze, attention level, and fatigue level. One problem common too many eye tracking methods proposed so far is their sensitivity to lighting condition change. This tends to significantly limit their scope for automotive applications. Real-time detection and tracking of the eye is an active area of research in computer vision community. Localization and tracking of the eye can be useful in face alignment. This project describes real time eye detection and tracking method that works under variable and realistic lighting conditions. It is based on a hardware system for the real-time acquisition of a driver's images using camera and the software implementation for monitoring eye that can avoid the accidents. We can implement this project in real time using C#.NET as front end and SQL SERVER as back end.

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DEPARTMENT OF INFORMATION TECHNOLOGY

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT

MACHINE LEARNING DRIVER EXHAUSTION DETECTION BASED ON FACIAL NODAL POINTS

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machine learning

ABSTRACT

Drowsiness and fatigue of automobile drivers reduce the drivers' abilities of vehicle control, natural reflex, recognition and perception. Such diminished vigilance level of drivers is observed at night driving or overdriving, causing accident and pose severe threat to mankind and society. Therefore it is very much necessary in this recent trend in automobile industry to incorporate driver assistance system that can detect drowsiness and fatigue of the drivers. This project presents a nonintrusive prototype computer vision system for monitoring a driver's vigilance in real time. Eye tracking is one of the key technologies for future driver assistance systems since human eyes contain much information about the driver's condition such as gaze, attention level, and fatigue level. One problem common too many eye tracking methods proposed so far is their sensitivity to lighting condition change. This tends to significantly limit their scope for automotive applications. Real-time detection and tracking of the eye is an active area of research in computer vision community. Localization and tracking of the eye can be useful in face alignment. This project describes real time eye detection and tracking method that works under variable and realistic lighting conditions. It is based on a hardware system for the real-time acquisition of a driver's images using camera and the software implementation for monitoring eye that can avoid the accidents. We can implement this project in real time using C#.NET as front end and SQL SERVER as back end.

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DEPARTMENT OF INFORMATION TECHNOLOGY

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT

AUTONOMOUS QUADCOPTER FOR MONITOR SECURTIY

PRINCIPAL INVIGILATOR: MR.S.SARAVANAKUMAR

CO-PRINCIPAL INVIGILATOR: MR.R.DEENADHAYALAN

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Autonomous

ABSTRACT

The Autonomous solar Quad copter is targeted to mainly use for security purpose for detect the unwanted person or unwanted object at given location. This based quad copter is non-attackable, when the foe is trying to attack the quad copter it suddenly changes its position and move to another place. For detect the enemies, it could have Surface Acoustic Wave (SAW) sensor. For detect the attack and make prevention we use Photodiode or Photo electric sensor. It can be controlled by only one base station and one system. The Quad copter can be controlled for the distance of 2km and it can be fly at height of 10 meters-12 meters and run at the speed of 20km per hour. For detect the enemies high propeller powerful camera can be used. For excess power and to increase the flying time Solar panels can be used and it is a secondary power source.

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RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT

AUTONOMOUS QUADCOPTER FOR MONITOR SECURTIY

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ABSTRACT

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DEPARTMENT OF INFORMATION TECHNOLOGY

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT

PHONEY MAIL CREDENTIALS EXHAUSTING ML

PRINCIPAL INVIGILATOR: MR.R.DEENADHAYALAN

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Phishing mail

ABSTRACT

The spam mail is one of the most precarious problem. At present everyone face this difficult situation. In existing system is based on particular data's only, in case if a new mail arrives in mail it is challenging to categorize whether it is spam or ham. In proposed system, there is a usage of NLP concept and stop word representation to block the arrival of new spam mail. It uses maximum number of data's to identify the spam mail. A way of efficient classification has been done through SVM (Support Vector Machine) classifier which detects the words that are obtainable in new mail. The identified words are checked with stop words list in database in accurate way through the SVM classifier. The percentage level of words available in new mail is checked with database, if it is spam mail then it will be block otherwise it will be sent to the destination mail.

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DEPARTMENT OF INFORMATION TECHNOLOGY

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT

HEART DISEASE PREDICTION EFFIECIENCY WAY THROUGH MACHINE LEARNING METHOD

PRINCIPAL INVIGILATOR: MRS.M.PUSHPALATHA

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Heart disease

ABSTRACT

The Healthcare industry generally clinical diagnosis is done mostly by doctor's expertise and experience. Computer Aided Decision Support System plays a major role in medical field. Data mining techniques and machine learning algorithms play a very important role in this area. The researchers accelerating their research works to develop a software with the help machine learning algorithm which can help doctors to take decision regarding both prediction and diagnosing of heart disease. The main objective of this research paper is predicting the heart disease of a patient using machine learning algorithms. Initially the dataset is preprocessed and feature selection has been implemented for efficient data selection. Once data selection is done linear regression classifier is implemented to detect whether the particular patient is affected by heart disease or not in accurate way. In addition to this the parameters used for heart disease prediction is also analyzed to extract the information if any parameter has h igh value than threshold level will be notified. Therefore in our proposed system for the heart disease predicted persons a general suggestion will be generated based on their information. Hence our system predicts heart disease in accurate way and providing it to particular patient in efficient way.

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DEPARTMENT OF INFORMATION TECHNOLOGY

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT

SOIL SENSORS AS A SERVICE : LOW COST SOIL DIAGNOSTICS SYSTEM USING SENSORS

PRINCIPAL INVIGILATOR: MRS.M.PUSHPALATHA

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soil sensor

ABSTRACT

In agriculture to grow healthier yield nutrients existing in the soil should be managed properly. Continuous growing of plants affects the soil fertility and its fertility level goes down. Farmers should go to laboratory for testing the fertility of the soil and it's time consuming. An optical transducer is developed to measure and to detect the presence of Nitrogen (N), Phosphorus (P) and Potassium (K) of soil. Such transducer is needed to decide how much extra contents of these nutrients are to be added to the soil to increase soil fertility. This can improve the quality of soil and reduces the undesired use of fertilizers to be added to the soil. The N, P, and K value of the sample are determined by absorption light of each nutrient. The advance in the technology helps to progress even in the field of agriculture. In proposed framework, soil nutrients can be identified using IOT. PH, temperature and moisture, NPK is found using sensors. By this measure of fertilizers required for the field will be known. This helps farmers to examine soil and know its fertility level before sowing. By this large amount of yield can be gained. Then this system also suggest to farmers for which type of crops are suitable in that soil. IOT-Internet of Things is the large domain which deals with collecting information through internet at any time, at anywhere. Which helps in monitoring system in the absence of human intervention? Which are observed by sensors, used even in farming to experiment soil, by which the fertility of soil is maintained

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DEPARTMENT OF INFORMATION TECHNOLOGY

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT

ENTERPRISE DATA PROTECTION SYSTEM USING GEO-FENCE TECHNOLOGY

PRINCIPAL INVIGILATOR: MR.V.SARAVANABHAVAN

CO-PRINCIPAL INVIGILATOR: MR.S.SAKTHIVEL

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ABSTRACT

A geo-fence is a virtual border for a true geographic zone. A geo-fence could be powerfully created as in a range around a point area, or a geofence can be a predefined defined of limits, and it includes an area mindful gadget of an area-based administration (LBS) client entering or leaving a geofence. A system can be implemented for Enterprises against unauthorized access on secret files. It provides an authentication based on three types, such as Media Access Control (MAC), Internet Protocol (IP) and Geo-Fence Area or boundaries. A Malicious user are copy the secret files around the system within the geo-fence boundary, At the same time our system is automatically trigger and it generate the harmful virus for scrap the copied file. The users are insert the secondary device (Pen drive) into the outside of the geo-fence area, the virus file first check the GPS location , MAC Address and IP address of the current system, if it is mismatch the virus file wipe out the secret files and it also wipe out the whole system of malicious user's. our system is also blocking the mail preview of the secret files.

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DEPARTMENT OF INFORMATION TECHNOLOGY

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT

ENTERPRISE DATA PROTECTION SYSTEM USING GEO-FENCE TECHNOLOGY

PRINCIPAL INVIGILATOR: MR.S.SAKTHIVEL

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ABSTRACT

A geo-fence is a virtual border for a true geographic zone. A geo-fence could be powerfully created as in a range around a point area, or a geofence can be a predefined defined of limits, and it includes an area mindful gadget of an area-based administration (LBS) client entering or leaving a geofence. A system can be implemented for Enterprises against unauthorized access on secret files. It provides an authentication based on three types, such as Media Access Control (MAC), Internet Protocol (IP) and Geo-Fence Area or boundaries. A Malicious user are copy the secret files around the system within the geo-fence boundary, At the same time our system is automatically trigger and it generate the harmful virus for scrap the copied file. The users are insert the secondary device (Pen drive) into the outside of the geo-fence area, the virus file first check the GPS location , MAC Address and IP address of the current system, if it is mismatch the virus file wipe out the secret files and it also wipe out the whole system of malicious user's. our system is also blocking the mail preview of the secret files.

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DEPARTMENT OF INFORMATION TECHNOLOGY

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT

INTELLIGENT E-CARD ONLINE BILLING SYSTEM

PRINCIPAL INVIGILATOR: MR.S.SAKTHIVEL

CO-PRINCIPAL INVIGILATOR: MRS.N.HEMALATHA

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ABSTRACT

Radiofrequency Identification based trolley that communicates with the billing system that is the Mobile Application.The trolley will be connected with the mobile application through the Wifi Module (ESP 8266).using node MCU. Customer gets to see the items and the quantity of the items that have been purchased on the application.The application redirects to the payment page where the payment can be done by Card or Cash.The proposed system is easy to use, low-prized and efficient.

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RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT

INTELLIGENT E-CARD ONLINE BILLING SYSTEM

PRINCIPAL INVIGILATOR: MRS.N.HEMALATHA

CO-PRINCIPAL INVIGILATOR: MR.S.SAKTHIVEL

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ABSTRACT

Radiofrequency Identification based trolley that communicates with the billing system that is the Mobile Application.The trolley will be connected with the mobile application through the Wifi Module (ESP 8266) using node MCU. Customer gets to see the items and the quantity of the items that have been purchased on the application.The application redirects to the payment page where the payment can be done by Card or Cash.The proposed system is easy to use, low-prized and efficient.

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DEPARTMENT OF INFORMATION TECHNOLOGY

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT

USER DATA CONFIDENTALITY AND PRIVACY PRESERVATION IN CLOUD USING ARTIFICIAL INTELLIGENCE

PRINCIPAL INVIGILATOR: MRS.N.HEMALATHA

CO-PRINCIPAL INVIGILATOR: MRS.P.ANITHA

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ABSTRACT

The aim is to present the development of a realistic virtual model of human brain that is used to remember and deliver the secrets after death of human brain. After the death of the body, virtual brain website will act as the human's brain. This could reveal many enhancing aspects of the brain, such as the form of memories, memory capacity and how memories are lost. It shares how memories and data are stored and retrieved in the private cloud storage server. It reveals the aspects of the brain, such as, form of memories or data, capacity and how it is lost. In case of brain/human death the information can be passed to the concerned person those who were allotted by the user. The intimation has been passed in a period of time that has been specified by the user. The authorized person/guardian can access the data and information through the web server. To increase security issues from intruders to propose Encrypting File Sharing and Synchronizing Using Efficient intruder tracing and Revocation. It implements the revocation algorithms to block the intruders and generates a intruder tracing technique to trace the presence of the intruders. In case of any abnormal activity the proposed methodology revocates the specific user using IP address and provides the longitude and latitude information to the data owner. In addition pattern matching, SQL injection and anomaly detection are proposed to maintain the privacy andsecurity.

KEY WORDS:

PHP, Virtual Box, Python, Cloud Computing, Data Protection, MYSQL, MongoDB, WAMP

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DEPARTMENT OF INFORMATION TECHNOLOGY

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT

DEVELOPMENT OF INFANT INCUBATOR FOR CLINIC IN RURAL AREA

PRINCIPAL INVIGILATOR: MRS.P.ANITHA

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Development of Infant

ABSTRACT

Themainobjectiveistodesignacompacthealthcaredetectingmoduleforhighpre maturebirthbaby.Thestructuraldesignofmoduleisfocusedonportabilityanddurability. Thetentlikecoverhelpstoaccuratecalculationofvitalsigns,whicharetemperature,press ure,oxygenlevel.Thevitalsignsgetsupdatedcontinuouslyincloudthrough Wi-Fi.Thehealthconditioncanbeviewedbybothdoctorsandparentsandalsotheantitheftalar misincludedinthemodule.

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DEPARTMENT OF INFORMATION TECHNOLOGY

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT

USER DATA CONFIDENTALITY AND PRIVACY PRESERVATION IN CLOUD USING ARTIFICIAL INTELLIGENCE

PRINCIPAL INVIGILATOR: MRS.P.ANITHA

CO-PRINCIPAL INVIGILATOR: N.HEMALATHA

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ABSTRACT

The aim is to present the development of a realistic virtual model of human brain that is used to remember and deliver the secrets after death of human brain. After the death of the body, virtual brain website will act as the human's brain. This could reveal many enhancing aspects of the brain, such as the form of memories, memory capacity and how memories are lost. It shares how memories and data are stored and retrieved in the private cloud storage server. It reveals the aspects of the brain, such as, form of memories or data, capacity and how it is lost. In case of brain/human death the information can be passed to the concerned person those who were allotted by the user. The intimation has been passed in a period of time that has been specified by the user. The authorized person/guardian can access the data and information through the web server. To increase security issues from intruders to propose Encrypting File Sharing and Synchronizing Using Efficient intruder tracing and Revocation. It implements the revocation algorithms to block the intruders and generates a intruder tracing technique to trace the presence of the intruders. In case of any abnormal activity the proposed methodology revocates the specific user using IP address and provides the longitude and latitude information to the data owner. In addition pattern matching, SQL injection and anomaly detection are proposed to maintain the privacy andsecurity.

KEY WORDS:

PHP, Virtual Box, Python, Cloud Computing, Data Protection, MYSQL, MongoDB, WAMP

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DEPARTMENT OF INFORMATION TECHNOLOGY

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT

STOCK VALUE PREDICTION USING MACHINE LEARNING

PRINCIPAL INVIGILATOR: MRS.B.DEEPA

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Static value

ABSTRACT

Inthelastfewyears,machinelearninghasbecomeaverypopulartool foranalysingfinancialtextdata,withmanypromisingresultsinstockpricef romfinancialnews,andapastvalues.Inthiswork,weexploretheRegressio ntechniques,KNNtechniquesandoneofthedeeplearningmethodslikeRe currentNeuralNetworks.Fromallthesethreetechniques,wehaveaconclu sionofRNNtechniqueshelpsmoretoanalysingthestockpriceeasilyandov ercomewithissuesassociatedwiththeaccuracyoftheoverallvaluesgiven. ThispaperalsopresentsaWebAPIcreationthatbuildusingDjangoFrame work.Itautomaticallyupdatesthecurrentvalueofthestockprices.Thesucc essfulpredictionofStockwillbeabiglegacyforthestockinvestinginstituti ons.

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DEPARTMENT OF INFORMATION TECHNOLOGY

RESEARCH PROJECT

ACADEMIC YEAR: 2019-2020

TITLE OF THE PROJECT

MAKEOVER FEATURE BASE HUMAN IDENTIFICATION WITH DEEP LEARNING IN ACTUAL PERIOD GUSING ATMOSPHERE

PRINCIPAL INVIGILATOR: MRS.B.DEEPA

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ABSTRACT

For face recognition in surveillance scenarios, identifying a person captured on image or video is one of the key tasks. This implies matching faces on both still images and video sequences. Automatic face recognition for still images with high quality can achieve satisfactory performance, but for video-based face recognition it is hard to attain similar levels of performance. Compared to still images face recognition, there are several disadvantages of video sequences. First, images captured by CCTV cameras are generally of poor quality. The noise level is higher, and images may be blurred due to movement or the subject being out of focus. Second, image resolution is normally lower for video sequences. If the subject is very far from the camera, the actual face image resolution can be as low as 64 by 64 pixels. Last, face image variations, such as illumination, expression, pose, occlusion, and motion, are more serious in video sequences. The approach can address the unbalanced distributions between still images and videos in a robust way by generating multiple "bridges" to connect the still images and video frames. So in this project, we can implement still to video matching approach to match the images with videos using Grassmann manifold learning approach and Convolutional Neural network algorithm to know unknown matches. Using Grassmann learning algorithm to read the features vectors and matching feature vectors based on deep learning approaches. Finally provide voice alert at the time unknown matching in real time environments. And also provide SMS alert and Email alert at the time of unknown face detection.

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Academic Year 2018-2019

PAAVAI ENGINEERING COLLEGE,

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DEPARTMENT OF AERONAUTICAL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT: BRACKET FABRICATION AND ANALYSIS USING COMPOSITE AND ADDITIVE MANUFACTURING METHOD

PRINCIPAL INVIGILATOR: P.PRASANNA

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ABSTRACT

In Aerospace industries, while designing the components the most critical aspect that is to be considered is the compactness and the weight of the components. According to the Newton's second law, the energy required for the vehicle depends on the mass of flight. Since it is very much needed to reduce the weight and therefore it is designed and optimized for minimum weight without sacrificing the function. The most common material is Aluminum alloy- 6061 as it has high strength to weight ratio. Aluminum alloy- 6061 has high strength and light compared to Graphite Epoxy Composite. The most important factors that are concentrated are stress distribution and deflections. In this paper we described how to design and analyze the brackets at loading conditions acting at Centre of Gravity point. Material used for bracket is ABS (Acrylonitrile butadiene styrene) and Composite material (Carbon Fiber) respectively. The Maximum yield strength of ABS Plastic is 48 MPA at a load of 14N, same load will be applied and strength values are analyzed. Strength values to be compared and reserve factor values are calculated from given loading conditions.

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DEPARTMENT OF AERONAUTICAL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT: DESIGN AND FABRICATION OF QUADCOPTER WITH AURDINO UNO FOR TEMPERATURE AND HUMDITY DETECTION

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ABSTARCT

The project goal was to design a semi-autonomous Quadcopter capable of self-sustained flight via wireless communications while utilizing a microcontroller. The Quadcopter was designed to be small enough so that costs would be minimized, as shown which is why small motors and propellers are being used. While a PID microcontroller, accelerometer, and gyroscope are communicating between each other to maintain control. Humidity and temperature are common parameters to measure environmental conditions. In this Arduino based project we are going to measure ambient temperature and humidity and display it on a IOT platform website. A combined temperature and humidity sensor DHT11 is used with Arduino UNO to develop this Celsius scale thermometer and percentage scale humidity measurement project.

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RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT: DESIGN AND FLOW ANALYSIS OF MODIFICATION IN CLAMSHELL THRUST REVERSER

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ABSTRACT

A performance study on clamshell door type thrust reverser with different deployment angle of changing and a sliding door type thrust reverser was done and the results were compared.CFM56-5B engine was chosen as the base model for this study and the modeling of the engine was carried out using CATIAV5.The CATIA model was then imported into ICEM CFD for meshing and final design analysis for ANSYS CFX was done. In this study clamshell door type thrust reverser with different door deployment angle (35^0,45^0,60^0) and sliding door type were designed and analyses results should be compared. Finally from this study we concluded the thrust reverser with 45^0 door deployment angle is most suitable for better engine performance.

KEYWORDS :- Thrust Reverser, Clamshell Door Type, Sliding Door Type.

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RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT: DESIGN AND STRUCTURAL ANALYSIS OF SWEPT BACK WING FOR COMMERCIAL AIRCRAFT

PRINCIPAL INVIGILATOR: D.RAJKUMAR

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ABSTRACT

A wing is a type of fin that produces lift, while moving through air or some other fluid. As such, wings have streamlined cross-sections that are subject to aerodynamic forces and act as an airfoils. A wing's aerodynamic efficiency is expressed as its lift-to-drag ratio. The lift a wing generates at a given speed and angle of attack can be one to two orders of magnitude greater than the total drag on the wing. A high lift-to-drag ratio requires a significantly smaller thrust to propel the wings through the air at sufficient lift.

In this project we attempt to bring out the challenges associated with the design of a Swept Back Wing for aircraft. A swept wing is a wing that angles either backward or, occasionally, forward, from its root rather than in a straight sideways direction. Wing sweep has the effect of delaying the shock waves and accompanying aerodynamic drag rise caused by fluid compressibility near the speed of sound, improving performance. The main aim is to design and perform structural analysis of Swept Back Wing for aircraft with different load conditions and load factors. The Swept Back Wing will be designed by using CAD software and linear static structural analysis will be perform through CAE software with satisfactory factor of safety.

Key Words-Swept Wing, CAD, CAE, FE Modelling.

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DEPARTMENT OF AERONAUTICAL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT: DESIGN AND FABRICATION OF QUADCOPTER WITH HUMAN DETECTOR

PRINCIPAL INVIGILATOR: V.LAKSHMIPRIYA

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ABSTRACT

Many areas of the world get affected by natural calamity. Disasters are unstoppable and leave behind a great loss of life. Disasters like earthquake, floods, etc. cause mass destruction and often lives get buried or trapped in debris. In such situations detection by rescue workers becomes time consuming and due to the vast area that gets affected it becomes more difficult. In this system, we are proposing a human detection quad-copter which can detect alive humans in debris so that timely help can be made available to the victims. The proposed alive human being detection system contains Passive Infrared sensor (PIR) which gives the information about the presence of alive human body. Radio Frequency Technology is used to control the quad-copter. In disaster sites, it will be a great help to rescuers in detection of more alive human beings at the proper time. This system is also user friendly, economical, semi-autonomous and efficient for detection.

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DEPARTMENT OF AERONAUTICAL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT: DESIGN AND CFD ANALYSIS OF HEXACOPTER AND PROTOTYPE

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ABSTRACT

UAV (Unmanned Aerial Vehicle) is a flying robot capable of flying without on board pilot. It is controlled either manually or autonomously. It is an emerging new technology for developing countries like Nepal and could be applied for environmental research applications like aerial surveillance, photogrammetry, delivery of medicine, conservation surveillance and many more. Use of big manned helicopters and other aerial vehicles could be replaced for some applications by UAV's making those applications really cheap and accessible. This would definitely be advantageous when being concerned about economy and risk of operation of the aerial vehicles. For the purposes like disaster scouting, supplying medical aids and extreme rescue operations, UAVs could prove themselves far worthy and economical than its counterpart. There are many different types and designs (Multirotors and fixed wings) of UAVs available in the global market but not easily available in the context of Nepal. The UAV designed and developed at Kathmandu University is called as KU-COPTER, which is a multirotor with six propellers (technically called as hexa-copter). It can vertically take-off and land with the purpose to take aerial surveillance and supply of medical aids. Since the scope of Unmanned Aerial Vehicle (UAV) is wide, so its development will pave a path for the university in exploring various applications in the context of developing countries like Nepal. Its indigenous design and development provide the basis for further modification and features addition according to the area of application.

Keywords: Unmanned Aerial Vehicle (UAV), emerging technology, surveillance, disaster management, photogrammetric applications.

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DEPARTMENT OF AERONAUTICAL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT: DESIGN AND STATIC ANALYSIS OF RECTANGULAR WING WITH COMPOSITE MATERIAL

PRINCIPAL INVIGILATOR: G.SASI

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ABSTRACT

Aircraft Wing is the complicated structure in aircraft because of its complicated behaviour towards different loads and manoeuvring. The main objective of the project is to design and simulate the rectangular wing made by project of CFRP (carbon fiber reinforcement polymer) and aluminium. This project is to investigate the principal stress and strain & shear stress and strain & von mises stress and behaviour of these materials under the applied parameters. This study is to reduce the weight of the wing also providing higher strength and higher structural force. This study shows the improved structure of wing, that includes the aspect ratio, factor of study and load factor by finite element method.

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RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT: DESIGN AND ANALYSIS OF MICRO GAS TURBINE COMBUSTION CHAMBER

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ABSTRACT

Micro gas turbines are small scale independent and reliable distributed generation systems that offer potential for saving energy and reducing carbon emissions which play a vital role in future energy supplies for remote locations with or without grid connections. In this project a design and development of a combustion chamber for micro gas turbine was performed by CATIA and computational fluid dynamics (CFD) ANSYS FLUENT simulation software. Micro gas turbines are designed with constant number of dilution holes and the flow in dilution holes are analyzed with the inlet fuel percentage of 40%, 50%, 60% and 70% for LPG, Diesel, Kerosene, Methane to obtain the maximum power output of 5KW. The results for the flame holder analysis are shown in contours by using CFD simulation.

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RESEARCH PROJECT

ACADEMIC YEAR; 2018-2019

TITLE OF THE PROJECT: MOTORIZED ARMTYPE PADDY TRANSPLANTER

PRINCIPAL INVIGILATOR: Dr. R. JAGANNATHAN

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ABSTRACT

Nowadays the agricultural field is going down due to the scarcity of human labours. If this project idea is implemented, the land owner itself can transplant their paddy seedlings in their land with shorter time instead of waiting for human labours. The huge amount of money should be invested for Paddy planting, by using this transplanter the labour cost can be reduced and farming area can be increased. Paddy transplanting machine is already available in the market which can be used by the large scale farmers, instead of that we designed the machine for small scale farmers. We also used motor to operate the transplanter instead of rotating handle. In this type of machine we have used two arms for transplanting the seedlings. Since this project is a real time application which tends to help the farmers and reduce their work to a certain level and soon it find its own importance in its field.

Key Words: *Motor, Paddy saplings, Transplanter.*

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RESEARCH PROJECT

ACADEMIC YEAR; 2018-2019

TITLE OF THE PROJECT: ELECTRONIC PEST REPELLENT

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ABSTRACT

The purpose of the project is to design an ultrasonic pest repellent. Such a device can be very useful to counter the various problems caused by ants, insects, pests, rodents, etc. The device is compact, cheap, and it does not cause any pollution unlike the other chemical repellents. We have used a microcontroller to generate sweep in sound frequencies, and an assembly consisting of audio power amplifier, speaker and LCD for this purpose. The technical details of this project follow later.

The circuit has been experimentally tested on ants, bugs, and small insects, and it has been successful in repelling them through the generation of ultrasonic frequency sound. It is possible that pests like insects, ants, rats, mice etc. are repelled by ultrasonic frequency in the range of 30 kHz to 50 kHz. Human beings can't hear these high-frequency sounds. Our product repels pests by emitting pulse ultrasonic waves. Using ultrasonic waves creates a noisy and hostile environment which repels pests, whilst remaining absolutely safe for humans and household animals. Unfortunately, all pests do not react at the same ultrasonic frequency. While some pests get repelled at 35 kHz, some others get repelled at 38 to 40 kHz or even higher frequencies. Thus to increase the effectiveness, frequency of ultrasonic oscillator has to be continuously varied between certain limits. Frequency of emission of ultrasonic sound is continuously varied by our product in different patterns to repel different insects.

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DEPARTMENT OF AGRICULTURE ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR; 2018-2019

TITLE OF THE PROJECT: DEVELOPMENT OF BRIQUIITING MACHINE FOR RURAL PURPOSE

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ABSTRACT

Biomass is an important source of energy accounting for about one third of the total fuel used in India. The current availability of biomass in India is about 1,249 million tons. Many of the developing countries produce huge quantities of agro residues but these are not used efficiently causing extensive pollution to the environment. Apart from problems of transportation, storage and handling, the direct burning of loose biomass in conventional grates gives very low thermal efficiency. To overcome the problem of biomass utilization briquetting is the convenient technique.

The research work was carried out during 2019 at Paavai engineering college ,to study the development of briquetting machine for small scale purpose during these study various biomass samples such as rice husk, rice husk + paper, woodchips + paper, Paper were selected on the basis of availability.

The result showed that moisture content of rice husk 64.70 per cent, rice husk + paper 66.66 per cent, woodchips + paper 76.9 per cent and paper 78.9 per cent. Volatile matter for rice husk 70.21 per cent, rice husk + paper 62.14 per cent,woodchips+paper 79.12 per cent and paper 91.30 per cent.Ash content for rice husk 20 per cent, rice husk + paper 25 per cent,woodchips+paper 15 per cent and paper 5 per cent respectively.

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DEPARTMENT OF AGRICULTURE ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR; 2018-2019

TITLE OF THE PROJECT: MULTI BOOM SPRAYER

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ABSTRACT

A spray boom and vessel apparatus is disclosed having two or more spray nozzles adjustably mounted along the axes of a plurality of independent spray booms. The spray booms are supported upon a boom frame in horizontal, parallel relation to each other. The boom frame is supported by a vessel and valve frame, which also supports a plurality of vessel and valve assemblies. Each vessel and valve assembly is in fluid-flow connection with the nozzles of one of the spray booms and a source of pressurized air. The vessel and valve frame is mounted on a vehicle frame, which is pivotally attached to a vehicle.

KEY WORDS: *more spray nozzles, independent spray booms, boom frame, valve assemblies, source of pressurized air, vehicle.*

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DEPARTMENT OF AGRICULTURE ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR; 2018-2019

TITLE OF THE PROJECT: MULTIPURPOSE FARM EQUIPMENT

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ABSTRACT

India is an agriculture based country in which, 70 per cent of people depends on the outcome of farming. But if we observe that with increase in population the farm gets distributed among the family and because of this, farmer in India held averagely only two acre farm. Also economically, farmers are very poor due to which they are unable to purchase tractors and other costly equipments hence they use traditional method of farming. So we are thinking that human and animal efforts can be replaced by some advance mechanization which will be suitable for small scale farmer from economical and effort point of view. So we are developing this equipment which will satisfy all this need and to solve labour problem. A multifunction device will come in handy that can be put to use in different stages of farming as per requirement. This project work is focused on the design and fabrication of multipurpose equipment which is used for sowing, fertilizing, weed removal process. The multi-crop planter has the capability of delivering the seeds precisely with uniform depth in the furrow, and also with uniform spacing between the seeds like groundnut, pea, soyabean. The seed planter consist of the main frame, adjustable handle, seed hopper, seed metering disc, adjustable furrow opener, adjustable furrow closer, drive wheels, seed tube . Seed metering disc was designed to be interchangeable to allow for sowing of the different varieties of seeds. The multipurpose agricultural equipment is very simple to use, the various adjustments are made with ease, and it is maintenance free.

KEY WORDS: *seed hopper, sowing, weeding, furrow opener.*

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DEPARTMENT OF AGRICULTURE ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR; 2018-2019

TITLE OF THE PROJECT: PERMANENT FARM BUND REFORMER

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ABSTRACT

In mechanized farm, bund is prepared by a bund former either operated by tractor or animals for irrigation purposes and also to demarcate the fields. Tractor operated bund formers are normally either disc -or mould board or forming board type. If bund is formed with the help of traditional bund former, however, shaping and packing of bunds is done manually using spade and feet. This activity is time consuming and labour intensive. To overcome the drudgery involve in these operations, a tractor operated bund former-cum-packer was designed and developed. An attempt is made for enabling the combined operations of bund forming and packing in single pass that can save fuel, time and other resources further. The bund former-cum-packer consisted of commercially available disc type bund former, rectangular tool bar frame, and packing unit (concentric cylindrical roller, drive shaft, conical discs, compressive shanks etc). The bund formed by bund former-cum-packer was field tested and found neither water seepage nor breakage of bund during flood irrigation. The field capacity with the equipment was 1.4 ha/h at tractor speed of 2.93 km/h in 2nd low gear. The bund former-cum-packer can reduce about 96% dependency on labour requirement for packing the bund. Overall use of the equipment is having potential to increase the resource productivity by 38 %.

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DEPARTMENT OF AGRICULTURE ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR; 2018-2019

TITLE OF THE PROJECT: DESIGN AND FABRICATION OF TAPIOCA HARVESTER

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ABSTRACT

Harvesting plays a critical role in the tapioca production value chain. A review of some existing tapioca harvesting options is necessary to facilitate the proper adaption and uptake of improved harvesting methods applicable to farmers from different parts of the globe. In terms of capacity, manual, semi-manual and fully mechanised harvesting options respectively require about 22–51 man-hr/ha, 16-45 man-hr/ha and 1–4 man-hr/ha. An added advantage with mechanised options is that the field is left ploughed after harvesting with savings on fuel, time and cost. Mechanised harvesters work best on ridged fields with minimal trash or weeds and relatively dry soils (12–16% moisture content). Earlier attempts at mechanised harvesting have been affected by constraints such as soil characteristics, nature and size of tubers, depth and width of cluster and bond between tubers and the soil, leading to high tuber damage. Though less research attention is given to tapioca harvesting mechanisation, the aspect of the global tapioca transformation agenda has always been the problem. There is still improvement in the provision of appropriate harvesting options for tapioca worldwide and more concerted effort from both the government and private sector.

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DEPARTMENT OF AGRICULTURE ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR; 2018-2019

TITLE OF THE PROJECT: SMALL SCALE SUGARCANE HARVESTER

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ABSTRACT

Sugarcane is the major component for the production of sugar and ethanol. Ethanol is the predominant fuel in certain countries like Brazil. Hence production of sugarcane stands the most important and competing. Sugarcane grows between the regions 22° N and 22° S. The moderate temperature with adequate rainfall improves the cultivation of sugarcane. As far as India is concerned, India is the second leading producer of sugarcane. The tropic temperature in India well suits the sugarcane cultivation. In populous country as India, there could not be alone mass production and smallscale farming plays a vital role. The technology has leaped far ahead in a century. Meanwhile it imposes a major thread of high cost for implementation. This hinders the smallscale intensive farmers for implementing and hiring the agricultural machineries. Sugarcane harvesting is a bit difficult and complicated task. It is mostly performed manually or atleast in India where smallscale cropping lies dominant. Manual harvesting of canes is less efficient and more time consuming on taking into account the fatigue factors of the manual workers. The existing sugarcane harvester comes in the robust structures of tractor and trucks, which prove efficient, though it is not affordable by most farmers. The main motive of the project is to reduce the structure to the most compact structure as possible and to minimize the cost of the existing machine to the greater extent as possible. In the first attempt, complete automation at the minimal cost is cumbersome. But the manual efforts could be reduced to the possible extent.

KEY WORDS : *Harvesting, Sugar cane, Machinery*

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DEPARTMENT OF AGRICULTURE ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR; 2018-2019

TITLE OF THE PROJECT: PEPPER THRESHING MACHINE

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ABSTRACT

In this project we design and fabricate a machine for the purpose of threshing the peppers. In many industry even now the peppers are separated manually. Due to this manual process in industries there is wastage of money and time. In order to avoid this wastage we have designed the following model called pepper thresher machine. The threshing of pepper spikes and the de-skinning of pepper berries using a mechanized system. This is an advanced and easy process to separate pepper from the plant. There are many problems associated with existing design of pepper separator machine like high cost, low efficiency, low capacity, more processing time and the main disadvantage is damaging of berries. In this process we do not need any high electrical supply to operate the machine. This model has the following parts such as rotating drum, a hopper and cam operated tray arrangement.

KEY WORDS: Piper nigrum, Pepper Separator Machine, Threshing.

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DEPARTMENT OF AGRICULTURE ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR; 2018-2019

TITLE OF THE PROJECT: DESIGN AND FABRICATION OF MINI RICE HARVESTING AND THERSHING MACHINE

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CO-PRINCIPAL INVIGILATOR: N.SATHESWARAN

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ABSTRACT

One of the most important problem for small holder farmers is to harvest their crops at low cost, for that purpose this project was done. The main aim was to design low cost multipurpose mini rice Harvesting & Threshing Machine. This machine is compact and can cut up to two rows of rice crop. It is specially suits for hills, mountains and areas where general combined harvesters cannot enter in and it is also used for doing experimental projects. The name derives from its combining two separate operations comprising harvesting reaping and threshing into a single process. Among the crops harvested with a combine are wheat, oats, barely, corn, soybeans and flax. The waste straw left behind on the field is the remaining dried stems and leaves of the crop with limited nutrients which is either chopped and spread on the field or baled for feed and bedding for livestock. Harvesters are one of the most economically important labour saving inventions, enabling a small fraction of the population to be engaged in agriculture. The machine should be affordable to small holder farmers in developing countries and women would also be able to taste the fruits of mechanization. After testing this machine in farm it is found that the cost of harvesting using this harvester is considerably less as compare to manual harvesting.

Key words: *Harvesting, Threshing, Combine Harvester, Mechanization, Manual Harvesting.*

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DEPARTMENT OF CIVIL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR; 2018-2019

TITLE OF THE PROJECT: EXPERIMENTAL INVESTIGATION ON HIGH PERFORMANCE CONCRETE

PRINCIPAL INVIGILATOR: V.MENAKA

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ABSTRACT

Cement replacement materials are by-products used to produce high performance concrete. Published data on the effects of combinations of mineral admixtures in concrete on the microstructural and performance-related properties under different curing regimes are comparatively little. Further the correlation of strength of concrete to its permeability and pore structure is also not clear. The main objective of this research is to study the performance of various combinations of fly ash/silica fume and slag/silica fume concretes under three different curing regimes, viz. continuous moist curing, no moist curing after demolding and air drying after 7-days of initial moist curing. Six different concrete mixes were prepared with ordinary Portland cement and a blend of Portland cement and combinations of fly ash+silica fume and slag+silica fume The water-to-cementitious materials ratio of all the concrete mixtures was kept constant at 0.45.The properties investigated included workability of the fresh concrete, engineering properties such as cube and modified cube compressive strength, flexural strength, dynamic modulus of elasticity, pulse velocity, shrinkage and swelling, permeability and microstructural properties such as porosity and pore size distribution.

The results show that prolonged dry curing results in lower strengths, higher porosity, coarser pore structure and more permeable concretes. It was found that the loss in early age compressive strength due to incorporation of fly ash or slag can be compensated for by the addition of small amounts of silica fume. The engineering and microstructural properties and permeability of concretes containing fly ash or slag appear to be more sensitive to poor curing than the control concrete, with the sensitivity increasing with increasing amounts of fly ash or slag in the mixtures. The incorporation of high volumes of slag in the concrete mixtures refined the pore structure and produced concretes with very low porosity and threshold diameters.

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DEPARTMENT OF CIVIL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR; 2018-2019

TITLE OF THE PROJECT: EXPERIMENTAL STUDY ON REPLACEMENT OF M-SAND WITH CERAMIC WASTE IN A FLY ASH BRICK

PRINCIPAL INVIGILATOR: A.JAYAPAL

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ABSTRACT

A fly ash bricks can be extensively used in all types of building construction activities. Our project was based on using ceramic waste powder in fly ash bricks. Since ceramic industry about 5-10% production goes as waste in various processes while manufacturing this waste of ceramic industries dumped at nearby places resulting in environmental pollution causing effect to habitant and agricultural lands. Therefore using of ceramic waste powder in bricks would benefit in many ways in saving energy &protecting the environment. Ceramic waste powder replacing to crushed powder of fly ash bricks with proportion as specimen size 230mm x 100mm x 75mm were cast for different mix percentage of lime, fly ash, M-sand, ceramic waste powder. The results show the variation of major test in compressive strength and water absorption for mix proportion of materials mentioned earlier at curing ages. Then we may consider the specimen size 230mmx100mx75mm to casting the bricks to different mix proportion to the percentage of lime(20%), fly ash(30 -60%), M-sand(20-50%), ceramic(20%). We had tested various specimen as per proportion considered for casting. After this, we compared the weight, compressive strength and water absorption of ceramic with different proportion of fly ash bricks.

Keywords: Ceramic waste powder, lime, M-Sand, weight, compressive strength and Water absorption

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DEPARTMENT OF CIVIL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR; 2018-2019

TITLE OF THE PROJECT: STUDY ON STRUCTURAL PROPERTIES OF CONCRETE BY USING BOTTOM ASH AS PARTIAL REPLACEMENT OF FINE AGGREGATE WITH ADDITION POLYPROPYLENE FIBER

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ABSTRACT

Concrete is the most important engineering materials and the addition of some other materials may change the properties of concrete. Studies have been carried out to investigate the possibility of utilizing a broad range of materials as partial replacement of materials for cement and aggregate in the production of concrete. Bottom ash is a hazardous by product from coal based thermal Power plants and it produced from perundurai Sipcott Corporation. The Objectives of this study was to investigate the effect of use of coal bottom ash Partial replacement of fine aggregate in various percentages (0-30) and with addition of polypropylene fibre (1%).

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DEPARTMENT OF CIVIL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR; 2018-2019

TITLE OF THE PROJECT: PLANNING, ANALYSIS AND DESIGN OF SCHOOL BUILDING

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ABSTRACT

The main necessity of this project is to get knowledge and an experience in the field of design by using IS codes, soft wares and applying the design principles in a practical way.

The main objective of this project was to analysis and design a framed structure using both IS codes and STAAD. Pro software.

The structures has been designed in detail using limit state method of design confirming to IS: 456-2000. The plan was drawn on AutoCAD and the structural elements were designed by both STAAD,Pro and manual design and the sections details have been obtained.

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RESEARCH PROJECT

ACADEMIC YEAR; 2018-2019

TITLE OF THE PROJECT: EXPERIMENTAL STUDY ON FLY ASH BRICK BY REPLACING HYPO SLUDGE

PRINCIPAL INVIGILATOR: K.R.PRABHAKARAN

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ABSTRACT

A fly ash bricks can be extensively used in all types of building construction activities. Our project was based on low density brick, using hypo sludge material. The hypo sludge bricks may be comparatively lighter in weight and stronger as common fly ash bricks. Since hypo sludge is being accumulated as waste material in large quantity in paper waste industry and creating serious environmental pollution problems. The specimen size is 230 mm x 100 mm x 7.5 mm. The main advantage of our project is, the mix proportion is started from the normal method and ending with profitable method. The fly ash percentage is reduced from 60% to 30%. As well as the manufacturing sand percentage is increased from 30% to 60%. Then we were comparing the both methods. The various tests were conducted in bricks such as compressive strength, water absorption test, efflorescence test. The result shows the variation of compressive strength and water absorption for different mix proportion of materials mentioned earlier at curing stages. These are the main tests, we had done. Then the following additional tests are also conducted such as hardness test, soundness test, structure test, colour test and size and shape test with different mix proportions.

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RESEARCH PROJECT

ACADEMIC YEAR; 2018-2019

TITLE OF THE PROJECT: EXPERIMENTAL INVESTIGATION ON STRUCTURAL PROPERTIES OF HYBRID FIBER CONCRETE

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ABSTRACT

Both steel and polymeric fibers have been used to reinforce concrete and consequently increase its toughness and crack resistance. Fiber reinforced concrete can be used in some structural applications with a reduced amount or even without any conventional reinforcement. One application of the fibers is to increase the load-carrying capacity of concrete subjected to shear. Several design methods have been proposed that take into account the increase in shear strength due to fibers (Al-Tann and Al-Feel, 1990; Casanova and Rossi, 1997; Campione and Mindess, 1999; RILEM 2000a; Dupont and Vandewalle, 2000; Italian Guidelines CNR-DT 204/2006, 2006; among others). Each of the methods accounts for the fiber contribution by means of an index based on the toughness of the material. However, each formula uses a different index, obtained from different types of test configurations. Thus the application of the design methods can be difficult. Moreover, most of the design methods and test procedures have been developed only for the evaluation of steel fiber reinforced concrete.

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RESEARCH PROJECT

ACADEMIC YEAR; 2018-2019

TITLE OF THE PROJECT: PLANNING, DESIGN, ANALYSIS OF WATER TREATMENT PLANT

PRINCIPAL INVIGILATOR: K.R.PRABHAKARAN

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ABSTRACT

Nowadays water scarcity is burning issue. As it is quite obvious that there is day to day increase in population, the demand for water also increases to satisfy the needs of the community therein comes a necessity to design the treatment plants, or design the new treatment plants. Design includes hydraulic design and process of water treatment in the plant. For hydraulic design of the plant, we need to forecast the population. We forecasted the population by arithmetic increase method.

Water treatment plant are used to treat the river water for drinking purposes. River water consists of organic materials, pathogens and bacteria, in order to remove adulterants water is treated. During settling process, the particles get coagulated and get settled down in the sedimentation tank. Then the water is passed through the filtration tank. During the filtration process the small particles remained in the water is removed and 90% of bacteria and organic particles are removed.

The filtered water is passed to the disinfection tank. In disinfection process the water is mixed with chlorine and passed between the baffle walls. The entire process will be completed and resulting water will be available in purified form. In this process it kills all bacteria and pathogens present in the water. Hence the planning, analysis and the design of these components are carried out. This project gives the detailed design of water treatment components.

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DEPARTMENT OF CIVIL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR; 2018-2019

TITLE OF THE PROJECT: PLANNING AND DESIGNING OF BANK BUILDING

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CHAPTER 1

INTRODUCTION

We have a selected A **"BANK BUILDING"** as our project. The work consists of **PLANNING AND DESIGNING** For the Commercial building.

Planning and designing of any structures is a great art to the civil Engineering as the server many people. The building is located at kallakkurichy.

The ground and first floor contains

Vehicles parking, ATM Room, Genarater

Manager Room

Counters

Storage Room

Cash Room,Toilets

The project details are given below

Type of structure	:	Bank building
No of story	:	G +1
Builting area	:	190m^2
Floor to floor height	:	3.1m
Grade of concrete		
And steel	:	M_{20} and Fe_{415}
Wall thickness	:	230mm
Partition wall thickness	:	125mm

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RESEARCH PROJECT

ACADEMIC YEAR; 2018-2019

TITLE OF THE PROJECT: EXPERIMENTAL INVESTIGATION ON PERVIOUS CONCRETE

PRINCIPAL INVIGILATOR: K.SHARMILADEVI

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ABSTRACT

Our cities are being covered with building and the air-proof concrete road more and more. In addition, the environment of city is far from natural. Because of the lack of water permeability and air permeability of the common concrete pavement, the rainwater is not filtered underground. Without constant supply of water to the soil, plants are difficult to grow normally. In addition, it is difficult for soil to exchange heat and moisture with air; therefore, the temperature and humidity of the Earth's surface in large cities cannot be adjusted. This brings the phenomenon of hot island in city. At the same time, the plash on the road during a rainy day reduces the safety of traffic of vehicle. Present state of knowledge about permeability and methods to decrease it are discretely available from literature. Few pozzolanic materials have been reported to decrease the permeability remarkably. To overcome these problems permeable concrete is introduced. Though it may be new in some areas of the country, pervious concrete technology has been utilized since the 1970s. Pervious concrete is a zero-slump, open graded material consisting of hydraulic cement, coarse aggregate, admixtures and water.

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RESEARCH PROJECT

ACADEMIC YEAR; 2018-2019

TITLE OF THE PROJECT: AN INVESTIGATION ON GREEN ADOBES BY STABILISING AND DROP IN THERMAL MASS

PRINCIPAL INVIGILATOR: T.S.KUMANAN

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ABSTRACT

Nowadays the major material which has been used in load bearing structure is bricks. The bricks consists of constituents like clay, redmud, water, etc., Clay is one of the natural resources which is at the stake of depletion. There are some other blocks like Renacon blocks, earth blocks, hollow blocks, etc., which is used for constructing load bearing structures. But these blocks owns a wide range of disadvantages in bearing compressive stress. During ancient times Adobes which are similar to bricks, are used for construction. Adobe is a building material made from earth and organic materials. Adobe is Spanish for mudbrick, but in some English speaking regions of Spanish heritage, the term is used to refer to any kind of earth construction. There is no standard size for Adobes and they have with substantial variations over the years and in different regions. And also it does not posses any codal provision and mix proportion for manufacturing as it varies from place to place based on the requirements.

This project is about stabilizing of adobe block with impregnating the sisal fibre and cement and dropping the thermal mass by adding silt (saw dust). Our foremost moto is to remodule the ancient ideas to commercial use in construction by satisfying the present requirements and being an answer for the retort against the construction field as a cause for environmental pollution that arises all over the world by stepping into a green construction material called Green Adobe. To ensure the better performance of the green adobe, we have casted both the conventional and green adobes and tested and compared the results.

Keywords: Adobes, Soil stabilization, thermal mass, Red mud, Strength and Durability.

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RESEARCH PROJECT

ACADEMIC YEAR; 2018-2019

TITLE OF THE PROJECT: STABILIZATION OF SOIL BY USING MARBLE WASTE

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ABSTRACT

This project deals about the experimental study on the stabilization of soil using m material wastes. Marble waste is used for the stabilisation of soil. Marble waste is formed from cutting and polishing of marble stone. It is one of the m waste generated waste material. Marble waste contains high amount of calcium, silica, alumina which aids in the stabilization of the soil. Marble waste is added in varying percentages (3, 6, 9, 12, 15 %) along with curing periods of (3, 7, 14) days to the soil sample. Basic properties of soil like Atterberg limits, compaction characteristics and strength characteristics were determined. The experimental study on the stabilization of soil using m material waste. Marble waste is used for the stabilization of soil. Marble waste is produced from cutting and polishing of marble stone. Marble waste contains high amount of calcium, silica, alumina which aids in the stabilization of the soil. Marble waste is added in varying percentages along with soil sample. In the waste properties of soil like compaction and strength characteristics. The main objectives of the soil stabilization to increase the bearing capacity of the soil, its resistance to weathering process and soil permeability. Therefore soil stabilization techniques are necessary to ensure the good stability of soil so that it can successfully

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RESEARCH PROJECT

ACADEMIC YEAR; 2018-2019

TITLE OF THE PROJECT: DESIGN AND ANALYSIS OF MULTISERIATE HOTEL BUILDING

PRINCIPAL INVIGILATOR: R.RAMYA

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ABSTRACT

The business and tourist sector flourishing in Salem city. We have to planned and designed the construction of the building of Three star hotel of approved standards to fulfill the needs of the current situation.

In our project. The SKS ROYAL HOTEL, SALEM ,we have aim to satisfy the basic requirements of a Three star hotel . Allocation the available space for different functions the entire structure was developed.

I nternational restaurant and hygienic foods are available plinth area 11328Sqft. (G+4)&4 ground floor.

M20 grade of concrete.&Fe415 grade of steel.

National Building code of India 2005,Bureau of Indian Standards.(NBC). Bureau Indian standards ,(1978):16- design aids to IS 456 ,BIS New Delhi.

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RESEARCH PROJECT

ACADEMIC YEAR; 2018-2019

TITLE OF THE PROJECT: INFLUENCE OF THE PROPORTION OF FOUNDRY SAND ON MECHANICAL PROPERTIES OF CONCRETE

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ABSTRACT

The constant depletion of sand beds at all major sources of availability is a major concern and thus effects are taken in order to either abolish or replace sand in construction activities particularly in concrete. Foundry sand from casting industries is one of the waste materials which are dumped extensively and in this study an attempt has been made to use this waste material in the concrete to replace fine aggregate.

Waste is generated from all industries in different types and quantities throughout the life-cycle of it. The overall problem exists due to factors such as the use of materials and processes that create disposal problems, the use of materials that have no potential for future reuse or recycling and the use of inefficient materials. It is need to reduce or eliminate the wastes that follow the various paths leading to the landfill which creates pollution problems. Recycling the materials conserves resources and reduces pollution risks by keeping them out of disposal facility. There are many benefits to the increased used of recycled waste materials. Of many waste materials recycled and reused, foundry sand is one of the vital materials used in construction industry. Foundry sand is produced as waste from metal casting industries. Foundry sand can be used in concrete to improve strength and other durability factors.

In the present study, effect of foundry sand as fine aggregate replacement on the compressive strength, flexural strength and split tensile strength of concrete having mix proportions of 1:1.28:2.56:0.45 was investigated. The percentage of replacements are 10%,20%,30%,40%,50%,75% and 100% by weight of fine aggregate. Tests were performed for compressive strength, flexural strength and split tensile strength for all replacement levels of fine aggregate at different curing periods (7-days & 28-days). Test results showed some increase in compressive strength, flexural strength and split tensile strength compared to normal concrete for all the replacement levels. So foundry sand can be safely used in concrete for durability and strength purposes. Making concrete from recycled materials saves energy and conserves resources and it is concluded that the more material reused, the fewer resources are consumed which leads to a safe environment.

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DEPARTMENT OF CIVIL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR; 2018-2019

TITLE OF THE PROJECT: PLANNING, ANALYSIS AND DESIGN OF RESIDENTIAL BUILDING WITH PERVIOUS FOR PHYSICALLY CHALLENGED

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ABSTRACT

Every person in this world need shelter. This shelter has to be the comfortable zone of the person. it becomes very important in the case of physically challenged. In such case it is very necessary to provide them with all facilities according to their convenience.

The main objective of the project is to plan, analyse and design a structure and to gain knowledge in a practical way. The planning, analyzing and designing of residential building have been done using Auto CAD and STAAD Pro software. The building has 3 storey and it is a reinforced concrete framed structure.

The proposed building is a framed structure with Bedroom, Kitchen, Dining, Hall, Pooja room, Bathroom, Toilet and other provisions for the physically challenged in a Residential building.

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RESEARCH PROJECT

ACADEMIC YEAR; 2018-2019

TITLE OF THE PROJECT: EXPERIMENTAL INVESTIGATION ON STRENGTH AND DURABILITY OF CONCRETE BY PARTIAL REPLACEMENT OF SAND USING COPPER SLAG

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ABSTRACT

Copper slag is considered as one of the waste materials which can have a promising future in construction industry as partial or full substitute of either cement or aggregates. For each ton of copper production, about 2.2 tons of copper slag is generated. This slag is currently used for many purposes like land filling, construction of abrasive tools, roofing granules cutting tools and rail road ballast material, which are not very high value added application. These applications utilize only about 15% to 20% of copper slag generated and remaining material is dumped as a waste. In order reduce the accumulation of copper slag and also to provide an alternative material for sand and cement an approach has been done to investigate the use of copper slag in concrete for the partial replacement of sand and cement.

This research work mainly consisting of M30 concrete is used to determine various mechanical properties. The thesis consists of substituting sand partially by copper slag in concrete. For sand replacement, four test groups (including control mixture) going to be replacing of 0% (control specimen),10%, 20%,30, 40% and 50% copper slag with sand in each series.

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DEPARTMENT OF CIVIL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR; 2018-2019

TITLE OF THE PROJECT: OPERATION AND REITERATION OF AUTOMOBILE SERVICE STATION WASTE WATER USING REDMAT FILTER

PRINCIPAL INVIGILATOR: J.UMANAMBI

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ABSTRACT

Among the many types of waste water available from many sources, the automobile service station waste water plays a major role of usage of fresh water on commercial side. As many people even don't having the water for drinking in this world in this situation deriving a solution for this serious issue is our primary duty. The automobile waste water cannot be used for **drinking and irrigation purpose** because it consists of excess amount of **inorganic and organic (BOD) waste** present in waste water. The removal **BOD** and **COD** from automobile waste water by using **sedimentation, Solar Photo Fenton Process and filtration.** After treatment the waste water can be used for various purposes such as **irrigation and discharge to surface water bodies.** The treatment is provided within the site so **low cost** and **time consumption** is less. Over the few decades, sedimentation, coagulation, Activated sludge process and filtration has gained importance for purification, separation recovery process. Above these methods the replacement of coagulation and ASP the innovative solar photo Fenton process was used in our project. BOD and COD removal efficiency of solar photo Fenton process as **66%** and **81%.** BOD and COD removal efficiency of our Redmat filter as **43%** and **91%.** Redmat filter is a best filter for waste water treatment process compared to ceramic filter. BOD and COD removal efficiency of on-site treatment process as **91%** and **99%.**

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DEPARTMENT OF CIVIL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR; 2018-2019

TITLE OF THE PROJECT: EXPERIMENTAL STUDY ON SLAG CONCRETE

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ABSTRACT

Steel slag is an industrial by-product of steel industry. It possesses the problem of disposal as waste and is of environmental concern. The results were compared with conventional concrete property can be maintained with advanced mineral admixtures such as steel slag powder as partial replacement of cement . Experiments were conducted to determine the compressive strength; split tensile strength of concrete with various percentages of steel slag aggregate. Compressive strength of steel slag concrete with different dosage of slag was studied as a partial replacement of cement. From the experimental investigations, it has been observed that, the optimum percentage of steel slag for high strength concrete.

Key words - **Concrete, steel Slag Powder, Compressive Strength, split tensile strength Flexural Strength, Optimum Replacement**

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RESEARCH PROJECT

ACADEMIC YEAR; 2018-2019

TITLE OF THE PROJECT: PLANNING, ANALYSIS AND ESTIMATION OF FOUR STOREY APARTMENT BUILDING

PRINCIPAL INVIGILATOR: K.VIVEK

CO-PRINCIPAL INVIGILATOR: Dr.G.S.VENKATASUBRAMANI

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ABSTRACT

There is always a dilemma between the Technology and Science of Architecture 'Vastu Sastra' in our task. Giving importance to both things will tends to be confused. In this project we have handled these two things in balanced manner. Giving full focus on the above two things is little bit difficult. But we includes the matter which is best to our knowledge. In the hard time of developing stage of our country with enormous population, shelters within short and enough space is essential. This issue arrives a solution called Apartment Building. An apartment is a building house in which more space or single unit occupies an entire floor on its own, especially for Nuclear family. An apartment is the subdivision of something compacted. Apartment buildings are multi storey building where three or more contained within one structure. Such buildings are also called as complex, block of flats .Our project is "Four storey Apartment building" (G+4) with total of 7 Flats (2BHK) and a function hall Capacity of 50 members at the top floor. We have planned an efficient house each at 858 sq.ft, with fulfilled features such as Car parking, Elevator. It will be proposed to establish in Azhagapuram, Salem Corporation. The cost of building that includes brick work and coarse aggregate is estimated and added in this project the cost budgeted for completion of entire project is 1.45 crores approximately. Cost of single flat 2BHK is approximately fixed as 21 lakhs and a single bedroom flat as 17 lakhs.

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RESEARCH PROJECT

ACADEMIC YEAR; 2018-2019

TITLE OF THE PROJECT: NUMERICAL INVESTIGATION ON COLD FORMED PRESS BRAKING STEEL CHANNEL AND ZED SECTIONS UNDER AXIAL COMPRESSION

PRINCIPAL INVIGILATOR: K.VIVEK

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ABSTRACT

This paper describes a buckling behaviour of a serious of innovative cold form press braking steel column sections .Buckling behaviour was analysed by both theoretical and Numerical analysis. For the optimization process of arbitrarily shaped thin walled member is done by CUFSM4.03 package. The steel channel and zed sections were considered with various profile and the dimensions were comprises as per the guidelines given in North American Specification (NAS). The parametric study was also carried out by varying the yield stresses, thickness and length of the column. The use of cold formed steel members in building began in 1850s.

A variety of steel thicknesses are available to meet a wide range of structural and non-structural applications.The sections were made with cold formed steel sheets of thickness 2mm& 1.2mm and length of 600mm & 1200mm. The yield stresses of steel sheets were varied as 250N/mm^2, 350N/mm^2 and 550N/mm^2 which are obtained from preliminary coupon test results. Theoretical analysis was done by Direct Strength Method, which was proposed by B.W.Schafter in 2004. Numerical analysis is done by finite element modelling package ANSYS 12.1 with non-linear analysis on columns. This paper describes the failure modes of buckling in Cold Formed Steel sections and nominal load carried by the column under axial compression.

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT: OPTIMIZATION FOR DEMAND RESPONSE AUTOMATION SERVER IN MICROGRID

PRINCIPAL INVIGILATOR: DR.A.SUPHALAKSHMI

CO-PRINCIPAL INVIGILATOR: DR .A .STEPHEN THANGARAJ

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ABSTRACT

The balance of supply and demand in a microgrid is traditionally maintained by exploiting the reserves on generation side, which is capital intensive. However, approaches of on-line energy management including peak-load reduction and control energy provision by the demand side can support to reduce the demand during the situation of energy imbalance. In this system, a Demand Response Automation Server (DRAS) can communicate with the loads and directs them to isolate from the grid in real-time to reduce overall demand load on the system especially during peak-load hours. For this purpose, each load is coupled with a control node to become an intelligent load. Control node is a simple controlling circuitry, consisting of a communication node, power measuring device and a switch that can isolate the load from the grid under the management of central controller. MGCC takes decisions on the basis of control algorithms, which are implemented in it. For achieving the demand response automation, it must be trained with a deep learning model for that it need a quality data so the model needs to be simulated and optimized initially. Proposed system increases the reliability of consistent energy supply and considerably reduces the installation and maintenance costs of a microgrid.

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR; 2018-2019

TITLE OF THE PROJECT: IMPROVED SEGMENTATION IN RETINAL BLOOD VESSEL USING LINE DETECTOR

PRINCIPAL INVIGILATOR:R.RUBIA

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ABSTRACT

Several diseases can be detected and diagnosed at early stage by observing changes in retinal blood vessel features. In order to detect these changes, the major step required is blood vessel segmentation. A Linear combination of line detectors at varying scales along with multiple windows of different sizes is proposed. By implementing this technique, the drawbacks encountered in multi-scale line detection such as noise and false vessel detection around the optic disk are eliminated. The performance of the proposed method is evaluated on three publicly available datasets DRIVE, STARE and CHASE by considering sensitivity, specificity, accuracy, precision, false discovery rate, F1 score, Matthews correlation coefficient and G-mean. The segmentation of retinal blood vessels in the retina is a critical step in the diagnosis of diabetic retinopathy. Retinal blood vessel segmentation algorithms are available to compare their performance and they combine to achieve superior performance. The Digital Retinal Image Vessel Extraction (DRIVE) database of the retinal images are available in the existing system. This database contains 40 images, 20 for training and 20 for testing. These images were segmented manually by two trained researchers. A new method for the blood vessels in the retinal image automatically segment and also propose a method that is extracted from a diagrammatic representation of the vascular network with additional structural information. Comparing to existing system, the proposed system has more accuracy, sensitivity and specificity values are 0.9452, 0.7067 and 0.9801, respectively.

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RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT: MINERAL CLASSIFIER USING IMAGE PROCESSING

PRINCIPAL INVIGILATOR: R.SANTHIYA

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ABSTRACT

Earth is full of minerals but is not extracted completely due to lack of technology. Mineral Classifier is able to identify the name of minerals when given their photos. Mineral has been one of the most important natural resources for human. Its usage can be found on many occupation fields. However, the name of the minerals is often hard to remember and it can't be easily recognized by its physical appearance as well. Consequently, Mineral Classifier can help people who are not familiar with minerals to identify them. For this, it does not have all variants of mineral that are known to human. But Malachite, Bauxite, Amethyst & Gypsum are taken for classification so that the user can identify them on giving their images as input to the mineral classifier. The combinations of the minerals are also hard to find during the analysis phase in the laboratories. Through this it can easily show the ratio of the minerals that are identified by our classifier. The results are obtained very effectively and efficiently. It takes less amount of time for training and validation process than practical method.

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RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT: AN IMPROVED GRAPHICAL AUTHENTICATION SYSTEM FOR SHOULDER SURFING ATTACK

PRINCIPAL INVIGILATOR: V.MAHESHKUMAR

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ABSTRACT

Image Processing is a process of analysis and manipulation of a digitized image, especially in order to improve its quality. Authentication is used for the applications like computer security and privacy. The human actions like choosing bad passwords and entering password in an insecure way are regarded in the authentication chain. With web applications and mobile application piling up, people can access these applications anytime and anywhere with various devices. This evolution brings great convenience but also increases the probability of exposing passwords to shoulder surfing attacks. Attackers can observe directly or by using external recording devices to collect the users' credentials. To overcome this problem, the Pass Matrix technique is used for authentication purpose. By using this technique with graphical password, the shoulder surfing attacks can be reduced. With a one-time valid login indicator, the circulative horizontal and vertical bars covering the entire scope of pass-images. Pass Matrix offers no hint for attackers to figure out or narrow down the password even they conduct multiple camera-based attacks. The Pass Matrix prototype is implemented in android mobile applications and carried out the real user experiments to evaluate its memorability and usability. The proposed system achieves better resistance for shoulder surfing attacks.

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RESEARCH PROJECT

ACADEMIC YEAR; 2018-2019

TITLE OF THE PROJECT: Mammogram Image Analysis to Identify Severity Level Using Improved Probabilistic Neural Network

PRINCIPAL INVIGILATOR: Dr.S.Sasikala

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ABSTRACT

Breast cancer is the leading cause of death in women. If breast cancer is detected in early stage, then chances of survival are very high. In body, new cells take place of old cells by orderly growth as old cells die out. The process of mutation controls the activation of genes in cells. Due to this, cells get ability to go on dividing without control and producing cells like it, forming a tumor. This tumor can be of benign or malignant. The benign tumors are not dangerous while malignant tumors are dangerous to health. The unchecked malignant tumors have ability to spread in other parts of body. Breast cancer detection is complex process. So the Computer Aided Diagnosis (CAD) of breast cancer helps physician in decision making. In this project, the model for breast cancer detection is developed using Improved Probabilistic Neural Network (IPNN).The proposed system includes Adaptive Median Filter and Gaussian Mixture Models(GMM) segmentation methods as a supportive aid for the detection of breast cancer in its earlier stage.

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RESEARCH PROJECT

ACADEMIC YEAR; 2018-2019

TITLE OF THE PROJECT: CANCER DETECTION FOR MEDICAL IMAGE.

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ABSTRACT

Breast cancer is the most common cancer diagnosis for women worldwide. The proposed system of detection of breast cancer is done by using mammogram along with adaptive median filter,GMM segmentation and SVM classifier, comparison in terms of accuracy and efficiency is done for the proposed system with the existing system breast cancer which is a deadly disease can be seen numerous in number among women now-a-days. In existing system the Wisconsin Diagnostic Breast Cancer(WDBC) and Wisconsin Breast Cancer Database(WBCD) is used to diagnose and detect cancer cells by employing convolution neural network with it.Mammography is considered to be one of the main tools for the early detection of breast cancer. In general mammogram images are used to identify the presence of cancer. The noise of the image are cleared by using adaptive median filter and it is purified by using Gaussian mixture model to get accurate size and shape of cancer cells. The SVM classifier defines whether it is in normal, benign or Malignant stage. The feature extraction process is done by loading the datasets and training by using train convolutional neural network.

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RESEARCH PROJECT

ACADEMIC YEAR; 2018-2019

TITLE OF THE PROJECT: NEURAL NETWORK BASED WEB MINING OF SOCIAL MEDIA DATA FOR DEPRESSION ANALYSIS

PRINCIPAL INVIGILATOR: P.RENUKADEVI

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ABSTRACT

Intelligently extracting knowledge from social media has recently attracted great interest from the Biomedical and Health Informatics community to improve healthcare simultaneously, outcomes and reduce costs using consumer-generated opinion. This work proposes a two-step analysis framework that focuses on positive and negative sentiment, as well as the side effects of treatment, in users' forum posts, and identifies user communities (modules) and influential users for the purpose of ascertaining user opinion of Depression. This is used a self-organizing map to analyse word frequency data derived from users' forum posts. Then introduced a novel network-based approach for modelling users' forum interactions and employed a network partitioning method based on optimizing a stability quality measure. This allowed us to determine consumer opinion and identify influential users within the retrieved modules using information derived from both word-frequency data and network-based properties. Thus approach can expand research into intelligently mining social media data for consumer opinion of various depression to provide rapid, up-to-date information for the pharmaceutical industry, hospitals, and medical staff, on the effectiveness (or ineffectiveness) of future depression treatments.

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RESEARCH PROJECT

ACADEMIC YEAR; 2018-2019

TITLE OF THE PROJECT: Leaf Disease Detection System

PRINCIPAL INVIGILATOR: Dr.A.Suphalakshmi

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ABSTRACT

The identification of the disease of a plant is a very important key to prevent a heavy loss in the quantity in the production of agricultural product. The symptoms can be observed on the parts of plants such as leaf, stem and fruits. The leaf shows the symptoms of changing colour, showing the spots on it. the identification of disease is done by manual observation and pathogen detection which can consume more time and makes costlier. The main aim of the project is to identify and classify the disease accurately from the leaf images. The steps required in the process are Pre-processing, Clustering, Segmentation, Extraction and Classification.

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RESEARCH PROJECT

ACADEMIC YEAR; 2018-2019

TITLE OF THE PROJECT: AUTOMATIC NUMBER PLATE RECOGNITION USING CONVOLUTION NEURAL NETWORK

PRINCIPAL INVIGILATOR: J.VELUMANI

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ABSTRACT

Automatic number plate recognition of vehicles has become very important for official identification purpose. Because of the unlimited increase of cars and transportation systems, it is impossible to fully manage and monitor the vehicles. Traffic control and vehicle owner identification have become a major problem in every country. Sometimes it is quite difficult to identify a vehicle owner who violates traffic rules and drives too fast. To monitor the traffic and track stolen cars, manage parking toll, manage red-light violation enforcement, border and customs checkpoints, there is a need to develop an Automatic Number Plate Recognition (ANPR) system as the solutions to identify high speed vehicles, to monitor traffic, to identify stolen vehicles to track vehicles at borders, custom checkpoints and at crowdy areas.

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RESEARCH PROJECT

ACADEMIC YEAR; 2018-2019

TITLE OF THE PROJECT: PRIVACY PRESERVING APPLICATION FOR SECURING DATA ON ANDROID DEVICE

PRINCIPAL INVIGILATOR: DR.D.BANUMATHY

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ABSTRACT

Smartphones are becoming most trusted computing devices. Every smart phone has internal and external storage for the user to store their data, people use them to store data like image, video, email, password, financial accounts and medical records. Since there is no protection to store data, it is a major problem for smartphone user because of limited security of the mobile. An application is proposed to increase security by using blow fish algorithm for encryption and decryption of data. Blow fish algorithm is used for symmetric key block cipher. In proposed system, the file is uploaded from the mobile by using user login with encryption algorithm for security purpose. The encrypted data is stored in cloud. Data can be decrypted by using symmetric key encryption. Without knowing the key data cannot be accessed by others people. It ensures the data security and privacy protection techniques used in the cloud computing. By using multiple authorities in cloud computing system the proposed scheme achieves anonymous cloud data access and fine-grained privilege control.

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RESEARCH PROJECT

ACADEMIC YEAR; 2018-2019

TITLE OF THE PROJECT: FLEET MANAGEMENT SYSTEM USING GPS

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ABSTRACT

An Intelligent Fleet Management System which incorporates the power of concurrent Global Positioning System (GPS) real-time positioning, frontend intelligent and web-based management software is proposed. The Fleet Management involves the administration of motor fleets such as cars, vans and trucks etc. The GPS is used in navigation systems. Fleet Management depends on GPS receiver which exists nowadays in many life applications. The GPS tracking system consists of portable tracked device attached to a person, fleet or any asset, and the tracking centre where the portable device's location should be monitored. Fleet safety is seen as important, not just for fleet operators, but as a strategic approach to improving the safety of the entire fleet. A map based interface provides the Fleet Management System and several experiments conducted in real traffic conditions confirm the effectiveness of the proposed system. Fleet navigation is one of the most important applications in the era of navigation which is mostly used by drivers. Therefore the efficiency of the maps given to the drivers has a great importance in the navigation system. Here the important issue is displaying the map on several various scales which are adopted by the users.

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RESEARCH PROJECT

ACADEMIC YEAR; 2018-2019

TITLE OF THE PROJECT: iNDEX BASED TRACKING FOR FINANCIAL DATA

PRINCIPAL INVIGILATOR: DR.N.MAGENDIRAN

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ABSTRACT

Index tracking is a popular passive portfolio management strategy that aims at constructing a portfolio that replicates or tracks the performance of a financial index. The tracking error can be minimized by purchasing all the assets of the index in appropriate amounts. However, to avoid small and illiquid positions and large transaction costs, it is desired that the tracking portfolio consists of a small number of assets. The optimal asset selection and capital allocation can be formulated as a combinatorial problem. The proposed method is efficient and fast index tracking that automatically perform asset selection and capital allocation under a set of general convex constraints. A special consideration is given to the case of the non convex holding constraints and to the downside risk tracking measure. Furthermore, it derive specialized with closed-form updates for particular sets of constraints. Numerical simulations show that the proposed algorithms match or outperform existing methods in terms of performance, while their running time is lower by many orders of magnitude.

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR; 2018-2019

TITLE OF THE PROJECT: BRAIN TUMOR DETECTION USING IMAGE PROCESSING

PRINCIPAL INVIGILATOR: DR.K.SELVI

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ABSTRACT

The field of medical imaging is gaining an importance with an increase in the demand for automated, reliable, fast and efficient diagnosis which can provide insight to the image better than human eyes. Brain tumor is the second leading cause for cancer-related deaths in men in the age of 20 to 39 and fifth leading cause for cancer among women in the same age group. Brain tumor are painful and may result in various diseases if, not cured properly. Diagnosis of tumor is very important part in its treatment. Identification of tumor plays an important role in the diagnosis of benign and malignant tumor. A prime reason behind an increase in the number of cancer patients worldwide is the ignorance towards treatment of a tumor in its early stages. Here the project describes the proposed k-means algorithm to detect and extract the image of brain tumour from the patients through MRI (Magnetic Resonance Imaging) scan images of the brain. This method incorporates noise removal functions, segmentation and morphological operations which are the basic concepts of image processing. Detection and extraction of image of tumour from MRI scan images of the brain is done by using MATLAB software and gives better results than CT scan. This process helps in identifying the size, shape and position of the tumor. It helps the medical staff as well as the patient to understand the seriousness of the tumor with the help of different color-labeling for different levels of elevation.

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RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT: ADVANCED CARDIOVASCULAR DISEASE DETECTION USING PATCH BASED METHOD.

PRINCIPAL INVIGILATOR: MR.M.SIVAGANESH

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ABSTRACT

Heavy smokers under screening with low-dose chest CT are affected by cardiovascular disease as much as by lung cancer. Low-dose chest CT scans acquired in screening enable quantification of atherosclerotic calcifications and thus enable identification of subjects at increased cardiovascular risk. It presents a method for automatic detection of coronary artery, thoracic aorta, and cardiac valve calcifications in low-dose chest CT using two consecutive convolutional neural networks. The coronary heart disease is one of the leading causes of death in human. Arterial Calculations, demonstrated in chest CT can be useful risk markers for the disease. It investigate the feasibility of automated and accurate detection for the risk assessment of coronary arteries artery disease. It develop a twelve-ply folding neural network to distinguish coronary disease and apply pixel by pixel, Patch-based method for AC detection. To judge that performance of the system, It conduct a reader study ground truth information using the consensus of a human expert radiologists. To rate the performance from 210 cases with both Free Response Receiver Operating Characteristic (FROC) Analysis and Analysis of calcium mass quantification. The FROC analysis shows that the deep learning approach reaches a recognition level similar to the human experts. The calcium mass quantification The analysis shows that the derived calcium mass is close to that Basic truth, with a linear regression between them a coefficient of determination of 96.24%. Taken together this the results suggest that deep learning can be used effectively develop an automated system for recognition then identify and evaluate patients with cardiovascular risks.

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RESEARCH PROJECT

ACADEMIC YEAR; 2018-2019

TITLE OF THE PROJECT: Image Pixel Based Graphical Authentication System.

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ABSTRACT

Several expressive Attribute Based Encryption (ABE) schemes are available where the decryption algorithm only requires a constant number of pairing computations. The security property of the ABE scheme with outsourced decryption guarantees an adversary not able to learn anything about the encrypted message; however, the scheme provides no guarantee on the correctness of the transformation done by the cloud server. Here, the system shows how to securely, efficiently and flexibly share data with others in cloud storage. A new public-key cryptosystem which produces constant-size cipher text is created, such that efficient delegation of decryption rights for any set of cipher texts are possible. The upside to it is that anyone can aggregate any set of secret keys and make them as compact as a single key, but encompassing the power of all the key for flexible choices of cipher text set in cloud storage. Also, the other encrypted files outside the set remain confidential. This compact aggregate key can be conveniently sent to others or be stored in a smart card with very limited secure storage. In this way, formal security analysis can be provided in the standard model.

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT: ENHANCED INTELLIGENT SECURITY CAMERA FOR FACE RECOGNITION.

PRINCIPAL INVIGILATOR: DR.A.SUPHALAKSHMI

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ABSTRACT

The ultimate aim in a large number of image processing application is to extract important features from image data, from which a description, interpretation, or understanding of the scene can be provided by the machine. Image processing can be defined as, the processing or altering an existing image in a desired manner. The surveillance security forms the most important part in human life. As it plays vital role to fulfill our safety aspects as burglary and theft which was always a problem. The mechanism to resolve the object or person detection tracking problem on the video security surveillance system, which is a smart surveillance. The icam is an intelligent video security surveillance system to recognize the individual who works in company or industry and get their details and display to the security officer or men in control using face recognition techniques and IOT based system for finding the unknown persons entering the restricted area and inform to the organization.

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RESEARCH PROJECT

ACADEMIC YEAR; 2018-2019

TITLE OF THE PROJECT: MAIL SECURITY USING MODIFIED RSA ALGORITHM.

PRINCIPAL INVIGILATOR: DR.D.BANUMATHY

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ABSTRACT

In recent years, there is a great thread for security in online communication. With new technologies, it became easy for the hackers to steal user information or message in a communication medium. Propose a mailer application to protect the content in the mail which have been sent by the user through online communication. It is a desktop application (like Google Talk), that performs all the activities in mail (sending and receiving mail with or without attachments) that can be performed in a web browser. The application performs encryption while sending and decryption while receiving. Modified RSA Algorithm is used in the encryption and decryption process. The encryption process will be made in the application and then the encrypted data will sent through the communication medium. Similarly, the decryption process will be carried out only in the mailer application. Mail are sent using this application will not be present in a readable format in Gmail Database as well as in the receiver inbox. Encrypted mail can be viewed only through this application. This application will completely protect user message from reading by others, even if a third party knows user mail id and password, the message will not be get read by others.

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR; 2018-2019

TITLE OF THE PROJECT: FUSO: FAST MULTI-PATH LOSS RECOVERY FOR DATA CENTRE NETWORKS.

PRINCIPAL INVIGILATOR: MR.M.MADHANACHITRAN

PI/CoPI

HoD

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ABSTRACT

To achieve low TCP flow completion time (FCT) in data centre networks (DCNs), it is critical and challenging to rapidly recover loss without adding extra congestion. Therefore, in this paper, we propose a novel loss recovery approach fast multi-path loss recovery (FUSO) that exploits multi-path diversity in DCN for transport loss recovery. In FUSO, when a multi-path transport sender suspects loss on one sub-flow, recovery packets are immediately sent over another sub-flow that is not or less lossy and has spare congestion window slots. FUSO is fast in that it does not need to wait for timeout on the lossy sub-flow, and it is cautious in that it does not violate the congestion control algorithm.

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR; 2018-2019

TITLE OF THE PROJECT: ONE TIME PASSWORD FOR BIOMETRIC SYSTEMS USING DISPOSABLE FEATURE TEMPLATE.

PRINCIPAL INVIGILATOR: MRS.M.REVATHI

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ABSTRACT

Bio-metric access control systems are becoming more common place in society. However, these systems are susceptible to replay attacks that are the packets of data would be captured that represents an individual's bio-metric. As traditional password based system have the ability to use a one time password scheme. It allows a unique password to be generated to authenticate the individual then it is disposed. Any capture password will not be effective. The camera captures the image which is connected to system. After capturing the image, the image is processed using database to find out whether to find out the user is authorized or an unauthorized person. If the person is authorized the OTP will send to the user via telegram messenger. Then, the user can login by entering the OTP number to see the bio medical records. The whole process is designed to run efficiently on an Open CV platform.

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR; 2018-2019

TITLE OF THE PROJECT: CLASSIFICATION OF SOIL DATA ANALYSIS FOR CROP RECOMMENDATION USING KNN CLASSIFIER.

PRINCIPAL INVIGILATOR: Mrs. R.DIVYA

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ABSTRACT

Agricultural research has strengthened the optimized economical profit, internationally and it is a very vast and important field to gain more benefits. However, it can be enhanced by the use of different technological resources, tool, and procedures. Nowadays, the term data mining is an interdisciplinary process of analyzing, processing and evaluating the real-world datasets and prediction on the basis of the findings. The case-based analysis provides empirical evidence that can use different data mining classification algorithms to classify the dataset of agricultural regions on the basis of soil properties. It analyzes the dataset such as temperature, humidity, season, rainfall, yield and recommends the best crop which gives us better yield. The most performing algorithm, KNN classifier, having powerful prediction, has accuracy to recommend the best crop for better yield. According to the analysis based on the soil, the adapted fertilizer is also suggested. KNN classifier is used for accurate classification and for content-based recommendation is utilized for the efficient suggestion. The process that attains maximum yield and profit compared to other methods.

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR; 2018-2019

TITLE OF THE PROJECT: EFFICIENT DATA ANALYTICAL FOR APPAREL INVENTORY SYSTEM.

PRINCIPAL INVIGILATOR: DR.N.MAGENDIRAN

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ABSTRACT

The project is entitled as "Efficient Data Analytical for Apparel Inventory System". Apparel inventory analysis is used to improve the Apparel company revenue. In existing system, the apparel companies are only managing Point of Sale (POS) application. The POS is used to manage the product purchase, sales, stock, customer and supplier. The company reports are only displays the data of table. The company product, customer, supplier, purchase and sales analysis will improve the company standard and revenue. The project helps to analysis the product sales and revenue. Clustering is one of the most common exploratory data analysis technique used to get an intuition about the structure of the data. It can be defined as the task of identifying subgroups in the data such that data points in the same subgroup (cluster) are very similar while data points in different clusters are very different. Clustering analysis can be done on the basis of features where try to find subgroups of samples based on features or on the basis of samples. K-Means algorithm is an iterative algorithm that tries to partition the dataset. It tries to make the inter-cluster data points as similar as possible while also keeping the clusters as different (far) as possible. It assigns data points to a cluster such that the sum of the squared distance between the data points and the cluster's centroid is at the minimum. The less variation have within clusters. The K-Mean data analytical algorithm used to analysis the product, purchase, sales, income and expense data set. The algorithm displays the result with the help of charts. The human can easily understand the infographic data. The application generates the infographic report for each module data set. The web application is developed by using the PHP as front end and MYSQL as backend.

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR; 2018-2019

TITLE OF THE PROJECT: OPTIMAL FEATURE SELECTION FOR DENGUE DISEASE PREDICTION.

PRINCIPAL INVIGILATOR: DR.S.SASIKALA

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ABSTRACT

Dengue is a life threatening disease prevalent in several developed as well as developing countries like India. This is a virus born disease caused by breeding of Aedes mosquito. Data mining is a well-known technique used by health organizations for classification of diseases such as dengue, diabetes and cancer in bioinformatics research. In the proposed work, the familiar data mining tool named WEKA 9.0 for the prediction of Dengue disease is applied. WEKA has an extensive collection of different machine learning and data mining algorithms. Conventional classifiers such as Naïve Bayes(NB),Support Vector Machine (SVM),J48 and Multi-Layer Perceptron (MLP) with tenfold cross validation is applied to evaluate data and performance is compared based on the accuracy, sensitivity, specificity, F-measure and its running time. Datasets that are available for dengue describe information about the patients suffering with dengue disease and without dengue disease along with their symptoms like, Fever Temperature, WBC, Platelets, Severe Headache, Vomiting, Metallic Taste, Joint Pain, Appetite, Diarrhea, Hemoglobin, and number of days suffered in different regions of city.

The proposed methodology includes three phases. The first phase is the Dengue data set creation form the real time samples collected from the various health centers. As a second phase the Correlation based Feature Selection (CFS) is applied to filter the redundant and irrelevant features present in the dataset. On applying CFS, the predicted optimal feature plays a vital role in prediction of the dengue disease. Finally, in the third phase, the selected optimal features are evaluated for its performance by using four different conventional classifiers.

The process of determining the prediction of disease and their prediction accuracy using different classification algorithm is set as main objective. As the focus of objective this work is carried to classify data and assist the medical experts in extracting useful information from data collection and easily identify a suitable symptoms as main cause for accurate prediction of disease. From the results it could be concluded that MLP and J48 are the best classifiers with the classified accuracy of 96.25 % as maximum accuracy for Dengue Disease Prediction.

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RESEARCH PROJECT

ACADEMIC YEAR; 2018-2019

TITLE OF THE PROJECT: DISEASE PREDICTION BY MACHINE LEARNING USING BIG DATA IN HEALTHCARE COMMUNITY.

PRINCIPAL INVIGILATOR: MR.J.KARTHICK

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ABSTRACT

Big data progress in biomedical and healthcare community, accurate study of medical data benefits early disease recognition, patient care and community services. When the quality of medical data is incomplete the exactness of study is reduced. Moreover, different regions exhibit unique appearances of certain regional diseases, which may results in weakening the prediction of disease outbreaks. In the proposed system, it provides machine learning algorithms for effective prediction of various disease occurrences in disease-frequent societies. It experiment the altered estimate models over real-life hospital data collected. To overcome the difficulty of incomplete data, it use a latent factor model to rebuild the missing data. Machine Learning Decision Tree algorithm and Map Reduce algorithm is used in structured and unstructured data that are collected from hospital. In Medical big data analytics none of the existing work focused on both data types. Compared to several typical estimate algorithms, the calculation exactness of our proposed algorithm which is faster than that of the CNN based Unimodal Disease Risk Prediction (CNN-UDRP) algorithm. The fast growing sector of big data analytics has started to play a key role in the evolution of healthcare practices and research. It has provided tools for gathering, managing, analyzing and assimilating large, structured and unstructured volumes of data produced by current healthcare systems. In proposed system optimized automatic learning algorithms used for the effective prediction of chronic disease epidemics in frequent disease community and also used a new Convolutional Neural Networks (CNN-MDRP) Multimodal Disease Risk Prediction algorithm for structured and unstructured hospital data.

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RESEARCH PROJECT

ACADEMIC YEAR; 2018-2019

TITLE OF THE PROJECT: EFFECTIVE PARKINSON DISEASE PREDICTION USING DATA MINING ANALYTICAL TOOLS.

PRINCIPAL INVIGILATOR: P.RENUKADEVI

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ABSTRACT

The prediction of Parkinson disease in early age has been challenging task among researchers, because the symptoms of disease came into existence in middle and late middle age. There are lots of symptoms that lead to parkinson disease. But this article focuses on the speech articulation difficulty symptoms of PD affected people and try to formulate the model on the behalf of three data mining methods. These three different domains of data mining i.e., from tree classifier, statistical classifier, support vector machine classifier. Performance of these three classifiers is measured with three performance matrices i.e., accuracy, sensitivity, and specificity. Hence, the main task of this article is to find out which model identified the parkinson disease affected people more accurately.

The method proposed in this study has been evaluated by public datasets from UCI Machine Learning Repository which have input and output parameters for PD diagnosis. In addition, compared to the big healthcare data, the nature of the data in these datasets is not complex. In addition, in case of big healthcare data which can be complex datasets with unique characteristics, the future studies need to consider this issue in the development of new method sin order to overcome the challenges of data processing time and take advantage of big data. Bayesian classification, as big healthcare data include multi-spectral, heterogeneous, imprecise and incomplete observations (e.g., diagnosis) which are derived from different sources, therefore new methods needed and relying solely on conventional machine learning techniques may include some shortcomings in predicting the disease.

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RESEARCH PROJECT

ACADEMIC YEAR; 2018-2019

TITLE OF THE PROJECT: ARTIFICIAL RIPENED FRUITS DETECTION SYSTEM USING IMAGE PROCESSING TECHNIQUE.

PRINCIPAL INVIGILATOR: S.SATHAPPAN

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ABSTRACT

An efficient Image Processing Technique is used to detect the artificially ripened mangoes. Mango is an important fruit crop across the world. Nowadays to ripe the mangoes, traders use many artificial methods (using chemicals). One of the artificial methods used is adding of Calcium Carbide. CaC2 contains the traces of arsenic and phosphorous which is the carcinogenic agent. The threshold-based segmentation is used to segment the image from the bunch of mangoes and some discriminatory features are extracted in frequency domain using HAAR filter.

Features are selected up to the third level of decomposition in wavelet domain and analysed for discriminatory behaviour. The variation in the features of the images is related to the difference between artificially ripened and naturally ripened mangoes. These statistical features are then analysed and used for identification of artificially ripened sample in these samples using support vector machine classifier. The experimental results indicate that the proposed method is efficient for identification of artificially ripened mangoes.

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR; 2018-2019

TITLE OF THE PROJECT: BLOCK CHAIN BASED SMART CONSTRUCT FOR FARMING

PRINCIPAL INVIGILATOR: J.KARTHICK

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ABSTRACT

Blockchain is an approach to build decentralized ledger application and it provides high transparency and confidence to the distributed data. In this proposed system, a blockchain based smart contract system "Green Chain" is designed and the prototype is developed to demonstrate how such a system can improve transparency and automate interactions in agriculture. This system allows the farmers to do pool farming and can buy/sale crops, farming equipment, pesticides, etc., without third-party intervention. Green chain is implemented with solidity code to manage contracts and money transaction between the ledgers. It is a truffle framework application which is built on the Ethereum platform. The objective of this project is to give a clear and sustainable way to the source of our food.

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR; 2018-2019

TITLE OF THE PROJECT: BREAST CANCER IDENTIFICATION USING NEURAL NETWORK

PRINCIPAL INVIGILATOR: J.VELUMANI

CO-PRINCIPAL INVIGILATOR: DR.S.K.ARUNA

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ABSTRACT

Breast cancer is the most common cancer in women and one of the leading cause for death among them. In the existing systems, Mammogram is the widely accepted imaging method used for screening breast cancer. The Computer aided detection (CAD) systems intend to provide assistance to the radiologists in detecting breast cancer. The detection of masses by CAD system is prone to a high rate of false positives, leading to unnecessary biopsies. Radiologists often use bilateral analysis ie, symmetry between left and right breast to improve detection performance. In this work, a computer aided bilateral image analysis based on eigen region of interest (ROI) approach is used in order to reduce the false positive rate. Computer aided detection (CAD) systems based on Eigen ROI approach improves the sensitivity in detection of the abnormalities and serve as decision support to the radiologist.

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR; 2018-2019

TITLE OF THE PROJECT: IMAGE ENHANCEMENT AND LEAF DISEASE DETECTION.

PRINCIPAL INVIGILATOR: Mrs.S.LAVANYA

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ABSTRACT

The aim of the project is to develop, implement and evaluate an imaging software-based solution for the automatic detection and classification of plant leaf diseases. This will be present as a fast, automatic, cost effective and accurate image processing solution. This solution consists of four main phases. They are, the digital images are captured from the field or environment with digital cameras. The noise is removed by applying image filters. Image segmentation is used for feature extraction. Using the multi SVM classification method, the affected region is classified as affected are not affected. With the proposed segmentation and classification techniques the expected diseases prediction accuracy is 98%.

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR; 2018-2019

TITLE OF THE PROJECT: DUPLICATE LOGO DETECTION AND TEXT EXTRACTION

PRINCIPAL INVIGILATOR: R.DIVYA

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ABSTRACT

Smartphones are becoming most trusted computing devices. Every smart phone has internal and external storage for the user to store their data, people use them to store data like image, video, email, password, financial accounts and medical records. Since there is no protection to store data, it is a major problem for smartphone user because of limited security of the mobile. An application is proposed to increase security by using blow fish algorithm for encryption and decryption of data. Blow fish algorithm is used for symmetric key block cipher. In proposed system, the file is uploaded from the mobile by using user login with encryption algorithm for security purpose. The encrypted data is stored in cloud. Data can be decrypted by using symmetric key encryption. Without knowing the key data cannot be accessed by others people. It ensures the data security and privacy protection techniques used in the cloud computing. By using multiple authorities in cloud computing system the proposed scheme achieves anonymous cloud data access and fine-grained privilege control.

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR; 2018-2019

TITLE OF THE PROJECT: 3D ADVENTURE GAME USING UNITY.

PRINCIPAL INVIGILATOR: M.REVATHI

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ABSTRACT

3D game with a First Person Shooting as well as Third Person Shooting mode available in which the player has to search the enemies on an amazing terrain map and kill the enemies using own wit and action. Project mainly deals with the development of a 3d game application with the Unity game engine for windows OS. In this game there are a few different kinds of enemies on the terrain and they possess many different kinds of Artificial Intelligence (AI) movements such as: 8 direction movement that helps player to move in directions like north-east, south-west, etc. rather than just north or west or south, Auto aiming that comes into play when player is in the line of sight of the enemy, Bullet/spell/Projectile shooting created using a muzzle flash that starts firing at the player when it comes in the range fixed by us, Wind which uses particle system to create wind and the force effects everything around it like blades of grass, leaf falling from the tree, hair of the player, etc. The player has to search for clues, solve them, kill enemies and explore places to gain extraordinary power. The video game market is not just serviced for PC and Xbox. It is adaptive to mobile platforms like IOS, Android and Windows Phone.

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT: SCADA SYSTEM FOR MONITORING WATER SUPPLY NETWORKS IN PAPER INDUSTRY

PRINCIPAL INVIGILATOR : Mr.S.LOGANATHAN

CO-PRINCIPAL INVIGILATOR: Mr. S.R.THIRUVASAGAM

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ABSTRACT

In this project we are maintain the boiler drum level, feed water flow and outlet steam flow from the boiler using cascade controller by applying a bias calculation and a compensated steam flow and the design have been stimulated using Programmable Logic Controller (PLC) and interfaced with SCADA (Supervisory Control and Data Acquisition). The automation is further enhanced by constant monitoring using SCADA screen which is connected to the PLC by means of communication cable. By means of tag values set to various variable in SCADA the entire process is controlled as required. At the automated power plant, the boiler is controlled by Variable Frequency Drive (VFD) to put in action the required processes to be carried out at the boiler. Thus the entire cycle is carried out as a paper and at various stages each phase is detailed out. This paper has proved to be very efficient practically as the need for automation grows day by day.

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT: COLLISION DETECTION AND AVOIDANCE OF TRAIN ACCIDENT USING ULTRASONIC SENSOR

PRINCIPAL INVIGILATOR : Dr.R.ARANGASAMY

CO-PRINCIPAL INVIGILATOR: Mr. S.VIMALNATH

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ABSTRACT

Railway is the most popular and friendly transportation system of the largest part of the cities in the world. The development in railway sector resulted in an increase in railway traffic. Due to absence of technology the number of accidents in railway has increased. This project discusses on how to prevent these accidents. In this project, the proposed system uses Ultrasonic sensor with special Embedded system which aim at alerting the loco pilot to prevent the collision caused due to Insecure level crossing, obstacles. The proposed system makes use of the Ultrasonic sensor for sensing the obstacle on the railway track, Arduino board and Servo motor. The proposed system aims on maintaining the safe distance of 1km between the trains and object collision avoidance.

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT: DIABETIC FOOT PLANTAR PRESSURE MEASUREMENT SYSTEM

PRINCIPAL INVIGILATOR : Dr.A.S.KANDASAMY

CO-PRINCIPAL INVIGILATOR: Mrs.P.KRISHNASUDHA

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ABSTRACT

Diabetic retinopathy is the cause for blindness in the human society. In this project primarily aims on the technique used to identify the initial diabetic occurrence in human being using the digital image processing .this project has listed different automated systems that distinguish normal and abnormal structure on the optic disk of an eye image. If any changes in blood vessels patterns in the retina we can easily identified the diabetic occurrence this technique used in automatic retinopathy and classify the exudates, hemorrhages. This project deals with identifying retinal disease by image processing technique using morphological algorithms in OCT images. Blood vessel detection in retinal image will help for identification of diseases and also for human reorganisation . Here morphological algorithm is used for detecting glaucoma with more accuracy. It provides good accuracy, better contrast enhancement, perfect retinal vessel and perform detection.

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT: FIBER OPTIC GAS SENSOR BASED CEO2/MWCNT NANO COMPOSITE USING ONE STEP MICROWAVE IRRADIATION ROUTE

PRINCIPAL INVIGILATOR : Dr.S.VIJAYAKUMAR

CO-PRINCIPAL INVIGILATOR: Mr.K.R.GANESHKUMAR

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ABSTRACT

In this project, we recommend an android based saline and oxygen control system to control the saline flow rate for the quick recovery of patients. Almost in all hospitals, a nurse is responsible for monitoring the saline fluid level and the oxygen level continuously. But unfortunately, during most of the time the nurse may forgets to change the saline bottle at the correct time. It may lead to several problems to the patients such as backflow of blood, blood loss, drop oxygen level etc.The design and execution of saline and oxygen flow controlling method employs a liquid IR sensor, heart beat sensor, temperature sensor and pressure sensor. The Arduino Mega (2560) platform has been used as controlling units for essential control along with a 3x4 matrix keypad which helps in setting the saline flow rate. The LCD display is used to indicate the saline flow rate and oxygen rate. Android phone is employed to control and monitor the saline flow rate through the SMS, it also monitors the heart beat rate and body temperature. Also, we are using a push switches. These switches can be used in either increasing or decreasing the saline flow and also pressure. Relay also used. If any process goes down, it will indicate through an alarm. Here, the GSM based GPRS module is used. With the help of GPRS based IoT technology, the status of the patient will send through an android application. The main advantage of our project is a single nurse can monitor more than ten patients at a time.

PAAVAI ENGINEERING COLLEGE,

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT: MEASURING THE ACCURACY OF A PERSON IMAGE IN MULTIPLE DATABASE

PRINCIPAL INVIGILATOR : Dr.T.LOGANAYAGI

CO-PRINCIPAL INVIGILATOR: Mrs.R.BOOMIDEVI

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ABSTRACT

The principle objective of image enhancement is to process an image so that result is more suitable than original image for specific application. Digital image enhancement techniques provide a multitude of choice for improving the visual quality of images. A frequency domain smoothing and sharpening technique is proposed and its impact is assessed to beneficially enhance mammogram images. This technique aims to gain the advantages of enhance and sharpening process that aims to highlight the sudden changes in the image intensity, it is usually applied to remove random noises from digital images. The selection of parameters is almost invariant of the type of background tissues and severity of the abnormality, giving significantly improved results even for denser mammographic images. The proposed technique is tested breast X-ray mammograms. The simulated results show that the high potential to advantageously enhance the image contrast hence giving extra aid to radiologists to detect and classify mammogram of breast cancer.

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT: WIRELESS COMMUNICATION BASED BIOMETRIC CHECKED SYSTEM

PRINCIPAL INVIGILATOR : Dr.S.KUMARGANESH

CO-PRINCIPAL INVIGILATOR: Mrs.K.BRINDHA

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ABSTRACT

The design and implementation of home automation system that can be control via Bluetooth technology through voice command. The design is based on Arduino Uno. The important objective of this paper is to reduce the human effort, cost effective and provide more secure system. In this system smartphone is use to enable the authorized user to operate all home appliances. The project creates a user friendly interface for the smartphones that allow a user to communicate with the Arduino. The advantage of using voice as an interfacing medium would help people with varied disabilities. The main attraction of any automated system is reducing human labour, effort and time. Home automation aims at automating the human lives. Activating the home appliances without conventional switch but by using a smart phone is known as home automation. Upcoming technology is natural Language processing which enables us to command and control things with our voice. In modern era more importance is put on wireless technology. Due to wired networks are messy and complicated. These wireless technologies have great impact on human life in a positive manner and human development speed has increased.

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT: CARDLESS ATM BANKING WITH OTP TECHNIQUE

PRINCIPAL INVIGILATOR : Dr.R.PUSHPAVALLI

CO-PRINCIPAL INVIGILATOR: Mr.G.THIRUPATHI

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ABSTRACT

The growing direct or spoofing fraudulent attacks of thieves has motivated us to focus our prime concern on the security over money transaction. The need of money can only be satisfied when you are carrying money with you. That also increases the risk of getting robed. Bank is a safest place to keep money. Bank provides Automated teller machine (ATM) which can provide money anywhere you want. ATM is an easy way to get money, you just need to insert card and password and you just got the money. But what if someone steals your card and somehow he/she will know your password, it will grant him/her full access to your money. That raises the question on present security and demands something new in the system that can provide second level of security. The self-governing ATM host has a right to use any bank and there is no security layer implemented in the ATM card except pin number. We need to monitor the location of the ATM usage, time taken for the user to access the ATM machine, sequence of events processed by the user and expected amount of withdrawal by the user. All these four factors are verified for the authentication purpose of the user along with password. The method proposed in this paper focuses on how the money transaction in an ATM machine will be secured by providing personal identification by analyzing biometrics like fingerprints and iris patterns which are known for their steadiness and diversity. In this system we are entering the account number, after which OTP will be received in registered mobile number. By using OTP, we can access our ATM account through an acknowledgement.

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT: DESIGN LOW POWER PULSE GENERATE FLIP FLOP DESIGN BASED ON A SIGNAL FEED THROUGH SCHEME

PRINCIPAL INVIGILATOR : Mrs. L.PUNITHA

CO-PRINCIPAL INVIGILATOR: MR. G.DHANASEKARAN

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ABSTRACT

Low power has emerged as a principal theme in today's electronics industry. Over the past decade, the power consumption of VLSI chips has constantly been increasing. In Integrated Circuit, there is a need of data to communicate among logic gates using flip-flop (FF). In a FF, a huge portion of the on-chip power is consumed by clock systems, which consists of timing elements such as FFs, latches and clock distribution network. These components consume 30% to 60% of the total power in a system. So to reduce Power dissipation, various conventional methods are implemented using TSPC but there is a discharging path problem. To reduce long discharging, various methods have been implemented. The existing signal feed through the scheme is implemented to reduce discharging problem, but pitfalls to a new pass transistor because of its direct charging and discharging. Another drawback is more number of transistors used and power consumption is also high. The proposed Low Power Pulse Triggered Flip-Flop Design with Conditional Pulse Enhanced Technique overcomes the long discharging path problem. This method is composed of pass transistor logic (PTL) based AND gate and an extra pass transistor used at clock system. The results shown based on post layout simulation using Tanner Software CMOS 180nm technology. The proposed method improves power consumption and delay.

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT: ANDROID BASED GREENHOUSE MONITARY AND CONTROLLING SYSTEM

PRINCIPAL INVIGILATOR : Mrs.C.VANAJA

CO-PRINCIPAL INVIGILATOR: Ms. N.JEEVITHA

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ABSTRACT

In an agricultural country like India, greenhouses form an important aspect of agricultural and horticulture sectors. In greenhouses, plants are grown under favourable climatic conditions for its production and growth. Thus, monitoring and control of greenhouse environment are necessary for the production and management of greenhouses. Smart Greenhouse android is developed to monitoring and controlling the microclimatic environment inside a greenhouse. From the greenhouse easily get soil moisture, humidity and temperature sensor value to android app, according to sensors values and we set predefined threshold values for each sensor, Depending on sensor reading we are going to controlling using Water spray, cooling fan, roof top and focus light and just press the button in android app. We can control make on/off motors and it also has data sheet of all Horticulture plantation and season wise precaution material for monitoring and controlling. This project is designed to monitor and control the indoor humidity and weather conditions affecting the plants using embedded system and Android mobile phone. The Android phone is connected to a central server which then connects to microcontroller and humidity sensor via serial communication. Thus the sensor records and manages the required weather conditions proved to be appropriate for plant growth. In this project we use a GSM module to connect microcontroller &mobile phone. We use five types of sensors to monitor the growth of the plants. The sensors are temperature, moisture, LDR, humidity, pH sensor. The sensor outputs are record & manage the require weather condition proved to be appropriate for plant growth.

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT: MIXED REALITY FOR THE CONSTRUCTION OF PERIODIC TABLE

PRINCIPAL INVIGILATOR : Mrs.R.MOHANAPRIYA

CO-PRINCIPAL INVIGILATOR: Ms.M.SIVARANJANI

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ABSTRACT

In our project, we propose a technique to control the basic computer operations without any keyboard or mouse by hand gestures using PYTHON 2.7. The proposed algorithm recognizes a set of specific hand gestures, namely play, stop, forward, reverse and increase/decrease volume, based on hand untouched interaction with computer. An Ultrasonic sensor is used to sense the hand movements of the user. Hand gesture is a very natural form of human interaction and can be used effectively in human computer interaction The goal for the project was to develop a new type of Human Computer Interaction system that subdues the problems that users have been facing with the current system. The project is implemented on a Linux system but could be implemented on a windows system by downloading some modules for python. Our algorithm is based on three phases of operation, namely Image acquisition, segmentation and recognition. This algorithm can be used with various display systems like TV, Laptop, Computer desktop, and tablet for fast operation. This project enables the HCI (human – computer interaction) in our day to day activities. The application is capable of the gesture recognition in real-time. There are some limitations, which we still have to be overcome in future.

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT: ARDUINO PROCESSING GLOUSE USING VIRTUAL REALITY

PRINCIPAL INVIGILATOR : Mr.A.KUMARAVEL

CO-PRINCIPAL INVIGILATOR: Ms.K.SARANYA

HoD

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ABSTRACT

A new learning method using Virtual Reality [VR] is proposed with the help of UNITY software, to provide a better understanding for the problem in educational sector with the chosen part of the periodic table to control, combine and interact, helping the students to improve and experience in a meaningful way, academically. Virtual Reality [VR] provides an opportunity for constructional learning (i.e.) allowing students construct their own knowledge from meaningful experience. Low-performing students can also improve academically more than those learning in a traditional way.

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT: IOT BASED TOLLBOOTH MANAGEMENT SYSTEM

PRINCIPAL INVIGILATOR : Dr.V.SAKTHIVEL

CO-PRINCIPAL INVIGILATOR: Mr.G.KUMARAN

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ABSTRACT

The Smart Sensing Hardware - Sensor sends data through an Access Point through the firewall to the Cloud. From the Cloud, it is accessible by the user from any smart device. Ubiquitous sensing enabled by Wireless Sensor Network (WSN) technologies covers across many areas. This offers the ability to control and monitoring the electrical and electronics appliances. The proliferation of these devices in a communicating and actuating network creates the Internet of Things (IoT), wherein, sensors and actuators blend seamlessly with the environment around us, and the information is shared across platforms in order to develop a common operating picture (COP). This project presents a Cloud centric vision for worldwide implementation of Internet of Things. A Cloud implementation using Azure, which is based on interaction of private and public Clouds is presented. We conclude our IoT vision by expanding on the need for convergence of WSN, the Internet and distributed computing directed at technological research community (cloud).

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT: INTELLIGENT HUMAN SECURITY USING HUMAN GAS LEAKAGE DETECTION SYSTEM

PRINCIPAL INVIGILATOR : Mrs.E.SANGEETHA

CO-PRINCIPAL INVIGILATOR: Ms.R.VETRIKANI

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ABSTRACT

The design and implementation of home automation system that can be control via Bluetooth technology through voice command. The design is based on Arduino Uno. The important objective of this paper is to reduce the human effort, cost effective and provide more secure system. In this system smartphone is use to enable the authorized user to operate all home appliances. The project creates a user friendly interface for the smartphones that allow a user to communicate with the Arduino. The advantage of using voice as an interfacing medium would help people with varied disabilities.The main attraction of any automated system is reducing human labour, effort and time. Home automation aims at automating the human lives. Activating the home appliances without conventional switch but by using a smart phone is known as home automation. Upcoming technology is natural Language processing which enables us to command and control things with our voice. In modern era more importance is put on wireless technology. Due to wired networks are messy and complicated. These wireless technologies have great impact on human life in a positive manner and human development speed has increased.

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT: ADVANCED MOBILE PHONE SIGNALJAMMER FOR GSM AND 4G USING FPGA

PRINCIPAL INVIGILATOR : Mr.J.ASOKAN

CO-PRINCIPAL INVIGILATOR: Ms.A.DHIVYA

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ABSTRACT

Low power has emerged as a principal theme in today's electronics industry. Over the past decade, the power consumption of VLSI chips has constantly been increasing. In Integrated Circuit, there is a need of data to communicate among logic gates using flip-flop (FF). In a FF, a huge portion of the on-chip power is consumed by clock systems, which consists of timing elements such as FFs, latches and clock distribution network. These components consume 30% to 60% of the total power in a system. So to reduce Power dissipation, various conventional methods are implemented using TSPC but there is a discharging path problem. To reduce long discharging, various methods have been implemented. The existing signal feed through the scheme is implemented to reduce discharging problem, but pitfalls to a new pass transistor because of its direct charging and discharging. Another drawback is more number of transistors used and power consumption is also high. The proposed Low Power Pulse Triggered Flip-Flop Design with Conditional Pulse Enhanced Technique overcomes the long discharging path problem. This method is composed of pass transistor logic (PTL) based AND gate and an extra pass transistor used at clock system. The results shown based on post layout simulation using Tanner Software CMOS 180nm technology. The proposed method improves power consumption and delay.

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT: SIXTH SENSE TECHNOLOGY USING HAND GESTURES

PRINCIPAL INVIGILATOR : Mrs.M.SUDHA

CO-PRINCIPAL INVIGILATOR: Mrs.S.ASWINI

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ABSTRACT

In our project, we propose a technique to control the basic computer operations without any keyboard or mouse by hand gestures using PYTHON 2.7. The proposed algorithm recognizes a set of specific hand gestures, namely play, stop, forward, reverse and increase/decrease volume, based on hand untouched interaction with computer. An Ultrasonic sensor is used to sense the hand movements of the user. Hand gesture is a very natural form of human interaction and can be used effectively in human computer interaction The goal for the project was to develop a new type of Human Computer Interaction system that subdues the problems that users have been facing with the current system. The project is implemented on a Linux system but could be implemented on a windows system by downloading some modules for python. Our algorithm is based on three phases of operation, namely Image acquisition, segmentation and recognition. This algorithm can be used with various display systems like TV, Laptop, Computer desktop, and tablet for fast operation. This project enables the HCI (human – computer interaction) in our day to day activities. The application is capable of the gesture recognition in real-time. There are some limitations, which we still have to be overcome in future.

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT: DESIGN OF OPTICAL NANO ANTENNAS FOR FM BROADCASTING GUIDE.

PRINCIPAL INVIGILATOR : Mrs.A.SAMUNDEESWARI

CO-PRINCIPAL INVIGILATOR: V.JOEL EBNEZER

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ABSTRACT

Solid state semiconductor materials offer considerable advantages in comparison to other gas sensing methods. Semiconductor sensors are inexpensive to produce, easy to miniaturize, rugged, reliable and can be designed to operate over a range of conditions including high temperatures. Recently gas sensor using optical fibers have become very attractive as they are simple, small and low cost. Gas detection and monitoring could be done at inaccessible and explosive environments. The intensity transmitted light through an optical fiber is very sensitive to optical properties of a cladding and clad modification technique is widely used in the fiber optic based gas sensor. In this a small portion of cladding is removed and replaced with gas materials whose optical property change during the gas.

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT: AN AUTOMATIC DROWSINESS ALERT SYSTEM FOR DRIVERS BY USING GSM WITH ARDUINO

PRINCIPAL INVIGILATOR : Ms.K.SARANYA

CO-PRINCIPAL INVIGILATOR: Mr.N.HABEEP

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ABSTRACT

In our project Arduino based automatic vehicle engine locking with location tracking system. We hear lot of accidents due to drunken driving. Drunken drivers will not be in stable condition and so rash driving causes inconvenience for other road users. In this project we are developing an Automatic engine lock system.We are introducing a system that will detect drunken driver through alcoholic sensor through fitted on the steering .The controller keeps looking for the output from these sensors. If there are any traces of alcohol above the set limit, then the system will lock the engine. GPS and GSM are used to track the location and the system sends an alert to the owner on his mobile phone or mail as a short message (SMS). By implementing this system in vehicle, a safe journey is possible which would decrease the injuries during accident also reduce the accident rate. Additional features such as mobile call detector and vibration sensor are also included. Mobile call detector is used to detect the incoming and outgoing calls, SMS and video, etc.., and vibration sensor is used for the indication of accident to the police/ambulance.

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT: SMART CONTROLLING USING IOT

PRINCIPAL INVIGILATOR : Mr.S.LOGANATHAN

CO-PRINCIPAL INVIGILATOR: Mr. S.SANTHOSH

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ABSTRACT

In this project, we recommend an android based saline and oxygen control system to control the saline flow rate for the quick recovery of patients. Almost in all hospitals, a nurse is responsible for monitoring the saline fluid level and the oxygen level continuously. But unfortunately, during most of the time the nurse mayforgets to change the saline bottle at the correct time. It may lead to several problems to the patients such as backflow of blood, blood loss, drop oxygen level etc.The design and execution of saline and oxygen flow controlling method employs a liquid IR sensor, heart beat sensor, temperature sensor and pressure sensor. The Arduino Mega (2560) platform has been used as controlling units for essential control along with a 3x4 matrix keypad which helps in setting the saline flow rate. The LCD display is used to indicate the saline flow rate and oxygen rate. Android phone is employed to control and monitor the saline flow rate through the SMS, italso monitors the heart beat rate and body temperature.Also, we are using a push switches. These switches can be used in either increasing or decreasing the saline flow and also pressure. Relay also used. If any process goes down, it will indicate through an alarm. Here, the GSM based GPRS module is used. With the help of GPRS based IoT technology, the status of the patientwill send through an android application. The main advantage of our project is a single nurse can monitor more than ten patients at a time.

PAAVAI ENGINEERING COLLEGE,
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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT: PERFORMANCE ANALYSIS OF 6*10 SOLAR PANEL WITH AND WITHOUT DUST ACCUMULATION USING IOT

PRINCIPAL INVESTIGATOR: Dr.B.MURALIBABU

HoD

Dr.G.BALAJI,M.E.,Ph.D.,
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ABSTRACT

Solar energy has drawn worldwide attention and is playing an essential role in providing clean and sustainable energy. The accumulation of dust from the outdoor environment is natural. The dust formation reduces the source of solar energy due to the pollutants such as by dirt, industrial residues, and bird droppings, and may cause deterioration in the solar panel performance characteristics. Also, there is a possibility of damaging the panel. So, it is very much necessary to maintain the PV panel cleanly, for the perpendicular of sun's rays to an absorbing surface. The presence of dust, on the absorbing surface, can't able to collect the UV rays effectively. Thus, the dust presence will drop the efficiency of the photovoltaic panel, it is not desirable.

The proposed work is to analyze the performance of the PV panel with and without accumulation of dust. The efficiency of the PV panel tends to be increased by removing off the dust particles on the surface of the panel, which is done with the help of a cleaning system. The cleaning system is mainly based on the rotating wiper, which can easily wipe out the dust substance. An IOT system is interfaced with BLINK mobile application, where the command is sent to the wiper motor via the Wi-Fi module and L29 driver to rotate the shaft of the wiper. Thus the reflection of UV ray due to those particles present in the panel can be reduced.

The scrutinizing was carried out using two solar panels of each size 47*1.4*21.3 inches, with and without dust particles. It was found from the study that the accumulation of dust can nearly reduce solar panel efficiency by 30%. The mechanical setup doesn't affect the solar panel structure, even it can be applied for the existing panel setup. As an outcome, the efficiency of the PV array tends to improved has been clearly examined.

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT: CHARGING STATION USING SOLAR ENERGY

PRINCIPAL INVESTIGATOR: Dr.G.BALAJI

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Dr.G. Balaji
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ABSTRACT

The main aim of this project is to generate power from the renewable source such as Solar Power in order to charge the solar vehicles such as e-car and e-bike. The solar radiation falls on the solar panel which converts the solar energy to electric energy. The generated solar power is a fluctuating Direct Current (DC) voltage. In order to get constant DC power an Buck Boost Converter is being used which makes the fluctuating DC to constant DC.

This type of charging station is being used in the highways as the demand for the fuel is being increased nowadays. The charging station is becoming most used for the electric vehicles which are being coming to market nowadays. The batteries which are being used here is to store the generated power to use for the future need.

The project is also used to charge the electronic equipments by converting the DC supply to Alternating Current (AC) supply by the use of an inverter. The inverter converts the DC supply to AC supply to be used for the normal operations of the other electronic equipments. The amount of radiation that falls on the solar panel is being measured and an average value is being calculated, so the voltage produced by the solar panels can be found. The generation of the solar voltage gets varied as the climate and season gets varied.

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT: DC GEAR MOTOR USED FOOD PROCESSING SYSTEM

PRINCIPAL INVESTIGATOR: Dr.G.BALAJI

HoD

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ABSTRACT

Finger millet, popularly known as ragi flour is an annual herbaceous plant widely grown as a cereal crop in the arid and semiarid areas in Africa and Asia. Ragi Mudde or Ragi Sangati is a wholesome meal in the state of Karnataka and the Rayalaseema region in Andhra Pradesh. In this project, a Ragi Mudde Machine is proposed, where the finger millet and the water are boiled inside a stainless steel using a burner and then the dough is made by continuous stirring of the mixture by using wooden stick. Thus obtained mixture is forced out automatically through a pipe via pusher plates and then formed into round shape using a bowl powered manually.

A mudde (type of food made out of flour of Ragi, Maize, Jowar, and other millets) making machine is designed and fabricated. The specified machine is capable of producing required kg of mudde in an hour. This machine is useful for domestic usage and also for small home. Mudde, a lump of boiled; perfectly kneaded food made out of flours of Ragi, Jowar, Rice and other millets is very nutritional. The conventional method of preparation of mudde is laborious and time consuming.

To ease the preparation of mudde and to save time, a simple machine is designed and fabricated. This machine mainly consists of a stainless steel tube which houses a stainless steel screw conveyor. The stainless steel tube assembly rests on a mild steel stand. The other components of the machine are; feeder (hopper), handle, exit cone, Plummer block bearings, cup, parting plate. A gas burner or induction stove are used to supply heat to the stainless steel . In this paper, preparation of only Ragi mudde is described.

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT: SMART LPG GAS DETECTORS

PRINCIPAL INVESTIGATOR: Dr.A.RATHINAM

HoD

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ABSTRACT

Safety plays a major role in today's world and it is necessary that good safety systems are to be implemented in places of education and work. This work modifies the existing safety model installed in industries and this system also be used in homes and offices. The main objective of the work is designing microcontroller based toxic gas detecting and alerting system. The hazardous gases like LPG and propane were sensed . In recent years there has been rapid development in technology which has made human life easier in several aspects. LPG is a need of every household but many accidents happen every year due to domestic gas leakage, so it should be used carefully. If these gases exceed the normal level then an exhausted fan is generated to run the gas immediately and also an alert message is sent to the authorized person through the GSM and used Node MCU act as control of every unit .By following the windows will open at the initial condition. we use rectifier for converting AC current into DC current which is used by the component.

The program is installed in the board to set as default the process is to run as continuously . To prevent from fire the main supply will cut off .Due to gas leakage there sare many accident nowadays hence this method is useful for the automatic prevention .The advantage of this automated detection and preventing system over the manual method is that it offers quick response time and accurate detection of an emergency and in turn leading faster diffusion of the critical situation.

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT: POWER GENERATION BY USING GYM CYCLE

PRINCIPAL INVESTIGATOR: T.NANDHAGOPAL

CO-PRINCIPAL INVESTIGATOR: Dr. M.RAVICHANDRABABU

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ABSTRACT

In order to reduce the usage of fossil fuels and to increase the usage of renewable energy. The utilization of fossil fuels as the energy source causes environment degradation since the fossil fuel are not completely utilized there remains certain amount of renewable energy sources could be based on exercise equipment. The energy expended in a typical workout at the gym is usually wasted in the mechanics of the equipment

Human power is a power produced from gym exercise. Human powers can another source of energy. The intention of the project is to design a system based on renewable energy source. A generator used here is the motor which powered by a gym bicycle. The resulting direct current is converted into different usable DC voltage levels. By converting this DC voltage into AC levels, it will useful to light bulb, laptop and other appliances this will reduce energy demand.

This project harnesses the mechanical energy of the machine and converts it into an electrical energy using a generator based system. Here the exercise equipment will be attached to a permanent magnet dc generator. This creates a DC voltage which will be fed into a circuit and then sent to a battery where it can be stored for future use. The stored energy can be utilized by sending it to the inverter which converts a DC voltage into an AC voltage at the desired voltage using an appropriate transformer, switching and control circuits. This report presents all applicable information regarding the design, developement and the final product.

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RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT: AGRICULTURE MONITORING SYSTEM USING IOT

PRINCIPAL INVESTIGATOR: S.RATHINAVEL

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ABSTRACT

Monitoring and control of greenhouse environment play a key role in greenhouse production and management. To monitor the greenhouse environment parameters effectively, it is demand to design a control system. There we can control the activities through ARDUINO and send to controller back which is in greenhouse environment. There it will activate the actuator according to our wish and set threshold valves.

The main objective is to design a simple, easy to install, microcontroller based circuit to monitor and record the values of temperature, humidity, soil moisture and solar radiation of the natural environment that are continuously modified and controlled in order optimize them to achieve maximum plant growth at different stages and yield.

There are different microcontroller are available which can communicate with variety of sensors process efficiently inside a greenhouse by actuating a cooler, fogger, and dripper respectively according to the necessary condition of the crops.

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RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT: SPEED CONTROL OF PMSM BY USING ARDUINO

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ABSTRACT

Permanent magnet (PM) synchronous motors are designed to be more powerful which as designed to be lower mass and lower moment of inertia. Main objective of our project is controlling the speed of permanent magnet synchronous motor by closed loop control system with a microcontroller in the speed loop has been designed to operate in constant torque and flux weakening regions. For the soft stating of the motor ramp unit can be provided which can be control the current for each cycle and also it allows high quality current control to motor, without using linear controllers and modulators Control system which includes rotation speed control and direction of rotation of motor using frequency controlled method. This enables the calculation of currents and voltages in different parts of the inverter and motor under transient and steady conditions and the losses in different parts can be calculated facilitating the design of the inverter.

The PWM signal has a fixed frequency of waves with varying duty cycles (between 0% and 100%), so the motor rotation can be regulated gradually using a potentiometer already programmed on the Arduino Uno board. The operation of the controller must be according to speed range and Arduino can be act as controller. Motor rotation speed can be adjusted from the armature voltage settings through the duty cycle PWM setting so that the motor speed can be increased or decreased by the desired duty cycle. From the PMSM motor test results it has also been shown that the torque of the motor is relatively constant when there is a change in speed from low rpm to high rpm or vice versa.

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RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT: ANALYSIS ON SINGLE PHASE CASCADED H- BRIDGE MULTILEVEL INVERTER

PRINCIPAL INVESTIGATOR: R.JOHNNIEHEPZIBA

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ABSTRACT

The project deals with Cascaded H-bridge multilevel inverter which produces a desired voltage levels at the output. In Conventional inverter when the signal is converted from DC to AC the level of THD is more. To overcome this drawback we go for cascaded H- bridge multilevel inverter. Cascade H bridge inverter is one of the type of Multilevel inverter.

It consists of H-bridge connected in series to produce a desired level of voltage levels at the output. The main advantage of H-bridge is the current will flow in both the directions. H-bridge consists of four switching device either IGBT or MOSFET which is connected in series in H shape. Here the number of levels is increased by adding number of H-bridge at the input.

The main concept of the project is to analyze the THD of different levels of multilevel inverter and to reduce the Total Harmonic Distortion is decreased by increasing the number of levels of AC signal at the output.

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RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT: SOFT-SWITCHED OF HIGH STEP-UP DC-AC INVERTER FOR AN BUCKBOOST VOLTAGE SOURCE INVERTER WITH AN SPLIT CAPACITOR

PRINCIPAL INVESTIGATOR: S.RAMACHANDRAN

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ABSTRACT

Single stage Buck/Boost inverter is an converter which performs two actions in a single stage. It boosts the DC voltage and invert to AC in a single stage. In Conventional two stage converter there will be two stages. The first stage will be a boost or buck boost DC-AC converter which is meant for conditioning and levelling the DC voltage approximately to invert to AC voltage required. The second stage will be an inverter, to invert the DC output obtained from first stage to AC voltage.

This project presents a new step-up/step-down DC-AC converter which is having application where an instantaneous voltage higher or lower than input DC voltage is required. It consists of one switching cell including two switches, two diodes, one inductor, and one capacitor on each inverter leg. The PWM is achieved by comparing a high frequency carrier (triangular) waveform with a suitable reference waveform (Sinusoidal). Since the components is less, It makes the system more compact, reliable, less weight, low cost etc. For the Validation of the theoretical analysis, the inverter was simulated for an output rated power of 1 kW, a DC input voltage of 96Vdc and output voltage of 110Vrms. Further, the fundamental output frequency was at 50 Hz and the switching frequency at 20 kHz. Detailed analysis and design of proposed converter is carried out. Simulation results are revealed for circuit validation.

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT: BIOMETRIC AND IOT BASED INNOVATIVE VOTING MACHINE

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ABSTRACT

This project examines policy regarding the electronic approaches and developments towards electronic data storage and transmission. Finger print devices for Voting machines and other existing identity documents are discussed and implemented in this project.

The user has to show his voter ID card whenever he goes to the polling booth to poll his vote. This is a time consuming process as the person has to check the voter ID card with the list he has, confirm it as an authorized card and then allow the person to poll his vote.

Thus, to avoid this kind of problems, we have designed a finger print based voting machine where the person no need to carry his ID which contains his entire details. The person at the polling booth has to show his Finger. This Finger print reader reads the details from the tag. This data is passed to the controlling unit for the verification. The controller reads the data from the reader and compares this data with the already existing data. If the data matches with the already stored information, the person is allowed to poll his vote. If not, a message is displayed on LCD and the person is not allowed to poll his vote. The polling mechanism carries out manually using the switches. LCD is used to display the related messages. And also live monitoring of the voting process can be achieved using the Wi-Fi module.

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RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT: EFFICIENT PV SYSTEM USING MPPT TECHNIQUES

PRINCIPAL INVESTIGATOR: V.KUMARAKRISHNAN

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ABSTRACT

Maximum power point tracking (MPPT) techniques are considered a crucial part in photovoltaic system design to maximize the output power of a photovoltaic array. While several techniques have been designed, Perturb and observe (P&O) is widely used for MPPT due to its low cost and simple implementation.

The photovoltaic system is designed by using perturb and observe method. Then we check the performance of solar PV cell under difference irradiance levels. This technique has drawback that it cannot perform under sudden change in irradiance, temperature etc. In this project an intelligent method of maximum power point tracking (MPPT) using fuzzy logic control of PV system. The PV system is composed of PV solar array, DC-DC boost converter, and MPPT controller. Fuzzy logic controller is easy to implement, and does not need knowledge of the exact model of the system.

This modified technique is proposed to avoid the problem of irradiance variations in corpora ting the information of voltage, current and power in the decision process for updating the duty cycle of the converter. Simulations result of the proposed algorithm achieved minimum power oscillations with high accuracy, better dynamic response and stability for changes of irradiance, load and temperature. The operations of the entire Solar MPPT system was observed through MATLAB/Simulink simulation.

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RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT: DESIGN AND IMPLEMENTATION OF A SOLAR CHARGE CONTROLLER WITH MPPT TECHNIQUE

PRINCIPAL INVESTIGATOR: G.UMAMAHESWARI

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ABSTRACT

The basic needed for human life is energy for all regular life activities. In this renewable energy play major role because it is pollution free and lesser cost but it requires effective method for utilization. Renewable energy is more compact to compare the other source such as tidal, wind, biogas, because solar is less cost and more efficiency.

With help of photovoltaic cell, solar energy is converted into useful electrical energy for regular activities. The main issue in solar power is the output voltage of panel is varied with respect to time (temperature) because of climate condition. So, output voltage of panel is varied and input voltage is given to the battery also varied.

In order to solve this crisis controller is implemented to regulate the output voltage of panel. In this work MPPT technique-based controller is implemented for voltage regulation. They regulate the output voltage is given to the battery as input voltage. In addition this analysis includes evaluating the quality and efficiency can increased by 20 to 25%.

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RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT: HYBRID POWER GENERATION FOR STREET LIGHTS APPLICATION

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ABSTRACT

The Renewable energy is the feature of the world. So this project is based on renewable energy of wind and solar. As both wind and solar energy are used in this project, so it is in the form of hybrid. Solar energy is abstracted from the sun by using polycrystalline solar panel. Wind energy is abstracted from the environmental air.

An innovative renewable hybrid energy dedicated LED street light system, the operation of the project is easy to understand, and the mechanical setup of a savonius vertical axis wind turbine is the main component of the project. The Solar Panel is integrated to the power generator and then the energy is collected through the storage device. The lighting system that has been installed at the Standalone Street light. Solar as well as wind energy can be used for street lightning applications. The objective of the project is to operate the lightning system with the help of renewable energy.

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RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT: METHOD OF INDUCTION MOTOR SPEED CONTROLLED USING PLC

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ABSTRACT

Automation control is the use of various control systems for operating equipment such as machinery, processes in factories, boilers and heat-treating ovens, switching in telephone networks, steering and stabilization of ships, aircraft and other applications with minimal or reduced human intervention. Some processes have been completely automated. The motor speed is controlled via the driver as an open loop control. To make a more precise closed loop control of motor speed we will use a tachometer to measure the speed and feed it back to the PLC, which compares to the desired value and take a control action, then the signal is transferred to the motor – via driver – to increase / decrease the speed. We will measure the speed of the motor using an incremental rotary encoder by adjusting parameters (PLC, driver) and also we need to reduce the overall cost of the system. Our control system will be held using the available Siemens PLC. In addition, we will monitor motor parameters system.

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RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT: LEAD-ACID BASED ELECTRICAL BICYCLE USING BLDC MOTOR

PRINCIPAL INVESTIGATOR: G.UMAMAHESWARI

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ABSTRACT

Now-a-days, there is a growing demand for electric bicycle as there will be less air pollution, lower maintenance cost and reduced noise. The increased number of fossil fuel based vehicles and reduced number of control strategies causes serious threats to living organisms. Air pollution is the major problem which affects the health of living organism by causing various respiratory diseases. The availability of fossil fuels are depleting day by day which in turn increases the cost of it.

To overcome from such a problems, it is necessary to use renewable energy sources. By this way, the electric bicycle is used where the electric supply is used as the fuel. An electric bicycle is run by BLDC motor and sealed lead-acid battery. The proposed model has two mode of operation, The two modes are battery mode and pedal mode. The battery mode is used as a main source of operation whenever, the charge in the battery drained out, the pedal mode operation is used. This method is used to achieve the potential to reduce the urban emission and petroleum consumption.

This is the part of development of battery cell powered, low speed electric vehicles. Thus the electric bicycle greatly avoids the air pollution with les maintenance cost.

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT: SMART HELMET FOR HUMAN SAFETY

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ABSTRACT

As the bikers in our country are increasing, the road mishaps are also increasing day by day, due to which many casualties, most of them are caused due to most common negligence of not wearing the helmets, and also many deaths occur due to lack of prompt medical attention needed by the injured person. This motivates us to think about making a system which ensures the safety of biker by making it necessary to wear helmet, as per government guidelines also to get proper forecasting after meeting with an accident.

The proposed system is an smart helmet. A module affixed in the helmet, such that, the module will sync with the module affixed on bike and will also ensure that biker has not consumed alcohol. Additional feature of accident detection module will be installed on the bike which will be able to detect accident and will be able to notify quickly the accident to safety contact numbers and the main reason behind this is not wearing helmet. Many people could save their life in accident cases if they were wearing the helmet at the time of accident.

This project is undertaken to ensure road safety among two wheeler riders .It consists of an RF transmitter, RF receiver, Encoder, Decoder IC, GPS and GSM and with an hybrid charging slot. The bike will not start if the rider is not wearing the helmet and it also does not get started if the rider consumes alcohol. When the rider wears the helmet an RF signal is transmitted which is received at the receiver end consisting of RF module receiver in the bike engine which ensures that the rider is wearing the helmet and also about the alcohol consumption by the rider. If any of the conditions are false, then the bike will not get started. Where this is a main intention of our project in order to reduce the road accidents.

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT: SOLAR PV ENERGY STORAGE CONTROL FOR LOW VOLTAGE GRID USING SUPERCAPACITOR

PRINCIPAL INVESTIGATOR: SUGANYA.A

CO-PRINCIPAL INVESTIGATOR: V.VIJIYAL

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ABSTRACT

As the conventional energy resources are depleting there is an urgent need for switching to renewable energy resources as well as increasing its functionality. This paper proposes a design of solar power system fed by a photovoltaic source with a super capacitor storage system and Buck-Boost convertor. The super capacitor has the fastest charging time compared to all other storage devices and also guarantees a longer lifetime in terms of charge cycles and has a large range of operating temperatures, but has the drawback of having low energy density.

The supercapacitor has higher energy density but requires an accurate charge profile to increase its lifetime. Combining the two storages is possible to obtain good compromise in terms of energy density. Buck-Boost convertors allow output from convertors to be higher or lower than its input and allow the output to be non-inverted state with respect to input. It also reduces the amount of harmonics present in the output. A Controller is added between the solar panel and the supercapacitor to improve the system performance. The solar power system is controlled and monitored using AT mega16 microcontroller.

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT: ELECTRIC POWERED BICYCLE

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ABSTRACT

Solar and powered by using electric bicycle can be designed because it is environmentally friendly and the cost is much lower. It can mainly design in order to overcome the problem of electricity, and it cannot be recharge frequently. It provides a solution for the environment pollution. In case of cloudy day which was fitted in front of the bicycle can be used.

Solar cells are an alternative method for generating electricity directly from sunlight. In this project, we learn about the working of solar cells. This project helps to ride the cycle without pedaling and plugging. Solar panels are used to generate electricity. Solar energy is an important means of develop some methods to increase the efficiency of photovoltaic systems, i.e. solar panels.

Our project will include DC generator to generate electricity from it is fixed with front axial wheel of the electric bicycle at the education level, it is necessary for engineering and technology students to have understanding and appreciation of technologies associated with renewable energy.

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RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT: ANFIS RULE REDUCTION USING TABULATION METHOD AND ITS APPLICATION IN THE IDENTIFICATION OF INDUCTION MOTOR FAULTS

PRINCIPAL INVESTIGATOR: V.ROYNA DAISY

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ABSTRACT

Induction motor face more stresses during operation which makes it essential to check and monitor the condition of the three phase induction motor in order to improve the efficiency and to reduce the maintenance and operating cost. The main objective of this work is to detect the fault of three phase induction motor in both static and dynamic conditions.

The fault is identified by using thermal images which shows the internal features of the machine even at running conditions. The Haralick and textural features are extracted by feature extraction method and predominent features are identified by Fisher discriminant ratio (FDR).

A decision support system Adaptive Neuro-Fuzzy Inference System (ANFIS) is used to diagnose the fault as it involves the advantage of both the Fuzzy Logic (FL) and Artificial Neural Network (ANN). Additional features are added to identify the nature of the fault. The increases in number of input parameters make the system more complex due to large number of rules. Thus the numbers of rules are reduced by using tabulation method which in turn reduces the complexity of the system.

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RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT: IMPLEMENTATION OF UNDERVOLTAGE AND OVERVOLTAGE PROTECTION

PRINCIPAL INVESTIGATOR: Dr.K.JAGATHEESAN

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ABSTRACT

Modern life without electricity is not possible. For continuous electrical supply electrical power distribution system works as an important factor by supplying electricity to the consumers of the system. In this system fault occurs, so for minimizing fault and increase the efficiency of power we need good protection system. This protection system will secure the generation and distribution system from the occurrence which are violating the supply. In order to increase the protection system in homes, single phase automation will help a lot as it will find and solve the problem automatically.

The on-time delay circuit not only protects the load from switching surges but also from quick changeover (off and on) effect of over/under voltage. Here is an inexpensive auto cut-off circuit, which is fabricated using transistor and other discrete components. The over/under voltage cut off with ON-Time delay provides various types of protection i.e., Overvoltage protection, Under-voltage protection, Protection against transients, Protection to load from frequent turning ON & OFF by providing time delay.

PAAVAI ENGINEERING COLLEGE,
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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT: ''RELAY CO-ORDINATION AND ARC FLASH ANALYSIS' 'USING ETAP

PRINCIPAL INVESTIGATOR: A.UDHAYA KUMAR

HoD

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ABSTRACT

The arc flash hazard is related to electrical safety in work place. The calculations required for determining arc-flash incident energy exposure for electrical workers are involved. The authors have completed arc-flash energy studies for many industrial sites, from small facilities to large chemical plants.

This paper provides a summary of the results of these studies, with an emphasis on the wide range of results that were found. Learning's about electrical equipment design, installation and operation are discussed that were found to be associated with high arc-flash energy values. In addition, some methods are described to evaluate the arc-flash energy values for a facility that can help the owner determine the most effective arc flash hazard management policy.

NFPA specifies the requirement of personal protective equipment (PPE) for workers within the flash protection boundary. All parts of the body which may be exposed to the arc flash need to be covered by the appropriate type and quality of PPE. The entire PPE set may be comprised of FR clothing, helmet or head gear, face shield, safety glasses, gloves, shoes, etc. depending upon the magnitude of the arc energy. The amount of PPE required and its quality needs to be determined on the basis of the calculated incident energy on the worker's body. The calculations need to be performed by a qualified person such as an engineer.

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT: BLDC MOTOR DRIVE WITH SPEED CONTROL OF PWM RECTIFIER

PRINCIPAL INVESTIGATOR: C.GOWRISHANKAR

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ABSTRACT

BLDC motors are becoming more popular in industrial, traction and household appliance because it has high efficiency, high power density and low maintenance cost. Brushless DC motors having a permanent magnet rotor with a three-phase stator winding. BLDC motors do not use brushes for commutation so that the commutation is performed electronically by using an array of switching devices. In this we are using 3 phase inverter to control the BLDC motor using PWM on basis the feedback of hall sensor. Pulse Width Modulation (PWM) technique is used where its signal is generated in microcontroller.

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT: BIDIRECTIONAL CHOPPER WITH ZVS FOR SRM

PRINCIPAL INVESTIGATOR: M.RAJA

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ABSTRACT

In this project presents a bidirectional dc/dc converter for transfer the power in both directions. The input from rectifier is given to diode bridge capacitor bank circuit. A capacitor bank is a group of several capacitors of the same rating that are connected in series or parallel with each other to store electrical energy. The resulting bank is then used to correct a power lag or phase shift in ac power supply.

A low cost, soft switched, isolated bidirectional dc/dc converter using only four switches was proposed for interconnect between two dc buses. The Bidirectional dc-dc converter is the energy storage systems for Hybrid Vehicles, Storage systems Renewable energy, Uninterruptable power supplies and Fuel cell storage systems. The battery is connected to source side of bidirectional dc/dc converter and load side of bidirectional dc/dc converter is connected to the SRM motor.

Main concept in this project is to transfer the power in bidirectional. In the proposed system reduced the number of switch and used zero voltage switch are introduced, which is also used to improve the efficiency of bidirectional dc/dc converter and reduced switching loss, switching stress, easier thermal management.

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RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT: HARMONIC ANALYSIS FOR 9 BUS SYSTEM USING ETAP

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ABSTRACT

Power system networks that have a distorted voltage and current waveforms are said contain harmonics. This distortion may cause a failure in customer equipment. In the modern era, the distortion can no longer be ignored due to increase in the equipment that sensitive to wave variation and devices that produced harmonics. The main intention of any electrical utility company is to deliver with better quality. By increasing the use of power electronic devices the power quality has been affected.

One of the most important causes for improper power quality is power system harmonics. This has become a major issue for power quality problem and harmonic analysis needed to investigate in modeling components to minimize or remove this harmonics current or voltage. Here power System Harmonic Analysis for 9 bus has been performed using ETAP software and described the whole process in details.

A general load was modeled as a harmonic source to inject harmonic current through the power network. Then to analyze the effect of harmonic current. The simulation program ETAP is very simple and effective software for analyzing the complex network. The report manager of ETAP is very efficient to execute results in various formats by user requirement. Harmonic Analysis was used to analyze the level of harmonics with the help of harmonic order slider.

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT: DUAL AXIS SOLAR TRACKING SYSTEM USING ARDUINO

PRINCIPAL INVESTIGATOR: G.DEIVAMANI

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ABSTRACT

This project aims at designing and executing the advanced development in solar tracking system. In the field of renewable energy, use of solar energy is the major concern and utilization of solar photovoltaic energy is increasing day by day. It offers the greatest energy potential compared with other currently known renewable resources. For the proper utilization of obtaining solar energy from the sun technology upgradation is the vital concern.

In the existing method, either the fixed mount or single-axis tracker is employed. The fixed mount did not rotate while the single-axis tracker rotates in one angle of rotation either horizontal or vertical.

In the proposed dual-axis method, panel is able to rotate on both horizontal and vertical direction. In this project the design and construction of Arduino-based dual axis solar tracking system is included that allows more energy to be produced because the solar panel will able to remain aligned to the sun so that it can generate more energy than a fixed positioned Solar panel. To conduct the project work we have used Arduino board. Arduino connects the hardware components for our desired works through command codes installed in it. LDR has been used as photo sensor devices and DC motors to rotate the solar panel depending on the position of the sun daily and seasonally, that is horizontal or vertical position.

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT: EXPERIMENTAL INVESTIGATION OF MONOCRYSRALLINE AND POLYCRYSTALLINE SOLAR MODULUES

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ABSTRACT

Photovoltaic modules have a potential market for off-grid applications in rural context with to the electrical grid. For fixed photovoltaic systems, proper orientation of photovoltaic modules at specific conditions plays a significant role to have maximum performance.

The effects of different metrological parameters on the performance of photovoltaic modules at three different inclination angles with horizontal. Six 40W photovoltaic modules were exposed to sunlight at three different inclination angles. Performance ratio, module efficiency, fill factor were calculated for photovoltaic module at different inclination angles and results presented.

PV modules at 33.74° tilt angle received high solar radiation and showed high output power. As solar radiation increases, the radiation losses from the surface of the module increases and resultant decrease the module efficiency and increase the module temperature at high solar irradiance. During the winter months, the average efficiency of the monocrystalline PV module at 0° and 90° was 4% and 2% higher respectively than the 33.74° tilt angle. Similarly polycrystalline PV module showed 7% and 5% higher efficiency at 0° and 90° respectively than the 33.74°. Moreover, Fill factor of PV module at 33.74° tilt angle had the highest value as compared to other tilt angles.

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RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT: COST EFFECTIVE CONVERSION OF EXISTING BIKE INTO AN ELECTRIC BIKE

PRINCIPAL INVESTIGATOR: Dr.G.BALAJI

CO-PRINCIPAL INVESTIGATOR: K. K.POONGODI

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ABSTRACT

Air pollution from motor vehicles and exhaustion of natural resources has become a serious global and environmental hazard. The emission of poisonous gases such as Carbon monoxide (CO), Nitrous Oxide (N_2O), Sulphur dioxide (SO_2) and other hazards gases from Two-Wheelers is a significant contributor to air quality problems which cause severe threats to all living organisms. Due to increase in number of vehicles and limited use of emission control strategies, two-wheelers are considered to be a significant source of urban air pollution in most of the Indian cities.

To overcome such harmful effects, the modification of Existing bike into an Electric bike is necessary. BLDC hub motor is used for its long operating life, compact size, high efficiency and better Speed-Torque characteristics. The Sealed Lead Acid battery is used and the Controller is used to governor the speed of the vehicle. Through this conversion long distance is facilitated.

The conversion of Existing bike into an electric bike is cost effective. The pollution due to air and fuel consumption is totally avoided, which in turn reduces the maintenance cost.

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT: COST EFFECTIVE CONVERSION OF EXISTING BIKE INTO AN ELECTRIC BIKE

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ABSTRACT

Air pollution from motor vehicles and exhaustion of natural resources has become a serious global and environmental hazard. The emission of poisonous gases such as Carbon monoxide (CO), Nitrous Oxide (N_2O), Sulphur dioxide (SO_2) and other hazards gases from Two-Wheelers is a significant contributor to air quality problems which cause severe threats to all living organisms. Due to increase in number of vehicles and limited use of emission control strategies, two-wheelers are considered to be a significant source of urban air pollution in most of the Indian cities.

To overcome such harmful effects, the modification of Existing bike into a Hybrid Electric bike is necessary. This Hybrid method involves two modes of operation where the battery is operated as the main source and the fuel is operated as back up supply. Through switching operation, the modes of process can be switched from battery into fuel and vice versa. Brushless DC Motor (BLDC) hub motor is used for its long operating life, compact size, high efficiency and better Speed-Torque characteristics. The Sealed Lead Acid battery is used and the Controller is used to governor the speed of the vehicle. Through this conversion long distance is facilitated.

The conversion of Existing bike into Hybrid bike is cost effective. The pollution due to air and fuel consumption is highly reduced which in turn reduces the maintenance cost.

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT: A SINGLE-PHASE ASYMMETRICAL NINE-LEVEL INVERTER FOR PV APPLICATION

PRINCIPAL INVESTIGATOR: C.ARULKUMAR

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ABSTRACT

Multilevel inverters are mainly used in high power applications, where they have proved to be reliable and robust. They operate with low frequency and present high efficiency. Current demand on different reliable, efficient and robust inverters for different energy system has extended multilevel application to small power system as well. In this project, an inverting system will be developed using the cascaded H-bridge multilevel inverter technology, which is able to synthesize a desired ac voltage from several levels of dc Voltages.

Multilevel inverters as compared to single level inverters have advantages like minimum harmonic distortion, reduced and can operate on several voltage levels. A multi-stage inverter is being utilized for multipurpose applications, such as active power filters, and in many renewable energy power applications. The PWM signal thus generated is then used as triggering pulses for the multilevel inverters.

This Project aims at the simulation study of single phase cascaded H-bridge multilevel inverter using DC voltages MATLAB software. It will be used to investigate and verify the quality of the ac output voltage.

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT: DESIGN AND CONTROL IMPLEMENTATION OF QUAD-COPTER

PRINCIPAL INVESTIGATOR: M.RAJA

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ABSRTACT

Quad-copter has extremely developed in the area of functions due to its flexibility of take-off and range of uses. Being simple, small, and cost effective quad-copter is gaining advantage in various applications. The need for Un-manned Aerial Vehicles (UAV) in various fields such as industries, military, nuclear power plant, space exploration, disaster rescue, flower showering etc. has improved its usage. In this paper quad-copter was modelled and the frame was analyzed for an optimum load. Mathematical modelling & simulation of the system using matlab for stability analysis was conducted. In order to obtain desired response and stability, a tuned PID controller parameters were utilized

This paper explains our work of the Quad copter for flower showering purpose. Our objective is to create a small robust quad copter that can fly and used for Flower Showering application. The aim of this project is to develop a machine which would help agriculture producers improve productivity and efficiency to maintain their profit margins. The quad-copter can be controlled using RF technology (Bluetooth and Mobile App). The Onboard camera with flying quad-copter to perform image processing to identify the infected crops and water flow on the field. This controller board has inbuilt gyro and accelerometer sensor. The signals form these sensors are processed and executed by the microcontroller (Atmel 164 IC) and output from controller board used to control the motors

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RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT: SOLAR POWER INVERTER USING SPACE VECTOR PWM TECHNIQUE

PRINCIPAL INVESTIGATOR: V.KUMARAKRISHNAN

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ABSTRACT

Inverters are widely used in the domestic and industrial environments. It performs as second line of sources in case of power off from direct supply. Due to low capacity of the battery, the inverter dies out by energy utilized by heavy load appliance. Our project designed to overcome from such issues by solar energy.

Solar energy generates by PV panels with hybrid inverter batteries to store energy. In photovoltaic power generation system DC voltage variation leads to AC voltage distortion. The inverter generates the voltage up to 24V AC. By using hybrid inverter or multi-mode inverter (solar and storage system) it can simultaneously manage inputs from both solar panels and a battery bank, charging batteries with either solar panels or from direct supply.

By using of space vector PWM based inverter it generate sinusoidal voltage and current. The main advantage of our project is giving high efficiency and low harmonic distortion in solar power generation.

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT: AN AUTOMATIC BUCK-BOOST CONVERTER BASED MULTI RATING BATTERY CHARGER

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ABSTRACT

Basically the buck-boost converter is worked on reference feedback output signal based an automatic buck-boost converter is control and working on microcontroller output data based. it is used to the multi rating battery charger the any type batteries are supported in the automatic buck-boost converter charger. A different ratings batteries are available to in this charger and when the batteries are fully charged so it is automatically disconnected from the power supply so the battery efficiency is balanced.

The converter output and battery parameters are display from a PC and mobile by using Zig-Bee wireless technique so the parameters are easily observed. The current and voltage ratings are measured to a sensors and buck-boost converter input pulses is controlled to the microcontroller for PWM method so the converter output voltage ratings are very accuracy output voltage. Its operating performance speed and efficiency is high a wireless data transmission distance is up to 25 meters.

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RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT: MULTI-INPUT DC-DC CONVERTER FOR HYBRID RENEWABLE ENERGY POWER SYSTEM

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ABSTRACT

A multi-input DC-DC boost converter is proposed to draw power from several input sources and to supply the regulated output voltage for the load from the power sources. As the conventional source of energy is rapidly depleting and the cost of energy is rising, we turn towards renewable energy sources. Reason to choose renewable energy is because of its abundance and distribution throughout the earth. Input sources include renewable energy sources like Photovoltaic source and Wind source. A storage element battery is used to provide uninterrupted supply to the load. The battery utilized is bidirectional in its power flow hence the converter topology enables the storage element to be charged or discharged through input power sources. Multi-Input Converter (MIC) can deliver power from all of the input sources to the load either individually or simultaneously.

MICs reduce the system size and cost by reducing the number of components. Three different operation modes are discussed based on the consumption of the battery. A PI controller is used for the closed loop performance of MIC. The different operating modes of the proposed converter are simulated using MATLAB.

Future research in this area could consider the development of robust synchronization techniques for the hybrid renewable energy system. In future more than three inputs are applied to the DC-DC converters. The switching mode will be changed at the buck boost converter.

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT: ASYMMETRICAL CASCADE MODEL MULTILEVEL INVERTER FOR PV APPLICATION

PRINCIPAL INVESTIGATOR: C.ARULKUMAR

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ABSTRACT

A new cascade model multilevel inverter for generating 21 voltage levels has been proposed in this paper. Results obtained from this model and conventional cascaded H bridge (CHB) inverter are compared. To generate 21 level output voltage by using CHB ten H-bridge modules are required and each module consists of four numbers of switching devices. Whereas the proposed cascade model has sub-multilevel inverter blocks, are connected in series. This topology results in reduction of installation area, cost and simple control system.

The performance of both topologies was observed by MATLAB/SIMULINK. Multilevel inverters play vital role in high power medium voltage energy management market. The concept behind multilevel inverter is to synthesize a sinusoidal staircase voltage waveform from a series connection of power semiconductor devices with several DC voltage sources. The step output voltage results in improvement in quality of output voltage, less voltage stresses on switching devices, reduction of switching losses, total harmonic distortion and high efficiency.

Various multilevel inverter topologies and variety of control methods have been introduced in the literature The conventional multilevel converter topologies are Diode clamped, Flying Capacitor and Cascaded H bridge capacitors that result in DC link capacitor unbalancing.

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT: GEAR SYSTEM BASED ELECTRIC CAR

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ABSTRACT

The proposed electric car is focused on converting the normal internal combustion engine fuel car into electric car instead of fuel engine to electric motor. Here the permanent magnetic brushless DC motor with coupling gear box. From that increasing the pulling torque and increasing the speed of electric car. In the existing system the speed of the electric car is based on the speed of the motor but in our project the speed of the electric car is based on the speed of the transmission system.

In the gear shifting control strategy for pure electric vehicle with inverse manual transmission is proposed. Through the precise control of sliding sleeve, clutch engagement and separating time, gear shifting process is realized without driving torque interruption. The results show that, during up and down shift process, the driving torque keeps more than 50%, obviously improve the pure electric vehicle accelerating performance and the ability to climb.

Normally the electric car is available in the market but the cost of this car is very expensive. But our project, by converting normal fuel car into electric car with low cost, less pollution and eco-friendly.

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT: A NOVEL DESIGN OF SEPIC OPERATION OF AN DC-DC CURRENT SOURCE CONVERTER USING WECS

PRINCIPAL INVESTIGATOR: R.MUTHUKUMAR

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ABSTRACT

A high step-up resonant dc-dc converter with ripple-free input current for renewable energy systems . We use an input-current doubler and a switching mechanism employed at an output-voltage doubler to achieve high step-up voltage gain without having to use a transformer with high turns ratio.

An active-clamp circuit installed on the primary side suppresses the surge voltage at the switch components and recycles the energy stored in the leakage inductance. A resonance that occurs at the secondary side of the converter is used to reduce the turn-off current and switching loss significantly, and to achieve high power conversion efficiency.

The input current ripple declines to zero theoretically because the duty cycle of the primary-side switches is always set to 0.5 regardless of the input voltages and load variations. The circuit operations, steady-state analysis, and design guideline of the proposed converter are also presented. A 40-W prototype converter has been fabricated to demonstrate the performance of the proposed converter.

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DEPARTMENT OF MECHANICAL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT:

EXPERIMENTAL INVESTIGATION OF NOISE REDUCTION ON AUTOMOTIVE MUFFLER

PRINCIPAL INVIGILATOR: K.ANAND

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ABSTRACT

The purpose of the muffler is to reduce the exhaust noise produced by the engine. The main objective of this study is to simulate and investigate experimentally the muffler of the Alfa Romeo 145 vehicle. The dimensions of the muffler were used to perform the simulation. Experimentations were performed with the same muffler to develop a relationship between the noise and back pressure on muffler design. The performance of a muffler is based on Insertion loss, Transmission loss, and Back pressure. To study the performance of the muffler, simulation was carried out using GAMBIT software with FLUENT. GAMBIT was used to create a mesh surface and to define the boundary conditions of the required object, which was read and analyzed by FLUENT. The experiment on the actual muffler of Alfa Romeo 145 was conducted at different engine speed. Experimental investigation was performed on four parameters: manifold temperature, tail pipe temperature, manifold pressure and sound pressure level (SPL). Curves are drawn and analyzed using the measured parameters.

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DEPARTMENT OF MECHANICAL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT:

EXPERIMENTAL INVESTIGATION OF ALUMINIUM METAL MATRIX COMPOSITE THROUGH ELECTRO CHEMICAL MICRO-MACHINING

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ABSTRACT

High performance aluminium based metal matrix composites possess low machinability characteristic. Electrochemical machining (ECM) is one of the advanced machining processes, used for machining of these newly developed exotic materials. This article critically reviews the research work on experimental investigations on ECM of aluminium matrix composites. Besides, recently developed techniques such as abrasive assisted electrochemical machining, electrochemical grinding, electrochemical micromachining, and electrochemical drilling are explored in the processing of aluminium metal matrix composites.

PAAVAI ENGINEERING COLLEGE

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DEPARTMENT OF MECHANICAL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT:

AUTOMATED COMPACT JACK FOR FOUR WHEELER LIFTING OPERATION WITH SPUR GEAR INCORPORATED PUMP TO INCREASE THE EFFICIENCY

PRINCIPAL INVIGILATOR: M.Makesh

CO-PRINCIPAL INVIGILATOR: T.SATHEES

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ABSTRACT

With the increasing level of technology, researchers all over the world are working continuously to improve and implement better and robust design of materials at workplace for productivity, efficiency and effectiveness. Detailed design procedure of a quick lifting screw jack is presented in this paper. The design is fundamentally a modification of the conventional scissor jack. The problems associated with the conventional jacks are the ergonomic snags experienced by operators due to prolonged bending or squatting positions during operation. These problems of waist pain and backaches are as a result of continuous turning of the wrench or crank shaft in an uncomfortable position for a long period. These led to the design and modification of quick lifting screw jack with gear arrangements that are safe, reliable and capable of raising or lowering heavy load with little effort. The results showed that the introduction of the crank and gear mechanism would help reduce difficulty in operation, reduce time, increase efficiency and effectively control the difficulties concomitant with Ergonomics - which is an ultimate sensitivity in design process.

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DEPARTMENT OF MECHANICAL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT:

POWER PRODUCTION FROM EXHAUST GAS OF AN ENGINE

PRINCIPAL INVIGILATOR: P.Elumalai

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ABSTRACT

In this project, we modify a stationary diesel engine for producing power using turbine. Nowadays in automobile field many new innovating concepts are being developed. We are using the power from vehicle exhaust to generate the electricity which can be stored in battery for the later consumption. In this project, we are demonstrating a concept of generating power in a stationary multiple cylinder diesel engine by the usage of turbines. Here we are placing a turbine in the path of exhaust in the silencer. The turbine is connected to a dynamo, which is used to generate power. Depending upon the airflow the turbine will start rotating, and then the dynamo will also starts to rotate. A dynamo is a device which is used to convert the kinetic energy into electrical energy. The generated power is stored to the battery. It can be stored in the battery after rectification. The rectified voltage can be inverted and can be used in various forms of utilities.

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DEPARTMENT OF MECHANICAL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT:

NOISE AND EMISSION CONTROLLER FOR AQUA SILENCER

PRINCIPAL INVIGILATOR: P.N.Mohankumar

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ABSTRACT

The main source of the pollution is Exhaust from automobiles and industries. Hence to reduce these pollutants from Exhaust of Engine a new technology is introduced called Aqua silencer. The main component due to which the air pollution is increasing are (Co),(NOx) and lead which is get exposed from vehicles. The other sources such as big factories, electric power, generation plants, big industries etc. Aqua silencer is one of the attempt taken in reduce the air pollution. It is fitted to the exhaust pipe of engine or system. These Silences is used to reduce the noise and control the emission of dangerous gases. In aqua silencer the main component perforated tube which consists of number of different diameter holes. Generally these are 4 set of holes on perforated tube. Charcoal layer is pasted over that tube and it is used to convert high mass bubbles to low mass bubbles. The aqua silencer reduces emission noise because, the sound produced in aqua silencer under water having less amplitude than the sound produced in open atmosphere. The charcoal layer which is pasted over perforated tube can control the emission using the activated charcoal and highly porous extra free valences so these layer having high absorption capacity.

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RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT:

NOISE AND EMISSION CONTROLLER FOR AQUA SILENCER

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ABSTRACT

The main source of the pollution is Exhaust from automobiles and industries. Hence to reduce these pollutants from Exhaust of Engine a new technology is introduced called Aqua silencer. The main component due to which the air pollution is increasing are (Co),(NOx) and lead which is get exposed from vehicles. The other sources such as big factories, electric power, generation plants, big industries etc. Aqua silencer is one of the attempt taken in reduce the air pollution. It is fitted to the exhaust pipe of engine or system. These Silences is used to reduce the noise and control the emission of dangerous gases. In aqua silencer the main component perforated tube which consists of number of different diameter holes. Generally these are 4 set of holes on perforated tube. Charcoal layer is pasted over that tube and it is used to convert high mass bubbles to low mass bubbles. The aqua silencer reduces emission noise because, the sound produced in aqua silencer under water having less amplitude than the sound produced in open atmosphere. The charcoal layer which is pasted over perforated tube can control the emission using the activated charcoal and highly porous extra free valences so these layer having high absorption capacity.

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RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT:

DESIGN AND DEVELOPMENT OF A TWO WHEELER OPERATED BY LPG

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ABSTRACT

This project studies about duel fuel bike which can be capable of running on **two** type of fuel i.e. PETROL and **LPG**. Both can be interchangeable in running condition. It means when bike is running on petrol then we can change the fuel system i.e. from petrol to **LPG** or vice a versa. Petrol gives high power and **LPG** gives better millage and is also eco-friendly. So it gives advantages of both. Dual- Fuel Bike: DUAL-FUEL term itself suggest us that the using of **two** fuel in a system. In this dual-fuel bike, study is done to run a bike on **two** fuels i.e. **LPG** & PETROL.

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RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT:

EFFECT ON PROCESS PARAMETERS OF ALUMINIUM ALLOY AND SILICON CARBIDE ON FRICTION STIR WELDING

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ABSTRACT

In this work, successful friction stir welding of aluminum alloy 2219 using an adapted milling machine is reported. The downward or forging force was found to be dependent upon shoulder diameter and rotational speed whereas longitudinal or welding force on welding speed and pin diameter. Tensile strength of welds was significantly affected by welding speed and shoulder diameter whereas welding speed strongly affected percentage elongation. Metallographic studies revealed fine equiaxed grains in weld nugget and microstructural changes in thermo-mechanically affected zone were found to be the result of combined and interactive influences of frictional heat and deformation. A maximum joining efficiency of 75% was obtained for welds with reasonably good percentage elongation. TEM studies indicated coarsening and/or dissolving of precipitates in nugget. For the gas metal arc weld, SEM investigations revealed segregation of copper at grain boundaries in partially melted zone.

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RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT:

FABRICATION &CHARACTERIZATION OF BASALT/ CARBON REINFORCED HYBRID COMPOSITE

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ABSTRACT

Sandwich fiber metal laminates (FMLs) grabs significant growing attention among disparate engineering industries such as defense, aerospace and commercial vehicle manufacturers, due to its improved mechanical, thermal and electrical properties. Over the past few decades, FMLs were used as an impeccable identical for classical fiber composites like carbon and E-Glass. This prospective work interrogates mechanical behaviour of Basalt/Kevlar/AA 8090 reinforced FML fabricated by hand layup - compression moulding process. The low-velocity impact, flexural and tensile behavior of fabricated FMLs were calculated by various mechanical testings done as per ASTM standards. Fractured surface of the FML also analyzed by scanning electron microscopic images for understanding the fracture behavior of the proposed outcome.

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RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT:

DESIGN AND FABRICATION OF FISH DESCALING AND CUTTING MACHINE

PRINCIPAL INVIGILATOR: C.Suresh

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ABSTRACT

In the past, various products have been found to descale the fish but till not much importance has been given to the idea of developing an efficient product with reasonable cost for a targeted section of customers in the society. After the need analysis and identification of the tobe-developed product, the search of the idea leads to an innovative concept of scaling fishes succeeding the need of it. Now there are various machines available in the market to scale but a system that ascertaining both cost and quality has not been produced on a mass scale yet. In this report, we first study the existing market and level of usage on the machine by various category of customers. Then the various mechanisms and cost analysis depending on the nature of the job performed by the accessories are discussed which is followed by the project design and analysis. Some designs that could provide a solution for the problem are found. Out of this, the best design is found out considering factors like the effort required, cost, efficiency, time and quality over performance. The various possible subsystems of the device are listed. The morphological analysis is then done. The most efficient and cost effective combination of subsystems is selected. This is the solution for the problem. The specification and size of the parts of the device are also given.

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RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT:

DESIGN AND FABRICATION OF GEAR LESS POWER TRANSMISSION USING ELBOW MECHANISM

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ABSTRACT

This paper represents real time study of gearless transmission mechanism. Todays world requires speed on each and every field. Hence rapidness and quick working is the most important. Now days for achieving rapidness, various machines and equipment are manufactured by man. This transmission system is to be analysed in solid works software to study reaction of elbow rods and hub and then the fabrication of mechanism is carried out. The ANSYS analysis of the hubs is being presented in this paper. The project GEARLESS TRANSMISSION is being compact and portable equipment, which is skilful and is having something precise in transmitting power at right angle without any gears being manufactured

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DEPARTMENT OF MECHANICAL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT:

EXPERIMENTAL INVESTIGATION OF TYRE PYROLYSIS OIL AS AN ALTERNATIVE FUEL FOR DIESEL ENGINE

PRINCIPAL INVIGILATOR: S.T.Kumaravel

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ABSTRACT

In the current energy scenario, attention of world is changing towards producing energy from waste products. In the present study, tyre pyrolysis oil (TPO) is prepared and investigated in diesel engine. Initially, waste tyres were collected from local market, cut down into small pieces and steel wire meshes inside the tyre were removed. Then the pieces were heated at a high temperature. The last derived component after heating is called TPO. The minimal amount of black tyre powder which was also identified inside oil is removed by filtering process. The obtained TPO oil is mixed with traditional diesel fuel in the ratio of 20% TPO and 80% diesel. Then the prepared samples were tested in computerised single-cylinder direct - injection diesel engine to analyse the combustion and performance characteristics

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RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT:

GENERATION OF MICRO HOLES THROUGH ELECTRO CHEMICAL MICRO MACHINING ON A COMPOSITE SPECIMEN

PRINCIPAL INVIGILATOR: V.Subburam

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ABSTRACT

Among the non-traditional machining methods, Electrochemical Machining is preferred in the micromachining domain as it has many inherent advantages. Any conducting material, regardless of its hardness can be machined in this technique as material removal is done through ionic dissolution of the work-piece in an electrolytic medium. When employed at micromachining range of 1μm to 999 μm, it is referred to as Electrochemical Micromachining (EMM). A large number of input factors influence the process which makes it a complex one and difficult to achieve accuracy. The present work aims at conducting experiments to investigate the process capability of the micro-ECM setup used to drill micro-holes on a composite material. The machine used is a desk-top micro-ECM setup developed inhouse for research. Composite materials find wider applications in modern industrial products. Conventional machining of composite material is a difficult task and hence this technique has been attempted. The experiments were conducted using an Aluminium composite material as workpiece, Tungsten as tool electrode, Sodium Nitrate (NaNO3) solution as electrolyte system. The dominant input parameters taken for study are machining voltage, current, electrolyte concentration and duty cycle. The machining accuracy of the process output is investigated through Material Removal Rate (MRR) and radial overcut. Following Taguchi's L9 design, nine experiments were conducted to find the effects of machining parameters on the process and for parameter optimization.

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DEPARTMENT OF MECHANICAL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT:

FABRICATION AND ANALYSIS OF COMPOSITE MATERIAL IN SPUR GEAR

PRINCIPAL INVIGILATOR: R.Meiyazhagan

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ABSTRACT

Spur gears are the simplest and widely used in power transmission. In recent years it is required to operate machines at varying load and speed. Gear teeth normally fail when load is increased above certain limit. Therefore it is required to explore alternate materials for gear manufacturing. Composite materials provide adequate strength with weight reduction and they have emerged as a better alternative for replacing metallic gears. In this work metallic gears of steel alloy and Aluminium Silicon carbide composite have been manufactured. Composites provide much improved mechanical properties such as better strength to weight ratio, more hardness, and hence less chances of failure. So this work is concerned with replacing metallic gear with composite material so as to improve performance of machine and to have longer working life. Efforts have also been carried out for modeling and finite element analysis of gears using ANSYS 14.0. Composite gears have been manufactured by stir casting, which is economical method. Composite gears offer improved properties over steel alloys and these can be used as better alternative for replacing metallic gears.

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RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT:

CONVERSION OF KINETIC ENERGY IN TO ELECTRICAL ENERGY BY REGENERATIVE BRAKING SYSTEM

PRINCIPAL INVIGILATOR: K.Vijayakumar

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ABSTRACT

Regenerative braking systems for electric vehicles enable the range of the vehicle to be extended, but experience has indicated that the benefits are not always as great as might be expected because of inefficiencies in the power conversion processes. Extra mass and cost can often combine to limit the financial viability of a regenerative braking system.

To measure the efficiency of a regenerative braking system, the Tata Ace Electric Vehicle has been tested on a hub-mounted chassis dynamometer, and instrumented to enable calculations for plug-to-wheel efficiency and total range (compared to the same vehicle with little or no regenerative braking).

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RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT:

OPTIMISATION OF PROCESS PARAMETER OF ALUMINIUM METAL MATRIX COMPOSITE THROUGH ELECTRO CHEMICAL MICROMACHING USING TAGUCHI METHOD

PRINCIPAL INVIGILATOR: S.Maniraj

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ABSTRACT

In recent years, the application of aluminum metal matrix composites is expanding to various fields like aerospace, automobile and other industrial machineries. This paper presents the machinability of ground-granulated blast furnace slag (GGBS)-reinforced aluminum 6061 metal matrix composites using electrochemical micromachining for material removal rate (MRR) and radial overcut (ROC). Input voltage, duty cycle, electrolyte concentration and % of composition are selected as the input process parameters. Experiments have been investigated using the L_{18} mixed-level orthogonal array, and process parameters are optimized usingTaguchi technique. The model equation for MRR and ROC is developed using regression analysis. Analysis of variance is performed, and the most significant factor is found to be percentage (%) composition of GGBS. Additionally, the multi-criteria decision-making technique has been used to find optimal machining parameters for higher MRR and lower ROC. The optimal combination for higher MRR and lower ROC is 10 V, 50%, 35 g/l and 12% of GGBS composition. The confirmation test has been carried out to validate the results, and the obtained optimal parameter levels are very close to an ideal solution.

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DEPARTMENT OF MECHANICAL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT:

PERFORMANCE OF CONICAL HEAT EXCHANGER USING WATER NANOFLUIDS

PRINCIPAL INVIGILATOR: A.P.Sivasubramaniam

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ABSTRACT

The objective of the study is to observe the Nusselt number and friction factor behavior in a tube heat exchanger fitted with staggered and non-staggered conical strip inserts using water based titanium oxide nanofluid under laminar flow conditions. Water based titanium oxide nanofluid was prepared using a two-step method with a volume concentration of 0.1% and 0.5%. The tube inserts used were staggered and non-staggered conical strips having three different twist ratios of 2, 3 and 5. The experimental results indicated that the Nusselt number increased in the presence of water based titanium oxide nanofluid compared to the base fluid. Nusselt number further increased enormously with the use of conical strip inserts than a tube with no inserts. It was observed that the strip geometry and the nanofluid had a major effect on the thermal performance of the circular tube heat exchanger. It was found that with the staggered conical strip having a twist ratio of Y=3 and 0.5% volume concentration of nanofluid provided the highest heat transfer. Correlations have been derived using regression analysis.

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RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT:

DESIGN AND DEVELOPMENT OF HIGHWAY WIND TURBINE

PRINCIPAL INVIGILATOR: M.S.Vijayanand

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ABSTRACT

In this paper we present an efficient wind turbine structure for specific application. Hybrid wind turbine has been designed and developed for highway side applications. It is a combination of two conventional Vertical Axis Wind Turbines (VAWT). Darrieus and Savonius wind turbines are used as a combine model for Highway Side Wind Turbine (HSWT). A charge controller circuit has also been designed and developed. It provides charge monitor and flow control within the whole circuitry with the help of microcontroller. Battery bank system is used to store charge generated by the HSWT. A prototype model has been developed and analyzed in real physical environment. Finally the paper analyses the operation and feasibility of the proposed HSWT model.

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RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT:

THERMAL ANALYSIS OF PISTON CROWN BY USING HEAT INSULATION COATING METHOD

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ABSTRACT

The use of a metal based coating on the piston crown and its effect on heat transfer were studied in an SI engine. The piston crown is the top surface closest to the cylinder head of the piston which is subjected to tremendous pressure forces and heat during normal engine operation. The main objective of this paper is to analyze numerically a heat transfer in the copper coated (CCE) and conventional (CE) piston of four stroke spark ignition engine which is determined mainly as a function of temperature from crown to skirt. Piston was modeled using solid works, boundary conditions were calculated analytically from experiment and a study state thermal analysis was performed using ANSYS Workbench. Copper coated piston showed better heat transfer and structural stability than piston without coating.

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RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT:

EXPERIMENTAL INVESTIGATION OF 5 WAY CATALYTIC CONVERTER

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ABSTRACT

A catalytic converter is a device used to reduce the toxicity of emissions from internal combustion engines used in Automobile Industries. All the present day vehicles are equipped with catalytic converter. The main function of catalytic converter is to convert CO (Carbon Monoxide), HC (Hydrocarbon) and NOx (Nitrogen Oxides) to O2 (Oxygen), CO2 (Carbon Dioxide), H2O (Water) and N2 (Nitrogen). In the present work, design specifications of catalytic converter for petrol engine have been presented. According to this design catalytic converter is developed and installed on single cylinder Briggs & Stratton 305 cc petrol engine. Chemicals used in this model are TiO2 (Titanium Oxide), Cu (NO3)2 (Copper Nitrate), ZiO2 (Zirconium Dioxide) and C (Charcoal) rather than Palladium, Platinum and Rhodium. Finally, the model with limited backpressure was fabricated and tests were carried out on B&S Engine using Indus 5 Gas Analyser (Model No. PEA 250N). The performance of the catalytic converter was discussed.

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RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT:

EXPERIMENTAL INVESTIGATION OF ALUMINIUM SILICON CARBIDE COMPOSITE

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ABSTRACT

The paper attempts to study the machinability issues of aluminium-silicon carbide (Al-SiC) metal matrix composites (MMC) in turning using HSS cutting tool. SiCp-reinforced metal matrix composites (MMCs) containing SiC particles (5wt%-20wt %) of 400mesh size were prepared by powder metallurgy (P/M) route and used as work material for turning. Experiments were conducted at various cutting speeds and depth of cuts at constant feed rate and parameters, such as cutting forces and surface roughness were measured. It was found that higher weight percentage of SiCp reinforcement produced a higher surface roughness and needs high cutting forces during machining operation of MMCs. It was also observed that surface roughness and the cutting forces are also depending upon the depth of cut and the cutting speed at constant feed rate. This paper present a reliable set of parameters as the result of an experimental investigation that demonstrate versatility, and numerous and diverse range based on experience and technology during the machining of aluminium-reinforced silicon carbide metal matrix composite (Al-SiCp MMC) which will provide valuable guidelines to the manufacturing engineers.

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DEPARTMENT OF MECHANICAL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT:

FABRICATION OF SOLAR POWER GROUNDNUT THRESHER

PRINCIPAL INVIGILATOR: P.Mohanraj

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ABSTRACT

Groundnut is rich in protein and lipids and has a high energy valve. Groundnut is used commonly as eatable oil and commonly used for cooking purpose. At the present scenario there is a less worker at the field due to this cost of extraction increases. Due to the above factors, farmers are not involved in groundnut cultivation. The removing of groundnut pods is a time consuming process and cost expensive. Temperature is very high at harvesting time so people finds difficult to work. To overcome these difficulties groundnut thresher is used in groundnut pod removing process which minimize the time and cost. In this paper we have explained about our groundnut thresher machine design and fabrication.

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DEPARTMENT OF MECHANICAL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT:

FABRICATION OF TWO STROKE ELECTROMAGNETIC ENGINE

PRINCIPAL INVIGILATOR: S.Karthikeyan

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ABSTRACT

Now a days IC engine plays a vital role in market of automobiles. The demand for fuel has increased so need of other energy has become necessary. The main concept of this project is the zero point fuel consumption. The magnetic force principle is the basic requirement to work for electromagnetic engine. The general property of magnet that is attraction and repulsion forces are converted into mechanical work. The magnetic driven engine derives it power from magnet power and constant magnetic energy is converted into mechanical energy. The useful output is rotating motions and the application is based on electromagnetic engine which varies from different field. The electromagnetic engine should be ideally perform exactly the same as that of internal combustion engine. The engine, the strength of the field is controlled by the amount of windings. This design applies the power every fourth stroke same as normal does now. It utilizes only the repulsive force that allows field to dissipate completely, and have no restrictive effects on the rising piston. The main advantages of electromagnetic engine are that if is pollution free and internal parts like valves and cam-followers, can be avoided. Also no manifolds are required since there is no fuel flow. The challenges faced in designing an electromagnetic engine is that is has to be as efficient as an internal combustion engine.

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RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT:

FABRICATION OF AUTOMATIC EMERGENCY BRAKING SYSTEM IN FOUR WHEELERS

PRINCIPAL INVIGILATOR: N.Lokeshwaran

CO-PRINCIPAL INVIGILATOR: N.Lokeshwaran

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ABSTRACT

Mostly people prefer using cars and four wheelers for efficient transportation. Vehicle Technology is increasing to a wide extent especially in braking systems and sensing systems. Vehicles equipped with modern braking technology is designed with simple collision avoidance system, which will help to detect a collision which is likely to occur and applying emergency brake to avoid it. Such technologies will reduce the number of accidents which causes worst damages, serious injury, and even death. In this automatic braking system, there is a four-wheel cart in which rare wheels are being motorized for drive wheel. FRONT wheels have been pivoted for staring mechanisms. New friction brakes are designed for emergency braking. The brakes are operated by motorized mechanism, which is spring-loaded. The drive of the car is remote operated. Two sensors are used for front and rare for avoiding damage to the car at the time of parking. The sensors used are a capacitive type which can sense both Metal and non-metal obstacles. Also, two relays are used after the sensors which activate the braking motor when obstacles are sensed either in forward or reverse direction.

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RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT:

DESIGN AND FABRICATION OF UNIVERSAL FLEXIBLE DRILLING MACHINE

PRINCIPAL INVIGILATOR: K.Ramachandran

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ABSTRACT

In previous drilling machine many of the problems arise during drilling. Some parts cannot drill due to small work space between drill bit and work piece. So we use hand drills in this cases but it cause alignment problems. So here i propose a 360 degree flexible drill that can be mounted on a table or wall and can be used to drill holes horizontally, vertically or even upside down. So this make it possible for easy drilling in even complicated parts and surfaces.

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RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT:

DESIGN AND FABRICATION OF ANIMAL IDENTIFIER AND RESTRICTOR TO PREVENT HUMAN LIVEHOOD

PRINCIPAL INVIGILATOR: Ms.Sumithra.C

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ABSTRACT

The main aim of our project is to protect the crops from damage caused by animal as well as divert the animal without any harm. Animal detection system is designed to detect the presence of animal and offer a warning. In this project we used PIR and ultrasonic sensors to detect the movement of the animal and send signal to the controller .It diverts the animal by producing sound and signal further, this signal is transmitted to GSM and which gives an alert to farmers and forest department immediately.

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DEPARTMENT OF MECHATRONICS

RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT:

DESIGN AND FABRICATION OF AUTONOMOUS ROAD REFLECTOR LIGHT USING ARDUINO

PRINCIPAL INVIGILATOR: Mr. Vibin Stalin.C

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ABSTRACT

Road accidents have been very common in the present world with the prime cause being the careless driving. The necessity to check this has been very essential and different methods have been used so far. This project presents a smart Vehicle lighting system which provides a safe night time environment for all road users and pedestrian. The main objectives are to build an automation system of vehicle lighting using Arduino. This system is controlled according to the specific mode. These modes are controlled by sensor which is Light Dependent Resistor (LDR) This system can automatically adjust high beam and low beam of the vehicle according to traffic flow. This system operates during the night and the focus is only for the one-way road at a junction. LDR will be on when only there is road user otherwise, it will turns light into low beam. This design can save a great amount of energy consumption. Moreover, the maintenance cost can be reduced and lifespan of the system will increase and accidents also can be reduced. As the result, the system has been successfully designed.

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RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT:

OPTIMIZATION OF ABRASIVE WEAR CHARACTERISTICS OF CERAMIC OXIDES COATING ON AISI 1040 FORGED STEEL USING PLASMA SPRAY PROCESS BY TAGUCHI METHOD

PRINCIPAL INVIGILATOR: Dr..D.R.P.Rajarathnam

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ABSTRACT

Different types of ceramic powders were coated on the surface of middle carbon steel using a plasma method. Coated surfaces were tested experimentally with regard to their abrasive wear resistance. To evaluate test data obtained, an experimental design method, which is based on the Taguchi method, was used. By using the Taguchi method, influence of test parameters, such as normal load, abrasive grit size, and material on wear resistance of coatings by calculating signal-to-noise (S/N) ratio and analysis of variance (ANOVA), could be estimated. From analysis of test results, it was determined that load factor has the most effect on wear of coating.

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RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT:

DESIGN AND FABRICATION OF SURVEILLANCE DRONE IN CAVES

PRINCIPAL INVIGILATOR: Mr.S.Karthik

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ABSTRACT

Toxic gas and smoke are mostly present in most of the caves, that gas and smokes are deduct and monitor from this drone. The goal is to fly above the whole length of the cave while recording and displaying the scene in real time. Cameras mounted on the drones will be looking for gas and temperature. Gas sensor and temperature and humidity sensor cameras also can be mounted to drones, providing a whole new level of security. Camera technology the utility can locate the toxic gas presented area so maintenance crews and civilians can be instructed for them safety. In addition to the cost savings and environmental benefits for human safety, Cahill says that drones may prove more cost-effective than manned inspections. The Grove - Gas Sensor module is useful for gas leakage detection (home and industry). It is suitable for detecting H_2, LPG, CH_4, CO, Alcohol, Smoke or Propane. Due to its high sensitivity and fast response time, measurement can be taken as soon as possible.

The sensitivity of the sensor can be adjusted by potentiometer. Aerial sensor platforms are powerful tools for understanding environmental conditions. Get real time data from anywhere your UAV can take it, including the current temperature and relative humidity conditions. Data logging and archiving accurate sensor data for later reference can also help with overall data analysis and interpretation. Understanding the bigger environmental conditions can help you infer details about how mining and maintenance processes are affected by air pollution and other parameters. These sensors are controlled with Arduino Nano. RF Camera is mounted on a drone for observing a surrounding and inside area of a cave and it helps to locate the exact place where the high level toxic gases present.

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RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT:

MODELING OF FRONT END KIT FOR REVERSE TRIKE

PRINCIPAL INVIGILATOR: Mr.T Arunprasand

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ABSTRACT

This age of automobile revolution tests the limits of vehicle design in terms of performance and fuel usage optimization. The ever increasing threat of pollution and its ill-effects has led to shift from conventional fuels to renewable eco-friendly alternatives. The quest for finding an eco-friendly city maneuverable vehicle has been fulfilled by development of reverse trike- a three wheeled hybrid vehicle (two passenger capacity working on battery) with tadpole configuration (2F-1R). A suspension system is an important aspect of a vehicle which contributes towards improving overall handling under influence of various forces that are encountered during driving. It is mandatory to optimize the system depending upon space and manufacturing constraints. This optimization involves iterative calculations and proper selection of parameters such as tyre width, track width, vehicles wheelbase etc.

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RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT:

DESIGN AND FABRICATION OF GAS DETECTION AND SAFETY CONTROL SYSTEM

PRINCIPAL INVIGILATOR: Mr. Arunbabu.R

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ABSTRACT

Gas leakage is the major issue in residential premises, industrial sector, homes etc. To avoid this accident due to leakage we have to install a gas detection kit. The main purpose of this project is to detect gas leakage and control it automatically after the detection of Liquefied Petroleum Gas leakage. The valve is automatically closed and the gas leakage is prevented. At the same time electric power supply gets shut down and buzzer start beeping to indicate the LPG leakage. LCD will display that there is LPG leakage. For detection of LPG leakage, the gas sensor has been used which is highly sensitive to gas like butane and propane. Liquefied Petroleum Gas is a main source of fuel especially in urban areas because its clean compared to firewood and charcoal. There is always a danger of the gas leakage as a result of negligence or failure on the regulating valve on the gas cylinder which pose a great danger due to highly flammable nature of the gas. Cases of gas related fire has been on the rise and this can be avoided using a gas leakage detection system and thus the need for development of a microcontroller based cooking gas detector.

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RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT:

HAND MOTION CONTROLLED 5AXIS ROBOT USING HAPTIC TECHNOLOGY

PRINCIPAL INVIGILATOR: Mr.S.Karthik

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ABSTRACT

The advancement of technology in the field of robotics leads to the intelligent and isolated operation of robots. But it limits the ability for manipulation and interaction with human. Even though robots are autonomous and intelligent it needs human interaction in applications like diffusing bomb, handling hazardous material and Tele-surgery etc. The proposed Haptic based robotic control system enhanced with embedded image processing gives a novel approach for controlling the robots through haptic sensor input, contours and color recognition inputs. In this project the robotic arm is designed and it's controlled by haptic which increases the ability and efficiency of robot and easy to program a robot. The ultimate purpose of this project is to provide a new way of controlling technique for robots by human machine interaction using ARM.

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RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT:
STUDY OF DEFECTIVE ANALYSIS OF AUTO PARTS BY USING KAIZEN TECHNIQUES

PRINCIPAL INVIGILATOR: Mr.M.Ramesh

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ABSTRACT

This project is mainly focused on satisfying the customer by eliminating the complaints by supplying defect free parts, By implementing the kaizen production technology for the particular product. We are also trying to implement the kaizen methodology in production for better products in the industry.Kaizen methodology is a continuous improvement of process, often is considered to be the building block of all lean production methods. The ultimate objective of this paper is to increase efficiency and productivity in shop floor of parts manufacturing plant through system simplification, process standardization, reducing defect free part and incremental improvements by using modern techniques like Kaizen.

By implementing kaizen, line efficiency has been improved up to 7% and Defect per Hundred units has also reduced. For industries, to remain competitive and retain market share in this global market, continuous improvement of manufacturing system processes has become necessary. Kaizen strives to empower the workers, increase worker satisfaction, facilitates a sense of accomplishment, thereby creating a pride of work. It not only ensures that manufacturing processes become leaner and fitter, but eliminate defects where value is added.Hence for the better production rate and efficiency of the products will be increased and this methodology also helps to make the working environment as user friendly.

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RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT:
OPTIMIZATION OF BOILER OPERATION

PRINCIPAL INVIGILATOR: Mr.G.Raja

CO-PRINCIPAL INVIGILATOR: Mr.S.Vinoth

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ABSTRACT

This project work deals with the optimization of boiler operation in Mettur Thermal Power Station. We have studied in detail about various existing system in boiler and process of power generation and analyzed possibilities of optimization. Accordingly, we propose few points of optimization to improve boiler efficiency. In this regard we propose and suggest optimization three systems, one related to operational area and other two related to maintenance aspects. Various parameters can be optimized like air flow, coal flow usage of coal with less ash content, air fuel ratio, proper evaluations, ensuring minimum reduction of co, increase in insulation parameter and other. We devised a method to increase the boiler efficiency and this can be brought to effect by increasing heat absorption by increasing the economizer area. Based on this area the boiler efficiency at the existing condition is determined and the anticipated improvements after optimization are discussed in this project.

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RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT:

PCB MANUFACTURING USING HYBRID DNC MACHINE

PRINCIPAL INVIGILATOR: Mr. Vibin Stalin.C

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ABSTRACT

Normally, for making PCB, we required more time for designing, printing etching also drilling. Hence to reduce time and more effort we are design this project. In this paper, the design of PCB milling and drilling machine, where the drill holes and circuit path are automatically find out the layout in EAGLE software. This paper focuses on the design and fabrication of automatic PCB milling and drilling machine for large production. When a PCB has no components installed, it is less ambiguously called a printed wiring board (PWB) or etched wiring board. However, the term "printed wiring board" has fallen into disuse. A PCB populated with electronic components is called a printed circuit assembly (PCA), printed circuit board assembly or PCB assembly (PCBA). In informal usage, the term "printed circuit board" most commonly means "printed circuit assembly" (with components). The IPC preferred term for assembled boards is circuit card assembly (CCA), and for assembled backplanes it is backplane assemblies. "Card" is another widely used informal term for a "printed circuit assembly". The purpose of a breakout board is to "break out" the leads of a component on separate terminals so that manual connections to them can be made easily. Breakout boards are especially used for surface-mount components or any components with fine lead pitch.

Advanced PCBs may contain components embedded in the substrates for the circuit layout. In this project, multiple spindle or fixtures are controlled by single control unit, which is used to make the system more stable and accurate for high productivity.

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DEPARTMENT OF MECHATRONICS

RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT:

REDUCTION OF AESTHETIC DEFECTS IN REAR PANAL-CARGO LINE

PRINCIPAL INVIGILATOR: Mr.D.K.Karthikeyan

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ABSTRACT

'Reduction of Aesthetic defects in rear panel-cargo line' to avoid he frequent stopping of the conveyor, increase the productivity and decrease Product quality defects. When the stage Defect increase the production and productive rate will decrease and not achieving the production norms against the line speed of 30,45,67. While producing the sub-assemblies, Quality related issues are arising in various stages and affecting the BIW line conveyor production by increasing metal finishing and rework line concern increased. In this BIW line conveyor 2 Inspection stages- Quality Gate 1 and Gate 2 are available for detecting the quality issues. Quality Gate 1 Inspector inspects Aesthetics of the cab and Quality Gate 2 Inspector inspects all areas and consolidates the issues in the check sheet. On shift base to increasing the defects in Quality Gate 1&2 stages often stop the conveyor and production loss happened.Due to more time taken in metal stage in BIW the operator cannot the completed the work on their stages. So that conveyor will stop between the production hours with in takt time.Reducing defects in rear panel-cargo line will progressively increases the productivity by reducing process delay in line.

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DEPARTMENT OF MECHATRONICS

RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT:
A PROJECT OF CLEANING SMOG AND PARTICULATES BY USING SMOG CLEANER

PRINCIPAL INVIGILATOR: Mr. S.Manikandan

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ABSTRACT

The main objective of this project is to clean smog from the environment by cleaning micro-level dust particles. Smog is a mixture of smoke and fog, it contains a mixture of air pollutants and fog with suspended dust particles, It causes major health problems and reduce visibility. The smog was cleaned in special process by using negative ion generator, the negative ions which are generated by Air-ionizer are negative charged particles that are highly attracted to dust particles, it makes particulates into clusters hence it can be easily captures by filter which is fitted at the outlet. Basically fog is a high dense air with suspended water droplets, the density of fog is reduced by heating the intake fog by heating element and this heating element temperature is controlled by digital temperature controller thermostat which can be programmed as per our convenience. We use timer for controlling intake and exhaust fans motor controls for optimization

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DEPARTMENT OF MECHATRONICS

RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT:

THREE AXIS PNEUMATIC MODERN TRAILERS

PRINCIPAL INVIGILATOR: Mr.S.Rajesh Raja

CO-PRINCIPAL INVIGILATOR:

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ABSTRACT

Trailer has lots of applications in today's world. In industrial and domestic considerations, tippers can pull a variety of products including gravel, grain, sand, fertilizer, heavy rocks, etc. By considering wide scope of the topic, it is necessary to do study and research on the topic of tipper mechanism in order to make it more economical and efficient. In existing system, tipper can unload only in one side by using pneumatic jack or conveyor mechanism. By this research it is easy for the driver to unload the trailer and also it reduces time and fuel consumption.

For making tipper mechanism with such above conditions pneumatic jack mechanism can be used. This paper has mainly focused on above difficulty. Hence a prototype of suitable arrangement has been designed. The vehicles can be unloaded from the trailer in three axes without application of any impact force. The Direction control valves which activate the ram of the pneumatic cylinder which lifting the trailer cabin in require side. By this research it is easy for the driver to unload the trailer and it reduces the time.

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DEPARTMENT OF CHEMICAL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT: Production of fuel oil from waste plastics using pyrolysis

PRINCIPAL INVIGILATOR: Dr.G.Srinivasan

CO-PRINCIPAL INVIGILATOR: Dr.G.Srinivasan

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ABSTRACT

Plastics plays an important role in day-to-day life, as in certain applications. The global production is increased over a year due to the vast applications of plastics in many sectors. The continuous demand of plastics and it caused the plastic wastes accumulation in the landfill consumed a lot of spaces that contributed to the environmental problem. Over 100 million tons of plastic are produced annually worldwide, and the used products have become a common feature at over flowing bins and landfills. So, the plastic wastes were used for the pyrolysis process to get fuel oil that has the same physical properties as the fuels like petrol's, diesels etc. pyrolysis runs without oxygen and in high temperature of about 300-450°C.The waste plastic are subjected to depolymerisation, pyrolysis, thermal cracking and distillation to obtain different value added fuels such as petrol, kerosene, diesel, lube oil etc. The catalyst used here is zeolite (or) $MgCO_3$ in different proportions.

Key words: *pyrolysis, depolymerisation, thermal cracking*

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DEPARTMENT OF CHEMICAL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT: Design of shell and tube heat exchanger to recover waste heat from discharge tank

PRINCIPAL INVIGILATOR: Dr.G.Srinivasan

CO-PRINCIPAL INVIGILATOR: Mr. S. Saravanan

PI/Co PI

HoD

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ABSTRACT

Research has been carried out on the theory, design and construction of waste heat recovery using shell and heat exchanger with blower, especially their use in waste heat recovery for energy consumption in production plant. A shell and tube heat exchanger has been designed and constructed for heat recovery in exhaust from discharge tank.

In this study, experiment was conducted using water as the working fluid to estimate the exhaust waste heat obtainable from discharge tank using an available heat exchanger in markets. To serve the purpose a simplified model of shell and tube heat exchanger has been designed using heat transfer method to cool the hot steam from 100°C to 59°C by using cold water under certain degree temperature. All these observations along with their discussion have been discussed in detail inside the paper.

In present day shell and tube heat exchanger is the most common preferable heat exchanger widely used in oil refinery and paper industry. In production plant steam is an important raw to cook their product. Then after cooling they release the steam from the discharge tank directly into the atmosphere.so, that going to be wasted without no more use.

In our project we recover due waste steam from the discharge tank using the process of shell and tube heat exchanger. They recover maximum conversion of heat from the hot steam to use for further implementation in production plant. By the way the waste to the atmosphere and amount of heat recovered is going to be economically consumed.

KEYWORDS : Heat transfer co-efficient, Heat transfer rate , Pressure drop and Baffle.

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February 26, 2019

Name	:	T. BUBASH
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Name of the Institution	:	Paavai Engineering College, Namakkal.
Departments in Which Undergone Project Work	:	Chemical Baggas Plant
Project Work Title	:	Design of Shell And Tube Heat Exchanger To Recover Heat From Discharge Tank.
Project Work Duration	:	From: 09.01.2019 To: 18.02.2019.

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Departments in Which Undergone Project Work	:	Chemical Baggas Plant
Project Work Title	:	Design of Shell And Tube Heat Exchanger To Recover Heat From Discharge Tank.
Project Work Duration	:	From: 09.01.2019 To: 18.02.2019.

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Project Work Title	:	Design of Shell And Tube Heat Exchanger To Recover Heat From Discharge Tank.
Project Work Duration	:	From: 09.01.2019 To: 13.02.2019.

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Project Work Title	:	Design of Shell And Tube Heat Exchanger To Recover Heat From Discharge Tank.
Project Work Duration	:	From: 23.01.2019 To: 18.02.2019.

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PAAVAI ENGINEERING COLLEGE,

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(AUTONOMOUS)

DEPARTMENT OF CHEMICAL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT: Extraction of biodiesel from mixture of nuts and characterization of produced biodiesel

PRINCIPAL INVIGILATOR: Mr.S.Kirubhakaran

CO-PRINCIPAL INVIGILATOR: Mr.S.Kirubhakaran

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ABSTRACT

Due to the concern on the availability of recoverable fossil fuel reserves and the environmental problems caused by the use those fossil fuels, considerable attention has been given to biodiesel production as an alternative to diesel. This has resulted in environmentally friendlier alternatives which allow obtaining energy from nonconventional and renewable energy sources with a similar efficiency output. In current trend alternative fuel can be produced in different sources like vegetable oil, animal fats and algae. It shows the greatest energy potential and will be the main topic in this work. Basically vegetable oil contains triglycerides and it can be undergoing into chemical process to change alternative fuels. When transesterification process involved to change chemical bonds in triglycerides and to production biodiesel. In project mainly focused to extraction of oil by using hexane solvent and it can undergo in the transesterification process with alkaline catalyst. In different composition ratio maintain in mixture of seeds to extraction of lipid content. Mixed seed oil has a wide variety of fatty acid composition, depending on their ratio. The produced Biodiesel will be purified and characterized by GC-MS and ASTM standard analysis respectively.

Keywords: *Extraction, Triglycerides, Transesterification, Lipid content and Column Chromatography*

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DEPARTMENT OF CHEMICAL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT: Production of biopesticides from mixture of seeds (Custard apple & neem seeds)

PRINCIPAL INVIGILATOR: Mr.S.Kirubhakaran

CO-PRINCIPAL INVIGILATOR: Mr.S.Kirubhakaran

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ABSTRACT

Most of the conventional pesticides affect the humans, environmental and it also shows its effect on soil for reducing the nutrients. To overcomes these problems bio pesticides have been used for protecting the plants from the action of insects. Custard apple and Neem seeds, we generally used as bio pesticides. In this present work, custard apple (*Annona squamosa*) and Neem (*Azadirachta Indica A. Juss*) seeds are blended to improve the bio pesticide activity. The oil is more suitable for all the common pest to protect crops. The oil is extracted from these seeds using solvents like n-hexane or methanol and etc. The produced oil is compared and analyzed for pesticide ingredient on the basis of UV spectroscopy test. Physical and chemical properties of the oil will also be tested and compared. Studies on formulation, improvement of properties of oil will also be done.

Keywords: *Custard apple and Neem seeds, extraction, n-hexane, UV spectroscopy.*

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DEPARTMENT OF CHEMICAL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT: Synthesis and characterization of nanomaterials from leather finishing applications

PRINCIPAL INVIGILATOR: Ms.P.Santhiya

CO-PRINCIPAL INVIGILATOR: Ms.P.Santhiya

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ABSTRACT

The present work is focused to develop the ZnO based nanoformulations to enhance the performance properties in leather finishing applications. In this present investigation, ZnO nanoparticles were synthesized by precipitation technique and using them along with top coat formulations of polyurethane (PU) finishes and it improving their performance properties. The morphology, composition and structure of the ZnO nanoparticles were characterized using Scanning Electron Microscopy (SEM), X-ray Diffraction (XRD), Ultra Violet Spectroscopy (UV) and Zeta potential analyses. ZnO nanoparticles were synthesized and incorporated into the conventional leather finishing ingredients. These formulations were coated on the leather by spray coating and the performance properties of the coated leather were evaluated. Moreover, these ZnO based nanoformulation systems were coated on leathers from different leathers such as cow and goat.

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Sanjeev

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I wish him success in life.

Sanjeev

(Dr. SANJEEV GUPTA)

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DEPARTMENT OF CHEMICAL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT: Energy savings in rapid displacement heating plant

PRINCIPAL INVIGILATOR: Dr.K.Muthamizhi

CO-PRINCIPAL INVIGILATOR: Dr.K.Muthamizhi

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ABSTRACT

The Rapid Displacement Heating is an integral part of the Kraft pulping process in the pulp and paper industry. In the Kraft process, wood chips are cooked in an aqueous solution, known as "White Liquor", containing primarily sodium hydroxide (NaOH) and sodium sulphide (Na_2S) under pressure in a digester for manufacturing pulp. After cooking, the pulp is separated from residual liquor for paper manufacturing. The residual liquor, which contains wood lignin, organic materials, and inorganic compounds, then undergoes a series of evaporation processes to increase the concentration of solids from approximately 15 to 70 wt% or higher. This liquor with high concentration of solids is known as "Black Liquor." The various process involved in Rapid Displacement Heating plant are cooking Bleaching and screening. Three stages of Bleaching are carried out here (I.e. Do Bleaching, EOP bleaching, D1 bleaching) and also three stages of screening takes place. The equipment in RDH plant are digester, accumulator and hot water tank. These Equipment consumes around 55tons of steam per day which is highly expensive. The types of steam used here are Low pressure steam for chip packing, Do mixer and D1mixer and high pressure steam for ODL trio mixer. Our aim is to reduce the energy consumption in RDH plant. In order to achieve this, we have identified the energy losses of all the equipment in RDH plant by calculating the mass balance and energy balance. To prevent the energy loss, we have designed a new heat exchanger and introduced into the accumulator. This reduce the cooking time of pulp and steam consumption in Hot water tank and accumulator and saves up to 15tons of steam consumption per day, thus the energy is saved in the RDH plant by using the heat exchange we have designed.

Keywords: Wood, RDH plant, Digester, white liquor, black liquor, heat exchanger

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DEPARTMENT OF CHEMICAL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT: Experimental studies on Strychnos potatorum seed as adsorbent for effluent treatment

PRINCIPAL INVIGILATOR: M.S.Manoj Kumar

CO-PRINCIPAL INVIGILATOR: Mr.M.MohanKuppusamy

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ABSTRACT

Versatile applications of *Strychnos Potatorum* seed in various wastewater processes signify their command over other seeds. An attempt has been made to highlight the efficiencies of seeds of *Strychnos Potatorum* in effluent wastewater treatment. Activated carbon adsorption has been proven to be the most widely and effective adsorbents for the removal of heavy metals from the water/wastewater. Its adsorption properties are mainly owing to the high surface area, high porosity, high mechanical strength and high degree of surface reactivity. Its application was restricted because of the high cost and which is difficult to recover after the treatment. The preparation of new and effective low-cost adsorbent is more essential for the removal of contaminants from the water/wastewater. The adsorption system was optimized by controlling the operating parameters such as bed height, flow rate, initial concentration and solution pH for the maximum removal of contaminants in a continuous mode operation. The optimum bed height, flow rate, initial concentration and solution pH were observed to the *Strychnos Potatorum* seed. Results shows that optimum parameters of *Strychnos Potatorum* seed as primary adsorbent gives maximum effectiveness. This effectiveness of *Strychnos Potatorum* seed in the removal of Cr ions was evaluated at different pH, initial concentration, bed height and flow rate has been investigated. The isotherm and model to fit the equilibrium data has also been investigated by Langmuir, Freundlich isotherm & Thomas and Bed depth service time (BDST) models.

Keywords: Effluent treatment, Adsorption, *Strychnos Potatorum* and Isotherms.

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DEPARTMENT OF CHEMICAL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT: Zero liquid discharge system at mettur thermal power station-II

PRINCIPAL INVIGILATOR: M.S.Manoj Kumar

CO-PRINCIPAL INVIGILATOR: M.S.Manoj Kumar

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ABSTRACT

This paper presents a study of the potential of industrial wastewater reuse in mettur thermal power station. A comprehensive review of the processes involved, industrial waste generation and water requirements was carried out, and areas of potential improvement were identified. They include a water treatment system, blow-down system, flue gas desulfurization and finding alternative process water sources such as using sewage treatment plant effluent as make-up water. There is significant water pumped from the plant to the sewage plant and irrigation. Much of this wastewater could be treated by filtration, including reverse osmosis, and recirculated in the plant as process water. Water can very likely be conserved in the power plant by good operating practices such as preventative maintenance, good housekeeping, spill prevention, controlled storm run-off, cleaning techniques using minimum water, and a good training program to ensure program success. Since water conservation is very essential, long-term plans should include consideration of changing the basic steam turbine technology to either the combined system or gas- and/or diesel-driven turbines at this Power Plant.

Key words: desulfurization, blow-down system, reverse osmosis, make-up water

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Under the guidance of Er. R. LAKSHMI NARAYANAN M.Sc., A.I.C., M.I.Ch.E at
Mettur Thermal Power Station-1, Mettur Dam From 19.1.19 To 25.3.19

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PAAVAI ENGINEERING COLLEGE,

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DEPARTMENT OF CHEMICAL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT: Biosorption of chromium ion from wastewater using Hydrilla verilicata

PRINCIPAL INVIGILATOR: M.S.Manoj Kumar

CO-PRINCIPAL INVIGILATOR: M.S.Manoj Kumar

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ABSTRACT

Contamination of surface water bodies by the discharge of untreated industrial effluent with toxic metal has very important matter of many industries. The increase in the load heavy metal have caused imbalance in the aquatic system. Metals like cadmium chromium zinc etc effect the balance of nature.

This project is to reduce the level of the chromium content from industrial influent, the use of bio adsorbent *Hydrilla Verticillata* accelerate the value of this project which maximises the efficiency of adsorption compare to other existing methods. Wastewater from industries like dye and leather contain high amount of metal ions like chromium, which is easily adsorbed inside the adsorption column when wastewater is passed through it. Bio-adsorbent is enhanced by using Fenton's reagent which is a combination of H_2O_2 and $FeSO_4$ in the ratio 1: 5. Comparison connecting both adsorption with modified hydrilla by Fenton's reagent and hydrilla alone is carried out.

This project enables us to find the value of biosorbent which can be used to treat water and to remove the chromium content in it. After the completion of this project we could reduce the chromium content from sample waste water. Thus, this project has a higher scope in improving the quality of water after influent treatment.

Key words: *Hydrilla verticillata, Fenton's reagent, Biosorbent, Chromium*

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DEPARTMENT OF CHEMICAL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT: Engine performance and characteristic of biodiesel from various vegetable oil using thermal treated method

PRINCIPAL INVIGILATOR: Ms.P.Santhiya

CO-PRINCIPAL INVIGILATOR: Ms.P.Santhiya

PI/Co-PI

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ABSTRACT

The thermal treated of jatropha oil, sunflower oil and neem oil were evaluated for the production of biofuels as an alternative to fossil fuels. This study includes the test of thermal decomposition for the biofuel production from vegetable oil. Thus an attempt has been made to study the vegetable oil with and without inert material in a batch reactor. The experiments were carried out under at a temperature of 150 to 250°C and atmosphere pressure. After the thermal cracking of vegetable oil to study about the Decarboxylation, Decarbonylation, polymerization and aromatization of treated vegetable oil. From the results we are comparing the studies of the exhaust gas from diesel engine using diesel and raw/ treated vegetable oil blend and also compare the physical characteristics of the product obtained (density, specific gravity, higher heat value, flash point and kinematic viscosity), were in line with ASTM D6751 (B100) standards.

Keywords: Thermal-cracking, Vegetable oil, Diesel, Biofuel, Exhaust gas, ASTM.

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DEPARTMENT OF CHEMICAL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT: Production of methane gas from bagasse wash effluent

PRINCIPAL INVIGILATOR: Mr. R. Jothibabu

CO-PRINCIPAL INVIGILATOR: Mr.Sudharsan

PI/Co PI

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ABSTRACT

Upflow Anaerobic Sludge Blanket (UASB) reactors have been widely used for the production of biogas. The treatment of bagasse washwater, which is generated after washing the stored bagasse before its use in the paper manufacture. The bagasse washwater, treated earlier in open lagoons is now treated by the anaerobic process using UASB reactor. This is based upon an operating unit, shows that the UASB reactor reduces COD of washwater by 85% - 90%, and results in significant emission reduction. The energy generated in the form of methane.

Key words: UASB reactor, Bagasse wash water & Biogas

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HR/31/CHEM/2019/01/24 March 21, 2019

Name	:	J. GAYATHRI
Department	:	B. Tech (Chemical)
Name of the Institution	:	Paavai Engineering College, Namakkal.
Departments in Which Undergone Project Work	:	R & D and QC
Project Work Title	:	Production of Methane Gas From Bagasse Wash Effluent
Project Work Duration	:	From: 09.01.2019 To: 07.02.2019

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March 21, 2019

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Departments in Which Undergone Project Work	:	R & D and QC
Project Work Title	:	Production of Methane Gas From Bagasse Wash Effluent
Project Work Duration	:	From: 09.01.2019 To: 07.02.2019

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Departments in Which Undergone Project Work	:	R & D and QC
Project Work Title	:	Production of Methane Gas From Bagasse Wash Effluent
Project Work Duration	:	From: 09.01.2019 To: 07.02.2019

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PAAVAI ENGINEERING COLLEGE,

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(AUTONOMOUS)

DEPARTMENT OF CHEMICAL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT: Novel study of essential anise oil from anise (Illicium Verum)

PRINCIPAL INVIGILATOR: Mr.D.Sreenivasan

CO-PRINCIPAL INVIGILATOR: Mr.D.Sreenivasan

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ABSTRACT

Anise is a member of *Illiciaceae* family originates from Asian countries. The essential oil is extracted from the aniseed and anise also. Extraction of oil from Aniseed and anise was performed by using Steam Distillation Method. Anise oil was playing roles in majorly medicinal and flavoring purposes, alcoholic and non-alcoholic beverages. The analysis of chemical composition was done by UV spectroscopy and physical analysis of anise oil such as saponification value, specific gravity, acid value, iodine value, etc. was done in the laboratory. The yield of anise oil obtained from the steam distillation process was varied with temperature, time and quantities of raw material. The effective separation of essential oil from this process obtained in 65-75^{0}C temperature.

Key words: *Star anise, Essential oil, Steam distillation, UV spectroscopy*

PAAVAI ENGINEERING COLLEGE,

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(AUTONOMOUS)

DEPARTMENT OF CHEMICAL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2018-2019

TITLE OF THE PROJECT: CO_2 reduction from flue gas using monoethanolamine

PRINCIPAL INVIGILATOR: Dr.Muthamizhi

CO-PRINCIPAL INVIGILATOR: Dr.Muthamizhi

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ABSTRACT

The primary aim of this work is to analyze and describe the process of capturingcarbon dioxide from the flue gases by means of chemical absorption. Aqueous mono ethanolamine, ranging between 30-40 wt% MEA, has been selected for removing CO_2 from the combustion gases. The concentration of CO_2 in the flue gases varied from 12 to 20 %after combustion and from 4 to 8 % after the CO_2 absorber. CO_2 absorption into aqueous MEA was relatively good with an overall absorption efficiency of 66 %. Secondly the process of coal combustion with biomass waste in a fluidized bed reactor was investigated. Experimental test results have shown that the emissions of CO_2, SO_2 and NOx have been significantly reduced during the removal processes and have proved the viability of the proposed systems. Recent research on CO_2 capture is focusing on the optimization of CO_2 absorption using amines (mainly mono ethanolamine—MEA) in order to minimize the energy consumption of this very energy- intensive processs and improve the absorption efficiency. Process optimization is always required and this research is worth and necessary. However, the main concern arises when thinking of the overall process: solvent production, solvent use and regeneration, and environmental effects related to its use/emissions. The production of MEA from ammonia involves important CO_2 emissions during the Haber–Bosch process. The regeneration of the solvent after the absorption is also an indirect source of CO_2 related to the use of fuels (i.e., combustion processes for energy supply). Thus, the evaluation of the overall balance of CO_2 emitted and captured is essential to determine the efficiency of the process. In addition, other environmental impacts associated to the toxicity and environmental fate of the solvent have to be considered. The use of MEA and other amines in CO_2 capture is a point of concern and a global application does not seem to be the best strategy. This review aims at giving an overview of th main implications of using MEA as absorption solvent for CO_2 capture together with the last advances in research to improve the conventional absorption process. Furthermore, alternatives of using other solvents and/or using other technology and their advantages and weak points will

be briefly provided. An approach oriented to produce CO_2-based products with economic value that can be reintegrated in a closed carbon loop, reducing the use of fresh materials and decreasing the production cost, should be the final objective of current research on CO_2 capture.

Academic Year 2017-2018

PAAVAI ENGINEERING COLLEGE,
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(AUTONOMOUS)

DEPARTMENT OF CIVIL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR; 2017-2018

TITLE OF THE PROJECT: EXPERIMENTAL STUDY ON PROPERTIES OF BACTERIAL CONCRETE

PRINCIPAL INVIGILATOR: A.ARUN

CO-PRINCIPAL INVIGILATOR: Dr.S.SUKUMAR

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ABSTRACT:

The Bacterial Concrete is a concrete which can be made by embedding bacteria in the concrete that are able to constantly precipitate calcite. Bacterial concrete or selfhealing concrete fills up the cracks developed in structures by the help of bacterial reaction in the concrete after hardening. Due to human mistakes, incorrect handling and unskilled labours. An efficient building is hard to sustain its designed life. Many problems like weathering, cracks, leaks and bending etc., arises after the construction. To overcome this types of problems, many remedial procedures are undertaken before and after the construction. When the water comes in contact with the unhydrated calcium in the concrete, calcium hydroxide is produced by the help of bacteria, which acts as a catalyst. This calcium hydroxide reacts with atmospheric carbon dioxide and forms limestone and water. This extra water molecule keeps the reaction going. The M20 grade bacterial concrete having higher compressive strength then the normal M25grade concrete. The self-healing property is successfully achieved in bacterial concrete. Bacterial concrete technology has proved to be better than many conventional technologies, because of its eco-friendly nature and very convient for usage.

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DEPARTMENT OF CIVIL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR; 2017-2018

TITLE OF THE PROJECT: BEHAVIOUR OF SELF COMPACTION GEOPOLYMER CONCRETE USING SILICA FUME WITH VARIOUS REPLACEMENT OF R-SAND AND M-SAND

PRINCIPAL INVIGILATOR: S.SHARMILADEVI

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ABSTRACT

The Mechanical properties of Self Compacting Geo polymer Concrete (SCGC) by partial replacement of Fly ash with Silica Fume was investigated in this paper. The work focused on the concrete mixes with a fixed water-to-geopolymer solid (W/G's) ratio of 0.33 by mass and a constant total binder content of 450 kg/m3. The mass fractions of silica fume that replaced fly ash in this research were 0wt%, 5wt%, 10wt%, and 15wt%. The workability related fresh properties for molarity of 8M, 10M, 12M, and 14M of SCGC were assessed through slump flow,T50cm Slump flow, V-funnel, L-box and U-Box test methods. Hardened concrete tests were limited to compressive, splitting tensile and flexural strengths, for the age of 7, 14 and 28 days. After casting the specimens along with steel mould were placed in the oven for 48 hours after that the specimen are maintained in Ambient curing until the test day. The results indicate that the addition of silica fume as a partial replacement of fly ash results in the loss of workability; nevertheless, the mechanical properties of hardened SCGC are significantly improved by incorporating silica fume, especially up to 10wt%.Self-compacting geopolymer concrete is prepared from source materials of Fly ash and Silica Fume mixed with alkali activators such as Sodium Hydroxide and sodium silicate. Super Plasticizer is added to achieve the properties of self compacting concrete.

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DEPARTMENT OF CIVIL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR; 2017-2018

TITLE OF THE PROJECT: PLANNING, ANALYSIS AND DESIGN OF HOSPITAL BUILDING

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ABSTRACT

The main necessity of this project is to get knowledge and an experience in the field of design by using IS codes, software and applying the design principles in a practical way.

This report discusses on the Design of a Hospital Building. This project mainly includes the analysis and design of the building. The load conditions as per code IS875 (PART 1&2)1987 were considered. The slab and beams are designed for bending, shear and deflection limit.

In this paper, the hospital building with three floors were analyzed and designed. The Plan and Reinforcement details are drawn in AutoCAD. The analysis made in manual. Designs are made manually by using is 456;2000. For the designing of slab, beam, column, footing & staircase, septic tank the limit state method of design has been adopted. Concrete grade of M_{25} and HYSD bars of grade Fe_{500} are used. Plan and detailing are enclosed in this project.

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DEPARTMENT OF CIVIL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR; 2017-2018

TITLE OF THE PROJECT: EXPERIMENTAL STUDY ON STRENGTHENING BEHAVIOUR OF SIFCON LAMINATES

PRINCIPAL INVIGILATOR: B.THIYAGARAJAN

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ABSTRACT

Now a day's natural and manmade disaster like Earthquake, Cyclone etc., play an important role in the behaviour of structures. Hence the structures has to be designed in a good manner which resists higher seismic and impact forces. Strengthening of existing RC framed buildings for impacting seismic resistance is a challenging engineering problem. Many of the existing buildings are found to have inadequate strength, ductility, or stiffness because they were designed and build when modern seismic requirements did not exist. SIFCON posses high strength, improved ductility, impact resistance and enhanced energy absorption capacity, so it is used as an option for strengthening the conventional reinforced concrete beam. The main thrust of the study has been aimed at characterizing the flexural strength of the beam strengthened with precast SIFCON laminate externally. Slurry infiltrated fibrous concrete (SIFCON), an exceedingly improved version of conventional fibre reinforced concrete (FRC), is a unique construction material having unique properties in the areas of both strength and ductility. SIFCON being a new kind of fibre reinforced composite material, limited literature is available regarding its application as structural element. In the present study, investigations are carried out to study the behaviour of reinforced concrete beams with SIFCON laminates. Experimental programmes have to be carried out to study the behaviour of flexural and shear RC beams with precast SIFCON laminates. The concrete mixes for RC beams have to be designed to obtain a concrete grade of M30. The steel fibres used in the study were hooked end fibres having 0.6mm diameter and aspect ratio of 60.

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DEPARTMENT OF CIVIL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR; 2017-2018

TITLE OF THE PROJECT: PLANNING, ANALYSIS AND DESIGN OF THE COMMUNITY BUILDING

PRINCIPAL INVIGILATOR: B.THIYAGARAJAN

CO-PRINCIPAL INVIGILATOR: S.KEERTHIKALPANA

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ABSTRACT

The purpose of Community hall is for the conduction of meeting or any celebration or for conducting the programs. There are numerous public halls which are used for different purposes. Here the community hall is planned and designed for multipurpose. Usually, the size of the community hall depends upon the amount of population in the area where it is constructed. Normally in the convention and wedding halls, the proper ventilation is made necessary as the more number of people gathered in that hall. The soil and the ground conditions should be initially tested to know the bearing capacity of the soil. As per the result, the foundation is made in construction. The plinth area of the community hall is 6250 Sq.ft. This community hall is constructed as four storeys. In stilt, the parking is made and in ground floor, the dining hall is constructed. In first floor, the reception hall is made and in second floor, the rooms are constructed. Proper sanitary requirements and practical conveniences are also considered while designing the project. The proposed Community hall is to be constructed at shoolagiri village, near to Hosur.

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DEPARTMENT OF CIVIL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR; 2017-2018

TITLE OF THE PROJECT: EXPERIMENTAL STUDY ON PROPERTIES OF PERVIOUS CONCRETE

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ABSTRACT

Pervious concrete is a special type of concrete with high porosity used for concrete flat work applications that allow water from precipitation and other sources to pass directly through, thereby reducing the surface runoff from a site and allowing ground water recharge. This Pervious Concrete is a Homogeneous mixture of cement, water and coarse aggregate. The exclusion of fine aggregate produces voids and reduces the dead load in concrete by increasing the porosity.

Compressive strength, Split Tensile strength and Flexural strength of No-fines concrete does depend primarily on porosity, shape, size and gradation. No-fine concrete has been casted with different mix proportions such as 1:6, 1:8, 1:10 with 12mm and 20mm gravel size with OPC53 Grade cement.

The materials are mixed thoroughly, and then casted into the specimens. The specimens are released from moulds and placed in the curing tanks for curing. Each set of specimen of different aggregate sizes and mix proportions are taken for testing at intervals of 7days, 14days and 28days. The experimental results are recorded in tables and plotted in charts. The final result of efficient size of aggregate and the mix proportion is determined.

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DEPARTMENT OF CIVIL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR; 2017-2018

TITLE OF THE PROJECT: PLANNING, ANALYSIS AND DESIGN OF A RESIDENTIAL BUILDING

PRINCIPAL INVIGILATOR: S.GAYATHRI

CO-PRINCIPAL INVIGILATOR: M.RAJKANNAN

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ABSTRACT

In this project, planning, analysis, and structural design has been made for a residential building based on all relevant Indian Standard code of practice. Detail drawings pertaining to the structural design of residential building are presented. All the structural members like slabs, beams, columns and footings are designed using Indian Standard Code IS 456-2000, and design aid SP-16.

The structural components are designed by limit state method. Materials were used as specified by National Building Code. Concrete M_{20} grade and Fe 415 steel bars were considered for all the design. Dog-legged staircase is used in this residential building. Footing is designed as isolated and the detailing drawings of reinforcement are enclosed in this report. All the dimensions are given in metric units.

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DEPARTMENT OF CIVIL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR; 2017-2018

TITLE OF THE PROJECT: PLANNING, ANALYSIS AND DESIGN OF A WASTE WATER TREATMENT BY AN ACTIVATED SLUDGE PROCESS

PRINCIPAL INVIGILATOR: V.MENAKA

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ABSTRACT

It is generally to allow human and industrial effluents to be disposed of without danger to human health or unacceptable damage to the natural environment. Waste water treatment is to extract pollutants, remove toxicants, neutralize coarse particles, kill pathogens. so that quality of discharged water is improved to reach the permissible level of water to be discharged into water bodies or for agricultural land. The quantity of water to be treated is 16 (Million litres per day) in this plants. The quantity of water passes through the aeration tank , due to the gravitational force the suspended particles (sand , silt , organic materials) gets deposited in the bottom of the tank. For the settled particles, the detention time of the tank is taken as 5 hours. The dimensions of the tank are derived from the design principles of the aeration tank and the dimensions of the aeration tank is taken as 20m × 6m × 3m. The tank is constructed with Reinforced concrete walls and the baffle walls are placed for the particle deposition . The analysis was carried out using STAAD pro.

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DEPARTMENT OF CIVIL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR; 2017-2018

TITLE OF THE PROJECT: ACCESSING THE SUITABILITY OF USING BANANA PITH JUICE AS A NATURAL COAGULANT FOR WASTE WATER TREATMENT PLANT

PRINCIPAL INVIGILATOR: A.KALAIVANI

CO-PRINCIPAL INVIGILATOR: K.SANTHOSHKUMAR

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ABSTRACT

Plant waste product generation is inevitable from different sectors especially from agricultural sector. Huge quantity of dyes and pigments produced annually throughout the world by textile industries and domestic water discharged principally from residential and other processing industries requires further treatment for specific end-use. Disposal of the effluents from these industries causes damage to environment. The effectiveness of banana stem juice as a natural coagulant for treatment of domestic and textile wastewater was investigated. Five main parameters were studied, namely, pH, turbidity, total suspended solids, chemical oxygen demand (COD) and bio-chemical oxygen demand(BOD) of effluent. Coagulation experiment using jar test were performed with a flocculation system where the effects of domestic and textile wastewater were examined. The highest recorded removal percentage by banana stem juice for domestic and textile wastewater were 78.15% and 84.09%, respectively, observed for effluent at dosage 20ml and 10ml. It could be concluded that banana stem juice showed tremendous potential as a natural coagulant for waste water treatment purposes and can possibly be replaced by using low cost, more effective and readily available waste, could be applied in pretreatment stage of wastewater prior to secondary treatment.

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DEPARTMENT OF CIVIL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR; 2017-2018

TITLE OF THE PROJECT: PLANNING, ANALYSIS, DESIGN OF SCHOOL BUILDING

PRINCIPAL INVIGILATOR: A.KALAIVANI

CO-PRINCIPAL INVIGILATOR: M.SUBRAMANI

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ABSTRACT

Our school building is located at salem having an area of 8500 sq.m. In our school building, we have provided 6 classrooms for higher secondary and 10 classrooms for 6^{th} to 10^{th} .We have provide separate Laboratory for practical exposure for students.

In this project A School building with (G+1) storey has been analysed by using STAAD.Pro and manually designed by using SP-16 and IS-456.The specifications are provided as per NBC.

Most of the buildings in India are designed to resist gravity load only. These building may perform well under gravity load, but the performance may be very; poor under lateral loads due to earthquake. The process of design commences with planning of the structure, primarily to meet its functional requirements. It is emphasized that any structure to be constructed must satisfy the need efficiently for which it is intended and shall be durable for its desired life span. The purpose of standards is to ensure the safety and keeping careful balance between economy and safety.

STAAD.Pro is the new advancement in structural engineering. This software is used for analysis and design or beams, column and slabs. The modelled structure is analysed under various load condition such as dead load, live load, and combination of above cases. As a result of the analysis, shear force, bending moment and support reaction are evaluated. Based on the analysed results, the structure is designed manually for economical structure .

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DEPARTMENT OF CIVIL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR; 2017-2018

TITLE OF THE PROJECT: PLANNING, DESIGN, ANALYSIS OF RESIDENTIAL BUILDING

PRINCIPAL INVIGILATOR: K.VIVEK

CO-PRINCIPAL INVIGILATOR: Dr.G.S.VENKATASUBRAMANI

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ABSTRACT

The report to accompany the "CONSTRUCTION OF RESIDENTIAL BUILDIN". This project is consisting Plannin, Designing of building. This building is having ground floor with plinth area of 180m^2.

The building is consisting square R.C.C column of 230mm x 230mm size with square type footing. The size of footing is 1440mm x 1440mm and with 200mm uniform thickness. Below the footing, a 150mm thick P.C.C 1:5:10 is provided as base concrete. The total depth of foundation is 1200mm below ground level. The wall thickness is 230mm with 1st class bricks. The height of ceiling is 3000mm

In this plan necessary rooms are provided for hall, kitchen, bedroom-1, bedroom-2, store room and toilet.

Necessary two way slabs are provided for a thickness of 150mm.The overall depth of beam is 250mm as per design.

The floor is finished with CM 1:3mm thick over a base course of P.C.C 1:5:10, 130mm thick. Doors and windows are provided with two coats of white washing are applied over one priming coat over the plastered surface of brickwork.

Necessary lumpsum provisions are made towards internal and external water supply and sanitary arrangement and also for electrification works. A lumpsum provision is also given for unforeseen item, supervision charge. Labour welfare provision is also made @ 0.3% asper the P.W.D of Tamilnadu government.

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DEPARTMENT OF CIVIL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR; 2017-2018

TITLE OF THE PROJECT: STUDY ON THE BEHAVIOUR OF COLD FORMED STEEL CHANNEL SECTION UNDER AXIAL COMPRESSION

PRINCIPAL INVIGILATOR: K.VIVEK

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ABSTRACT

In this study, the cold formed steel (CFS) compression members were studied to understand the buckling behavior of the sections under axial compression. The specimens were modeled to form a lipped channel section with edge and intermediate stiffeners. From this different channel sections with edge and various forms of intermediate stiffeners in flange and web were produced. Cold formed steel sheets of thickness were 1.2mm and 2mm was used in this study. To determine the nominal buckling load carried by the specimens and the buckling behavior, finite element software package of ANSYS 12.0 was used to perform the numerical analysis. The finite element analysis was performed on fixed supports of length 500mm, 1000mm and 1500mm. The numerical results obtained from the Finite Element Modeling (FEM) were compared with the theoretical analysis results calculated using Direct Strength Method (DSM) according to the North American specification (NAS) for cold formed steel section.

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DEPARTMENT OF CIVIL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR; 2017-2018

TITLE OF THE PROJECT: PLANNING, ANALYSIS AND DESIGNING OF OXIDATION DITCH

PRINCIPAL INVIGILATOR: A.JAYAPAL

CO-PRINCIPAL INVIGILATOR: K.R.PRABHAKARAN

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ABSTRACT

This design project is about constructing Oxidation ditch with a secondary clarifier used for wastewater treatment for the population of about 10,000 people for a lifetime of 50 years.

It has the area of 1937.03m^2

Here the oxidation ditch is constructed by using retaining walls. And concrete slab foundation.

It has been concluded that the oxidation ditch is safe and efficient throughout its lifetime.

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DEPARTMENT OF CIVIL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR; 2017-2018

TITLE OF THE PROJECT: EXPERIMENTAL INVESTIGATION ON INFLUENCE OF CRUMB RUBBER POWDER IN RIGID PAVEMENT CHARACTERISTICS

PRINCIPAL INVIGILATOR: N.MOORTHI

CO-PRINCIPAL INVIGILATOR: R.RAMYA

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ABSTRACT

Fine aggregate in rigid pavement is important construction material. Replacement of crumb rubber powder which gives good performance.

The use of crumb rubber powder has some advantages, its has good compressive strength. In this study the experimental investigation was carried out to give the high strength in the pavement.

However the specimen of size of cube (150mm×150mm×150mm) and prism (100mmx100mmx500mm) where cast for different percentage of crumb rubber powder (5% to 20%) and compressive and flexural strength was studied for different proportions

Use of crumb rubber powder as a raw material for the construction of pavement is not only viable alternative to fine aggregate but also solution to reduce the resource depletion. In the present work the attempt has made to find out the maximum compressive and flexural strength by adding crumb rubber powder in the pavement

The results show the variation of compressive and flexural strength for different ratio of crumb rubber powder added in the pavement. From the results it was inferred that, the optimized compressive and flexural is obtained for 5% replacement of crumb rubber powder for fine aggregate

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DEPARTMENT OF CIVIL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR; 2017-2018

TITLE OF THE PROJECT: PLANNING, ANALYSIS AND DESIGN OF RESIDENTIAL BUILDING

PRINCIPAL INVIGILATOR: N.MOORTHI

CO-PRINCIPAL INVIGILATOR: M.TAMILARASI

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ABSTRACT

Most of the buildings in India are designed to resist gravity load only. These building may perform well under gravity load, but the performance may be very; poor under lateral loads due to earthquake. The process of design commences with planning of the structure, primarily to meet its functional requirements. It is emphasized that any structure to be constructed must satisfy the need efficiently for which it is intended and shall be durable for its desired life span.

The purpose of standards is to ensure the safety and keeping careful balance between economy and safety.In this project A Residential building with (G+1) storey has been analysed by using STAAD.Pro and manually designed by using SP-16 and IS-456.

STAAD.Pro is the new advancement in structural engineering. This software is used for analysis and design or beams, column and slabs. The modelled structure is analysed under various load condition such as dead load, live load, and combination of above cases. As a result of the analysis, shear force, bending moment and support reaction are evaluated. Based on the analysed results, the structure is designed manually for economical structure .

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DEPARTMENT OF CIVIL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR; 2017-2018

TITLE OF THE PROJECT: PLANNING, ANALYSIS AND DESIGN OF AUDITORIUM BUILDING

PRINCIPAL INVIGILATOR: T.S.KUMANAN

CO-PRINCIPAL INVIGILATOR: M.GOBINATH

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ABSTRACT

Education of important for all human being in the universe and educational institutions are coming up everywhere. The conduct of functions like annual day celebrations, cultural and other important meeting require large area and facilities to accommodate all the persons. In this point of view, an Auditorium building is planned to construct and may also be used for projected videos and films.

This proposed building is a framed structure with a seating capacity of **450persons**. The size of the proposed building is **12x36m** and the total area of the building is **432m^2**, which include projector room and toilet blocks. Auditorium building has planned with grid beam and proper ventilators, space requirements and clear view from the audience. Design of structural element like column, Footings, beams, slabs are executed in this project.

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RESEARCH PROJECT

ACADEMIC YEAR; 2017-2018

TITLE OF THE PROJECT: PLANNING, ANALYSIS AND DESIGN OF MULTI-SPECIALITY HOSPITAL BUILDING

PRINCIPAL INVIGILATOR: K.SHARMILA DEVI

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ABSTRACT

Multispeciality hospital building provides medical service to the people. The main purpose of our project is satisfies the medical needs of people. In this project we concerned about the plan, analysis and design of Multispeciality hospital building.

The plan of the hospital building is done by using AUTO CADD software. The analysis of structures were done by using STAAD.ProV8 as well as IS 456:2000 Code of practice for plain and reinforced cement concrete. The design of RCC slab, beam, column, footing and stair case is based on limit state method as per IS 456:2000 code.

In this paper, the Multispeciality hospital building with two floors were planned, analysed and designed.

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RESEARCH PROJECT

ACADEMIC YEAR; 2017-2018

TITLE OF THE PROJECT: DESIGN & ESTIMATION OF RIGID PAVEMENT

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ABSTRACT

This report outlines the Earth work, Design and Estimation of Rigid pavement in the existing earth road of 500 m length and 3.5 m breadth in the bus yard of Paavai Engineering College. Roads make a crucial contribution to economic development and growth and bring important social benefits. They are of vital importance in order to make a nation grow and develop. In addition, providing access to employment, social, health and education services makes a road network crucial in fighting against poverty. Roads open up more areas and stimulate economic and social development. For those reasons, road infrastructure is the most important of all public assets.

Considering these points the Design and Estimation of Rigid pavement has been proposed for a length of about 500m. Initially levelling of Earth is carried out using the levelling equipment. Design of Rigid pavement is made with reference to IRC 58:2002, IRC 15:2002, IRC SP 49:1998. Estimation is prepared as per standard schedule of rates 2017-2018 and Highways Department schedule of rates 2017-2018.

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RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT: STUDENT MANAGEMENT SYSTEM

PRINCIPAL INVIGILATOR: N.MAGENDIRAN

CO-PRINCIPAL INVIGILATOR: J. NASHREEN BEGUM

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ABSTRACT

Student Management System is a web based system developed for a college maintaining information associated to daily activities within the college. This system is utilized to keep details of various department in the college, different course offered by the college, student details, staff details, day to day attendance details, exam mark details, laboratory infrastructure details and all details to convert the pdf file. While building those information, the software system creating a report that are helpful for office staff, staff's, Principal, Student's, and for management within the administration using the details, the reports are created and send to the parents about the student progress and status.

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RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT: QUESTION PAPER MANANGEMENT SYSTEM

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CO-PRINCIPAL INVIGILATOR: DR.S.K.ARUNA

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ABSTRACT

An examination is an important activity for educational institutions that is used to assess the student's performance and his or her progress. To check a student's potential fully the questions must be of that nature that challenge the minds of the students and determine the quality of student's that will be produced by that institute. Preparing the exam questions is very challenging, tedious and time consuming for the instructors. Automatic Question Paper Generation System (AQPG) makes everything easier for the examiner to generate question papers which challenge the intellect of the student as well as check their progress. This system includes several modules like user administration, subject selection, question entry, question management, paper generation, and paper management. Shuffling algorithm used in the system. The administrator needs to specify the subject and the question type. From the entered input, the examination paper will be generated automatically. The editing of questions is performed using Word processor and the final paper may be stored as ".docx" or ".PDF" files. The system shows characteristics like simple operation, a great interface, good usability, immense security, and high stability along with reliability.

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RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT: EFFICIENT HEART DISEASE PREDICTON

PRINCIPAL INVIGILATOR:DR.A.SUPHALAKSHIMI

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ABSTRACT

Heart disease is a major life threatening disease that cause to death and it has a serious long term disability. There is wealth of data available within the health care system. However, there is lack of effective tools to discover hidden relationships and trends in data. Heart is the most essential organ in human body if that organ gets affected then it also affects the other vital parts of the body. A major challenge facing healthcare organization is the provision of quality services at affordable costs. Quality service implies diagnosing patients correctly and administering treatments that are effective. Poor clinical decisions can lead to disastrous consequences which are therefore unacceptable. Hospitals must also minimize the cost of clinical tests. They can achieve these results by employing appropriate computer-based information and decision support systems. Data mining have the potential to generate a knowledge-rich environment which can help to significantly improve the quality of clinical decisions. This describes about a prototype using data mining technique mainly Information Extraction Algorithm. The dataset is composed of important factors such as age, sex, diabetic, weight, blood pressure, cholesterol. The system indicates whether patient had a risk of heart disease or not.

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT: COMPRESSED SMART LOSSLESS SECRET DIGITAL DATA SHARING

PRINCIPAL INVIGILATOR: R.ARULEESWARI

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ABSTRACT

There are many researches that have been proposed for embedding data into digital video. However, most of the schemes are used for extending the data hiding technique for still images to videos by treating each single frame as a still image and embed data in intra-frame. It is an effective data-hiding scheme that embeds data in digital videos using the phase angle of the motion vector of the macro blocks in the inter-frame. It can be applied to either compressed or uncompressed videos. The Fibonacci approach can be used to combine the previous two images for reconstruct the videos. Furthermore, the embedded data can be extracted directly without using the original video sequences. In the experimental results prove the feasibility of the proposed method. The method is implemented and tested for hiding data in natural sequences of multiple groups of pictures and the results are evaluated. The evaluation is based on two criteria, minimum distortion to the reconstructed video and minimum overhead on the compressed video size. Based on the aforementioned criteria, the proposed method is found to perform well and is compared to a motion vector attribute-based method from the literature.

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RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT: A SMART DRIP IRRIGATION USING ANDROID AND ARUDUINO

PRINCIPAL INVIGILATOR: M.REVATHI

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ABSTRACT

Water is the most important resource for plants. But during summers, most people are too lazy to water the plants every day. To overcome this issue smart irrigation system using arduino and android is used. The existing system uses pc and cloud computing to store the data which is read by sensors and the drip is controlled. The proposed system is to ON/OFF the drip using bluetooth wherever we go. This system reduces usage of data storage devices. The Microcontroller Arduino is used to control this System and Android is connected to controller and it controls the drip. The sensors are to take values from surroundings and store it in a controller. According to this value the drip can be ON/OFF. It is controlled manually and usage of storage device is reduced and no network problem will occur.

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RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT: SMART TRAVEL GUIDE

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ABSTRACT

The Smart Travel Planner is a web-based Service Intelligent system for facilitating the travel planning process, which is implemented as a mash up of several travel-related services Work as calendaring programs, and Virtual travel guide Our system is unique in that it Integrates the information and functions needed for travel Planning in their entirely within a single piece of software Various travel destinations, and offering suggestions for sightseeing .The hotel industry and bus industry is a business venture for the owner and a solace for the traveler and tourist. A customer can get stranded in the quest to secure a hotel room to pass the night if he has not made adequate plans by the existing system and have to book the bus to travel. In this Project, it was realized that for a customer to be guaranteed a room, he or she has to physically come to the hotel since the attendants paid more attention to that. He could also send a friend or relative who lives around the neighborhood of the hotel to do the booking for him as same for the bus also. To make the user convenient while travelling to other cities.

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT: HOSTELDATA ONLINE MAINTENANCE ENVIRONMENT (HOME)

PRINCIPAL INVIGILATOR: P.RENUKADEVI

CO-PRINCIPAL INVIGILATOR: N.R.VIKRAM

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ABSTRACT

In Paavai Engineering college, all student data are stored manually, which is difficult to maintain. The data can also be lost in some natural disasters and there is no security for this data. This proposed system is to automate and secure all the data. This also reduces the manual work of the people in the admin panel and the set of registers that were searched to find the information of a previous student, as this system can save the data of those students who have left the hostel. This eliminates the time delay and marking of paper transactions. The manager gets more control over the transactions, such as adding details to new students in the hostel, changing the details of the students, dropping the students, and displaying the details of the student in the hostel. The main purpose of this project is to reduce the efforts of the guards and to provide a better service to the students. This project runs as a web-based application so that it can be used platform-independent. The shared transaction of the host includes the management of registration department, the presence of students, the billboard, the bill collections are stored in the databases, notice board and the out-pass management and reports are created according to user requirements.

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT: DYNAMIC ARTIFICIAL INTELLIGENCE WEB APPLICATION BASED ON SUCCESSFUL SQL INJECTION ATTACKS

PRINCIPAL INVIGILATOR: J.Karthick

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ABSTRACT

Testing and fixing Web Application Firewalls (WAFs) are two relevant and complementary challenges for security analysts. Automated testing helps to cost-effectively detect vulnerabilities in a WAF by generating effective test cases, i.e., attacks. However, existing research suggests that rule sets are very difficult understand and too complex to be manually fixed. In this paper, we formalize the problem of fixing vulnerable WAFs as a combinatorial optimization problem. To solve it, we propose a Dynamic automated approach that combines with multi-objective genetic algorithms present the most critical security risk of vulnerable web applications, SQL injection attack. We design a system based on machine learning for preventing SQL injection attack, which utilizes pattern classifiers to detect injection attacks and protect web applications. We also present a tool that generates massive injection and legitimate patterns automatically by randomization and combination. We evaluated this method with various different types of injection patterns, and evaluated the actual effect with a popular SQL injection attack tool named Sqlmap. The results of evaluation show that proposed system was able to prevent SQL injection attack with a simple mechanism and high positive detection rate.

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RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT: SEEDED REGION GROWING ALGORITHM FOR BRAIN STROKE DETECTION USING MRI SCAN

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ABSTRACT

Image processing is a method to perform some operations on an image. Hemorrhage is one of the brain stroke caused by bleeding in the parts of the brain or the space between the brain membranes which may result in fatal without proper treatment. In the existing work, brain hemorrhage is detected and are visible on Computed Tomographic (CT) scan. Using image segmentation with the help of watershed algorithm the detection of hemorrhage can be done efficiently and the error can be minimized which will be a very simple and accurate system to diagnose hemorrhages. Proposed method consists of filter which is used to remove the noise in the image and segmentation process is to extract the hemorrhage image from scanned image. Finally Support Vector Machine is applied to extract the hemorrhage area. The experimental result shows that the proposed work is performed for detecting brain stroke efficiently and it gives 92% accuracy level with the help of SRG (Seeded Region Growing) algorithm.

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT: AIRCRAFT MANAGEMENT SYSTEM

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ABSTRACT

Linear dataset is formed for efficient retrieval of data from a huge database. Before undergoing the process of knowledge discovery feature reduction process is implemented. The Proposed System reduces the dimensionality and increases the space of data storage. The Support Vector Machine is one of the classifications technique which is used in the aircraft management system. Map Reduce method is used to add privacy to a huge database that can be obtained by adding dual authentication technique which ensures the privacy of the user without over heading the process. By using online algorithm and decomposition based algorithm, all the traffic problems of the network can be recovered. Suggestions are collected from each person and the problems can be rectified through it. The Proposed system works efficiently by using online algorithm and decomposition based algorithm.

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT: Aadhaar Id Based Online Voting System With Biometric Fingerprint.

PRINCIPAL INVIGILATOR: V.Mahesh Kumar

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ABSTRACT

The online voting system is a web-based system that facilitates the online conduct of elections and surveys. The use of the decades-long electoral system to collect citizen's elections is no longer considered efficient due to the various recurring mistakes. So it is time to change the paper-based electoral system, which has already proven to be an inefficient and slow process. The system being tracked, from collecting data to counting votes, is a manual process. online voting system attempts to address the above issues. It should be noted that with this system the users, citizens in this case are given ample time during the electoral period. They should also be trained before the election date on how to vote online. It starts with an automated registration system that provides the secured database of voter information. The voter is assigned a secret aadhar number to log into the system and use the services provided by the system, such as voting. The voter details are stored against their fingerprints in the main database. The electoral commission has the right to access the data but is not authorized to change or modify the data. The change of voter information requires the fingerprint of the respective voter. The system will thus help minimize the corruption caused by other people, and hopefully it will reduce corruption at some point in time. Users are people who interact with the system. If the conditions are not correct, the entry is canceled. It contains two levels of administrator level and the user's level of choice, each with different functions.

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT: SMART REAL TIME DEIVAL DETECTION BY USING IOT.

PRINCIPAL INVIGILATOR: P.RENUKADEVI

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ABSTRACT

Now a day's cars are the major transport which is easily used by all range of people, more than 50% of the world's population uses car as comfort transport and an item of luxury with modern technology which makes the user comfortable than the other transport , Still this advanced technology are not useful in preventing human's life Car accidents have been increased exponentially due to missconcentration of drivers

A detailed analysis given by Government of India (2016) shows that a life is lost every 4 seconds due to road accidents To develop a standalone product to monitor the driver completely To provide a holistic approach by providing real-time monitoring system to check if the driver is drowsy, drunk, if his attention span is less or if he is texting and driving

Assistance mainly in the form of intelligent vehicle systems are provided due to the advancement of computing technology Driver fatigue, drunk drivers, and texting while driving are significant factors in a large number of vehicle accidents To prevent a huge number of sleep induced road accidents, driver drowsiness detection has been consadered a major potential area Detecting the drowsiness of the driver is one of the surest ways of measuring the driver's fatigue

The purpose of such a system is to perform detection of driver fatigue This system constantly monitors the driver whether he/she is drowsy, by placing the camera in the dashboard, which monitor the face of the driver and look for the eye-movements which indicate that the driver is no longer in a condition to drive. Once the driver is found to be drowsy, the systemwill first alert the driver by sending the appropriate text message, further it can alert them by an alarm or spraying water.

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RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT: OPTIMAL PARAMETERS TO MAXIMIZE THE CROP PRODUCTION USING BIG DATA MINING

PRINCIPAL INVIGILATOR: Dr.A.SUPHA LAKSHMI

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ABSTRACT

In agriculture sector where farmers and agri business have to make innumerable decisions every day and intricate complexities involves the various factors influencing them. An essential issue for agricultural planning intention is the accurate yield estimation for the numerous crops involved in the planning. Data mining techniques are necessary approach for accomplishing practical and effective solutions for this problem. Agriculture has been one of the obvious target for big data. Environmental conditions, variability in soil, input levels, combinations and commodity prices have made it all the more relevant for farmers to use information and get help to make critical farming decisions. It focuses on the analysis of the agriculture data and finding optimal parameters to maximize the crop production using data mining techniques like PAM, CLARA, DBSCAN and Multiple Linear Regression. Mining the large amount of existing crop, soil and climatic data, and analysing new non-experimental data optimizes the production and makes agriculture more resilient to climatic change.

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT: AUTOMATION PLATFORM FOR APPLICATION DEVELOPMENT

PRINCIPAL INVIGILATOR: DR.K.SARAVANAN

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ABSTRACT

Now a day the mobile phones usage has been increased drastically all over the world. Because of Mobile phones, the usage of mobile application has also increased, that is why the mobile application plays important role in our life. Automation Platform for Application Development introduces several challenging requirements, such as Application developing, more efficient cloud storage, reduction in time, reusability of application and secure access to data. The proposed system reduces the deploying time and the user does not have necessary to know any programming languages and it supports multiple extensions. By using various types of Application Programming Interface (API) that help in accessing the requested data from APAD platform. APAD platform collects various data like selection of predefined layout (completely customizable), different styles and fonts for each page. User can select various widgets to develop the web applications. APAD Platform split end user application data into two partition named as logical and programming data processed in backend. End user can request to build specific application and it will transfer the application data through APAD gateway to SDK. The SDK converts data into specified package and it will be stored in APAD Server.

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RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT: CYBER SECURITY AND PRIVACY IN SOCIAL NETWORKING USING PRIVATE API'S

PRINCIPAL INVIGILATOR: M.BALAMURUGAN

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ABSTRACT

A social network is a theoretical construct useful in the social sciences to study relationships between individuals, groups, organizations, or even entire societies. The social network is mainly used for connecting and communicating with several people from different locations. Now a days cracking can be very common in the social media because of piracy in API. This system is based on cyber security and privacy in social media with Firebase SDK using private API keys. The code cannot be accessed by the set of API functions, that allow the application being written to access content typically and available to the online social network provider. Only the admin can access the web services and the user can access only the Application Interface. This proposed system is based on Open Source and will be licensed under General Public License 2. Users Statistical data can be viewed for the user security measures. In this proposed system clone profiles cannot be functioned. Then SQl. Injection is not possible and Shortened Links cannot be accessed.

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RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT: LOAD BALANCING AND TRAFFIC MANAGING OVER A WEBSITE.

PRINCIPAL INVIGILATOR: R.DHIVYA

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ABSTRACT

The IIS website is hosted in azure cloud servers that are available to the users and it access for all the time. Even the downtime of the website is for a fraction of second which will lead to loss the quality of service of the site. It should be accessed by the users at a rate of 24/7. This project provides two different techniques named as Load Balancing and Traffic Managing. The website is hosted in virtual machines from different regions. So it will available in different locations and different forms for the end users. There will be no downtime for the website. The load balancing system provides scalability and high availability for applications. Azure Load Balancer can be configured to all resources in the cloud need a public IP address to be reachable from the Internet. The cloud infrastructure in Azure uses non-routable IP addresses. Load balancer that distributes incoming traffic among health instances of services. The IIS website will be available all the time. The users will be able to access the website using VM (Virtual Machine) public address without any downtime.

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RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT: MOVING OBJECT DETECTION AND TRACKING IN A VIDEO USING PRINCIPAL COMPONENT ANALYSIS

PRINCIPAL INVIGILATOR: DR.S.ANTONI RAJ

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ABSTRACT

The usage of video is becoming prevalent in many applications such as monitoring of traffic, detection of pedestrians, identification of anomalous behavior in a parking lot or near an ATM, etc. While a single image provides a snapshot of a scene, the different frames of a video taken over time register the dynamics in the scene, making it possible to capture motion in the sequence. Most of the methods include object segmentation using background subtraction. The tracking strategies use different methodologies like Meanshift, Kalman filter, Particle filter etc. Here, classification of the tracking methods is done, and a detailed description is provided in each group. Research works on object detection and tracking in videos. The definition and tasks of object detection and tracking are first described, and the important applications are mentioned.

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RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT: A REALIABLE FRAMEWORK FOR CROWD SOURCE E-HEALTH NETWORK USING DATA CONGESTION ANALYTICS

PRINCIPAL INVIGILATOR: J.VELUMANI

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ABSTRACT

Reliable data congestion analytics in crowd sourced e-Health networks becomes more important, especially in big data era, because of wide adaption of ubiquitous crowd sourced healthcare involvers. Since a crowd sourced e-Health network has intermittent connectivity to its remote healthcare provider. Data congestion can be occur, researchers usually use some well-studied networks to model the novel network, but data congestion analytics is still a big problem in most intermittent connecting networks. In most cases, data congestion analytics may be realized by fixing the number of forwarded copies, but sometimes, it cannot suit for changing network environments. This problem could be solved by modifying packet forwarding conditions dynamically through detecting real-time network environment. Based on this idea, an optimized routing algorithm named RSW (Reduced variable neighborhood search-based Spray and Wait) introduced. In the algorithm, nodes will exchange and store each other's buffer status during their communication, based on which, current network environments will be evaluated and quantified as a real-time threshold. Then, spray and wait adapts the threshold for data congestion control. Simulation shows that the proposed algorithm increases data packet delivery probability, and optimize the overhead ratio dramatically, which can be up to ten times lower than that of RSW algorithm.

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RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT: TRANSPORT DATA RETRIVAL USING DATA MINING WITH RFID TAGS

PRINCIPAL INVIGILATOR: MR.J.KARTHICK

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ABSTRACT

Transport data retrieval system is an integrated electronic management system. Transport system was developed as one of the solution to transfer from current manual practices to a more systematic computerized system. It can be stored and maintain the details of bus information, student information, driver information, faculty information and reports will be generated. Bus in time and out time will be stored in cloud automatically using RFID. Classification and data preprocessing data mining techniques are used for data filtering process. Automatic bus pass checking process is implemented. Current location of a bus can be tracked using GPS tracking device. This can be used to manage the data of all types of transport management. It will also help in decreasing human error. It will support both stand alone and networking environment.

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RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT: BRAIN TUMOUR DETECTION INMRI IMAGES USING WATERSHED SEGMENTATION WITH K-MEANS CLUSTERING AND GENETIC ALGORITHM

PRINCIPAL INVIGILATOR: Mrs.P.RENUKADEVI

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ABSTRACT

Brain tumour extraction and its analysis are challenging tasks in medical image processing because brain image is complicated. Brain tumour is an intracranial solid neoplasm. The main task of the doctors is to detect the tumour which is a time consuming and tiresome process. The only optimal solution for this problem is the use of "Image Segmentation". MRI is selected for the detection of braintumors, as they are used in the determination of soft tissue. In the way MRI (Magnetic Resonance Imaging) has become a useful method diagnostic tool for the diagnostic of brain & other medical images. The existing method derives high quality classifiers for the various tissue classes from sparse and unique annotation. The MRI brain images are collected from MIDAS dataset. The experimental results of the proposed technique were evaluated and validated for the performance based on accuracy, sensitivity, specificity and cube similarity index coefficient. The experimental results achieved an accuracy of 88.24%, a specificity of 81.58% and a sensitivity of 96.59% using watershed segmentation with k-means clustering and genetic algorithm has a higher accuracy when compared with the existing methods.

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RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT: STUDENT MARK ANALYSIS SYSTEM

PRINCIPAL INVIGILATOR: DR .A .STEPHEN THANGARAJ

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ABSTRACT

Student mark analysis system, meet accountability demands with the comprehensive student information systems. Current exam-cell activities are mostly done through paperwork. Automated solutions using this student mark analysis system will make exam department activities more efficient by covering for the most important drawbacks of manual system, namely speed, precision and simplicity. The final product would constitute a computerized module aimed at replicating offline exam cell process. The system is a new concept which came into existence because of the large amount of data being on paper and it made analysis of results a tedious task, apart from the unmanageable amount of data that is generated in an institution from various departments.

The Automation system is like an intermediary between staff and students, thus easing the activities of each regarding examination. It is a system that will automate the exam cell analysis process. It would require certain crucial data to be pre-existing, which definitely suggest a dependency on certain other systems, especially ones concerning data acquisition.

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RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT: DIAGONOSIS OF DIABETES USING FUZZY LOGIC

PRINCIPAL INVIGILATOR: M.SIVARANJANI

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ABSTRACT

Diabetes is a disease which is affecting many people now-a-days. Most of research is happening in this area. Diabetes, referred as diabetes mellitus it is ongoing process in which the person has increase blood glucose (blood sugar), either because insulin origination is deficient, or body's cells do not behave properly to insulin which is produce. Early investigate of diabetes is an important objection. Existing system had so many drawbacks. In previous systems are used many classification techniques or methodologies for diagnosis of diabetes like Neural Network, Naïve Bayes, and Support vector machine. But performance is idle of existing system. In early stage existing methodologies do not diagnosis diabetes. This algorithm propose a model to solve the problems in existing system in applying data mining techniques namely clustering and classifications which are applied to find the types of diabetes and its accuracy level for every patient from the dataset collected. This algorithm tries to find the types of diabetes based on 768 patient's data with which we analyzed and identified levels of the diabetes. As part of procedure Fuzzy c-means algorithm is used for clustering the entire dataset into 3 clusters i.e., cluster-0 for type-1 diabetes, cluster-1 for type-2 diabetes (juvenile diabetes), cluster-2 for gestational diabetes. This clustered dataset was given as input to the classification model which further classifies types of diabetes.

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RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT: INTELLIGENT SYSTEM USIGN IMAGE PROCESSING

PRINCIPAL INVIGILATOR: P.SATHISH KUMAR

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ABSTRACT

In this project, an Artificial Neural Network method for action recognition under action and performance variations is proposed from only a single video in the database. The proposed unified people localize, and label their activities, in complex short-duration video sequences. Image classification is one of classical problems of concern in image processing. There are various approaches for solving this problem. The Gabor wavelet features are widely used for the action recognition. The existing Gabor features requires more amount of computing time. In the proposed modified Gabor wavelet the filter and the Gaussian envelop coefficients are varied to reduce the computing time. The proposed Gabor wavelet reduced the feature extraction time. Specialized versions of the feed forward network include fitting and pattern recognition networks.

The aim of this project is to bring together the areas in which Artificial Neural Network (ANN) are applied for action classification. This action is separated into many sub-action based on the features of action. Each sub-action is classified into the responsive class by an ANN. Finally, the actions are compiled as the classification result of ANN. The experimental results show the feasibility of the proposal model. An ANN method used to image recognition and Gabor filter for feature extraction with proposed get 81% of accuracy for corner point detection.

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RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT: MILITARY BASED APPLICATION USING QR CODE

PRINCIPAL INVIGILATOR: N.R.VIKRAM

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ABSTRACT

Security is considered as a major concern nowadays. Passwords are used to authenticate largely in applications for computer security and privacy. In the authentication chain, the human actions choosing weak passwords and creating insecure way are regarded as "the weakest link". The alphanumeric strings, human used to choose their passwords are either short or meaningful for easy memorization. In this web applications and mobile apps piling up, people can access these applications anytime and anywhere with various devices. This convenience may increase the probability of exposing passwords to shoulder surfing attacks. User passwords are stolen by the attackers through directly or through external recording devices credentials. To overcome this problem, novel authentication system like Pass Matrix, based on graphical passwords is used in the proposed system to resist shoulder surfing attacks. With a one-time valid login indicator, the horizontal and vertical bars covering the entire scope of pass-images, Pass Matrix offers no hint for attackers to figure out or narrow down the password even if they conduct multiple camera-based attacks. Three types of authentication methods like hash based, RSA based and EIGAMAL based password authentication using Pass Matrix prototype on Android are carried out to evaluate its memorability and usability. The proposed system is expected to achieve better resistance to shoulder surfing attacks while maintaining usability.

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RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT: GOVERNMENT ONLINE PETTION LOADING

PRINCIPAL INVIGILATOR: N.MAGENDIRAN

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ABSTRACT

Testing and fixing Web Application Firewalls (WAFs) are two relevant and complementary challenges for security analysts. Automated testing helps to cost-effectively detect vulnerabilities in a WAF by generating effective test cases, i.e., attacks. However, existing research suggests that rule sets are very difficult understand and too complex to be manually fixed. In this paper, we formalize the problem of fixing vulnerable WAFs as a combinatorial optimization problem. To solve it, we propose a Dynamic automated approach that combines with multi-objective genetic algorithms present the most critical security risk of vulnerable web applications, SQL injection attack. We design a system based on machine learning for preventing SQL injection attack, which utilizes pattern classifiers to detect injection attacks and protect web applications. We also present a tool that generates massive injection and legitimate patterns automatically by randomization and combination. We evaluated this method with various different types of injection patterns, and evaluated the actual effect with a popular SQL injection attack tool named Sqlmap. The results of evaluation show that proposed system was able to prevent SQL injection attack with a simple mechanism and high positive detection rate.

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RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT: DISEASE IDENTIFICATION USING NEURAL NETWORK ALGORITHM

PRINCIPAL INVIGILATOR: P.SANTHIYA

CO-PRINCIPAL INVIGILATOR: R.KAVIMATHI

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ABSTRACT

Intelligently extracting knowledge from social media has recently attracted great interest from the Biomedical and Health Informatics community to improve healthcare simultaneously, outcomes and reduce costs using consumer-generated opinion. This work proposes a two-step analysis framework that focuses on positive and negative sentiment, as well as the side effects of treatment, in users' forum posts, and identifies user communities (modules) and influential users for the purpose of ascertaining user opinion of Depression. This is used a self-organizing map to analyse word frequency data derived from users' forum posts. Then introduced a novel network-based approach for modelling users' forum interactions and employed a network partitioning method based on optimizing a stability quality measure. This allowed us to determine consumer opinion and identify influential users within the retrieved modules using information derived from both word-frequency data and network-based properties. Thus approach can expand research into intelligently mining social media data for consumer opinion of various depression to provide rapid, up-to-date information for the pharmaceutical industry, hospitals, and medical staff, on the effectiveness (or ineffectiveness) of future depression treatments.

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT: PREVENTION OF DISEASES IN PLANTS, MONITORING FIELD AND SPRAYING PESTICIDES BY FARMING ROBOT

PRINCIPAL INVIGILATOR : Mr.C.GANESH

CO-PRINCIPAL INVIGILATOR: Mr.C.GANESH

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ABSTRACT

Development of automatic disease detection and classification system has been significantly explored in precision agriculture. In the past few decades, researchers have studied several cultures exploiting different parts of a plant. Several researches have been performed for all plants using leaf images. In this project an efficient leaf disease detection and classification for agricultural plant for detecting affected leaves from normal leaves have been proposed. A rule based fully-automatic system using concepts of k-means is designed and implemented to distinguish healthy leaves from diseased leave. In addition, a diseased leaf has been classified into one of the three categories (downy mildew, frog eye, and Septoria leaf blight). Experiments are performed by separately utilizing colour features, texture features, and their combinations to train three models based on artificial neural network classifier. Results are generated using thousands of images collected from Plant Village dataset.

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT: IOT BASED SOLID WASTE MANAGEMENT SYSTEM

PRINCIPAL INVIGILATOR : Mr.V.SAKTHIVEL

CO-PRINCIPAL INVIGILATOR: Ms.N.SHANMUGAPRIYA

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ABSTRACT

Water is one of the most vital natural resources. Without it no life exits on the earth. Up to 60% of human body is water. Hence the quality of water we consume is very important. The World population is expected to increase from 6.8 to 9.1 billion between 2009 and 2050. The urban population is also projected to 6.3 billion in 2050. This projection shows that the urban areas all over the world would have tremendous increase in population growth in the next 40 years. It is expected that the urban population would be 3.9 billion in developing countries and 1 billion in developed countries. With this we could say that the population growth is an urban phenomenon predominantly in developing countries. With increase in urban population the waste water generated by them would also be increased Water is a key resource for life on earth. Clean Drinking water is one of essential human needs. With the increase in urbanization a threat of water scarcity is alarming. This triggers the idea of reuse and recycling of waste water. This waste water management for smart cities system uses the automation concepts in the recycling of waste water that makes the process and all the process are updated in the internet of things (IOT) and output is more efficient here we are using different sensors to monitor the waste water process and also results the cleaned water. This treated water is again used for the many purpose by means of this we can able to save large amount of water.

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT: IR BASED SMART METRO TRAIN SYSTEM FOR CROWD MANAGEMENT

PRINCIPAL INVIGILATOR : Mr.S.VIJAYAKUMAR

CO-PRINCIPAL INVIGILATOR: Mr.N.THENNARASU

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ABSTRACT

The main idea of this project is to illustrate the technology used in metro train movements which are used in most of the developed countries. This train is equipped with a controller that enables the automatic stopping of the train from station to station. This project presents the development process of a prototype for a driverless train implemented using a PIC microcontroller. Simulation for the system's circuits is done with the aid of Proteus software. The hardware circuits, which are built on printed circuit boards (PCB), are interfaced with actuators and sensors for automation purposes.The feature of this project is to make an automated place announcement system for Train using voice IC and the radio frequency wireless card for tracking the station data.The microcontroller in the train is programmed in such a way that every station name saved in the voice chip which is having a unique code. So whenever the train reaches the station, the reader in receives the codes, which are transmitted from the tag and the microcontroller receives this code and checks in the look up table, saved in the chip. Whichever matches, the controller will send the command to the voice chip to play that particular voice. At the same time the train stops for about 10-15 seconds in the station and then before leaving the station, it will again start to announce "Please get into the train, the train will leave in 6 sec" and the train starts to move to next station. The voice chip will play the voice and this will be heard in the speaker.

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT: AUTOMATIC SENSING AND CONTROLLING PLANT GROWTH USING WIRELESS SENSOR

PRINCIPAL INVIGILATOR : Mr.S.LOGANATHAN

CO-PRINCIPAL INVIGILATOR: Mr.S.VIMALNATH

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ABSTRACT

In India the farmers face a lot of challenges, to save crop from pest infestation. Plant disease reduces product of farmer both in quality and quantity. This in turn affects his lifestyle. Since agriculture is the backbone of our nation, it is our duty to help farmers. So we like to provide a solution to this problem through our project. The main objective of our project is to detect and prevent plant diseases in the early stage itself. The "plant disease detection and prevention system" uses ARM & CORTEX processor. Using this system four type of diseased plant leaf's images are displayed on the GLCD of the ARM processor. When the farmer touches any one of the diseased plant leaves image on the GLCD, the system identifies the diseased leaf's using a camera sensor. Then a DC driver circuit is used to detach the diseased leaf, using a robot arm. The corresponding pesticide for the disease is also sprayed, to prevent further spreading of disease.

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RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT: WIRELESS DATA ENCRYPTION AND DECRYPTION FOR SECURITY IN ARMY APPLICATION

PRINCIPAL INVIGILATOR : Ms.R.KARTHIKA

CO-PRINCIPAL INVIGILATOR: Ms.R.KARTHIKA

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ABSTRACT

In the wireless sensor networks, a number of security mechanisms are proposed for data confidentiality. To encrypt and decrypt the text and image we propose a light weight block cipher cryptographic scheme which employs a chaotic map and genetic operations. The chaotic map parameters are used to generate the pseudo random bit sequences. XOR, Mutation and Crossover operations are performed over this sequence to encrypt the data. Our project is implemented by network simulation 2.28 software with cygwin tool. Compare to the existing system in our project the throughput and packet delivery ratio are higher. In existing system only data can be encrypted but in our project it is possible to encrypt both text and image.

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT: AUTOMATIC BILLING SYSTEM USING LIFI AND WIRELESS LAN

PRINCIPAL INVIGILATOR : Mr.P.JOHNVIVEK

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ABSTRACT

The super shops are the places where people go to buy their daily using products and also pay for that. So the need to calculate the number of products sold and generation of bill for the customer. When people go for the shopping in a shop, we have to select the right product. After that, it's a hectic to stand in line for billing purpose. Hence, we are going to propose the "Smart Shopping Cart System" that will save the track of products which are purchased and calculate the bill using RFID reader and Transmitter and Receiver. The system will also provide suggestions for products to buy based on user purchase history from a centralized system. In "Smart Shopping Cart System" every product in Mart will be attached with RFID tag, and every cart will be having RFID Reader, LCD display and Transmitter and receiver attached to it.

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT: OPTIMIZATION OF DE-LINKED PULP TO IMPROVE THE CONSISTENCY OF PAPER PULP IN PAPER INDUSTRIES

PRINCIPAL INVIGILATOR : Mr.S.SATHEESHKUMAR

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ABSTRACT

Fresh water can be defined as water with less than 500 parts per million of dissolved Salts. Paper production is mainly a two-step process in which a fibrous raw material is first converted into pulp, which is then converted into paper. Pulp making can be done either mechanically or chemically. The cleaning and screening is done to remove solid impurities Such as sand, lamination sheet from the pulp. Using soap solution three stage of floatation process are done to remove wastage. Bleaching of wood pulp is the chemical process to lighten its color and whiten the pulp. The chemicals are coagulant strong cationic, flocculants anionic and cationic. Each and every stage of De-Inking process needs pure water. The De-Inking agent is used to separate and remove the ink from the pulp. Ink can be removed through a method called Floatation, in which the ink is first changed into fine particles that are then dispersed. Through this De-Inking process the fresh water get polluted. In our method Back-flushing filter which is automatic, self-cleaning filter is used for extracting solid particles from low viscosity fluids .With the help of this filter maximum percentage of water get purified. As nearly 75% of water get reclaimed and used at industry.

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT: RELAY CO-ORDINATION AND ARC FLASH USING ELECTRICAL TRANSIENT ANALYSIS PROGRAM

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ABSTRACT

Since the inception of industrial electrical systems, coordination tasks were performed to ensure that protection systems would operate with the necessary reliability and security. The tools to perform such tasks have evolved from the use of a glass table with light and log-log curve sheets into computer base programs with GUI. Meanwhile, protective devices have also gone through advancements from the electromechanical devices to the multifunctional, numerical devices. Throughout the changes in coordination tools and protective device configurations, a good number of protection coordination principles remain with us. In addition, new techniques are developed to assist us with the use of protection systems to reduce arc flash energy in addition to basic protection functions.

Basically in industries employ protective devices in order to protect the equipment and humans nearby MV (Medium Voltage) and LV (Low Voltage) protection are always necessary and hence proper installation and maintenance are generally made. However HV (High Voltage) protection is not made in some industries, because only incoming feeder carries HV lines to industries. Also cost is a factor while employing HV protection. As humans work nearby the power system equipment's, it is necessary to protect those areas using LV and MV protective devices like Circuit breakers, Isolators, fuses etc.,

For this the project MV and LV protection is made to Malaysia's largest district cooling provider serving at Putrajaya, Kuala Lumpur City Centre (KLCC) and Kuala Lumpur International Airport (KLIA). The Single Line Diagram of this gas cooled district plant is taken and worked using ETAP software. The results of the entire plant are discussed with the computer simulations.

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT: POWER GENERATION BY HUMAN ENERGY USING GYM CYCLE

PRINCIPAL INVESTIGATOR: Dr.G.BALAJI

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ABSTRACT

In order to reduce the usage of fossil fuels and to increase the usage of renewable energy our project focuses on reducing the usage of fossil fuels and to increase the renewable energy usually the utilization of fossil fuels as the energy source causes environment degradation since the fossil fuels are not completely utilized there remains certain amount of renewable energy source could be based on exercise equipment. The energy expended in a typical workout at the gym is usually wasted in the mechanics of the equipment.

This project harnessed the mechanical energy of the machine and converted it into an electrical energy using a generator based system. Here the exercise equipment will be attached to a permanent magnet dc generator. This creates a dc voltage which will be fed into a circuit and then sent to a battery where it can be stored for future use. The stored energy then can be utilized by sending it to the inverter which converters a dc voltage into an AC voltage at the desired voltage and frequency depends on the appropriate transformers. Switching and control circuits. This project will introduce the project and present all applicable information regarding the design, development and the final product.

Human power is a power produced from gym exercise. Human powers can another renewable source of energy. The intention of this project is to design a system based on renewable energy source. A generator used here is the motor which is powered by a gym bicycle. A motor is connected to gym bicycle in such way as the circular rotation of the front wheel rotates the motor shaft. The resulting direct current is converted into different usable DC voltages levels. By converting this DC voltage into AC levels, It will useful to light bulbs, laptop and mobile charging, musical system and other appliances. This will reduce the energy demand in today's life.

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT: DESIGN AND ANALYSIS OF TRANSFORMER USING INDIAN STANDARDS - 2026

PRINCIPAL INVESTIGATOR: Dr.A.RATHINAM

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ABSTRACT

This project presents a design and analysis of distribution transformer, one whose secondary voltage is less than its primary voltage. It is designed to reduce the voltage from the primary winding to the secondary winding. This kind of transformer "steps down" the voltage applied to it. As a step-down unit, the transformer converts high voltage, low-current into low-voltage, high-current. The larger-gauge wire used in the secondary winding is necessary due to the increase in current.

We are going to design transformer conductor, type of coil, connection, size of covered conductor, covering, size of covered conductor, transposition, turns per phase, number of coils per phase, turns per coil, number of layers, inter-layer-insulation, tapping design, inside diameter of coil, outside diameter of coil, winding length of coil, overall length of coil, approximate bare weight of conductor per transformer, approximate covered weight of conductor per transformer include leads.

In a 63KVA, 11kv input as delta connection, 433V output as star connection, the entire construction and design followed by Indian standards-2026. After the entire construction the overall efficiency of the transformer will be about 95% after 10 years efficiency will reduced by 80%.

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RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT: SOLAR CHARGE CONTROLLER BASED ON MPPT TECHNIQUE

PRINCIPAL INVESTIGATOR: Dr.K.JAGATHEESAN

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ABSTRACT

The basic needed for human life is energy for all regular life activities. In this renewable energy play major role because it is pollution free and lesser cost but it requires effective method for utilization. Renewable energy is more compact to compare the other source such as tidal, wind, biogas, because solar is less cost and more efficiency.

With help of photovoltaic cell, solar energy is converted into useful electrical energy for regular activities. The main issue in solar power is the output voltage of panel is varied with respect to time(temperature) because of climate condition. So, output voltage of panel is varied and input voltage is given to the battery also varied.

In order to solve this crisis controller is implemented to regulate the output voltage of panel. In this work MPPT technique-based controller is implemented for voltage regulation. They regulate the output voltage is given to the battery as input voltage. In addition, this analysis includes evaluating the quality and efficiency can increased by 20 to 25%.

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT: COMPARATIVE ANALYSIS OF SOLAR PV MODELS

PRINCIPAL INVESTIGATOR: C.ARULKUMAR

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ABSTRACT

In the energy deficient world, it is strongly felt that the use of solar energy as a possible source is not being fully utilizes. The environmental impact of the energy industry is diverse. Energy has been harnessed by human beings for millennia. Initially it was with the use of fire for light, heat, cooking and for safety. In recent years there has been a trend towards the increased commercialization of various renewable energy sources. Consumption of fossil fuel resources leads to global warming and climate change.

The goal of the project is to study the benefits and implementation cost of the solar energy. To achieve the project goal, the following tasks have to be carried out: (1) collect and analyze data to estimate the average radiation, illumination and temperature profiles in specific area (2) develop financial model to estimate the cost per unit watt given the current solar technology.

The electric dc energies produced from photovoltaic system are transported to a dc disconnected energy mix controller. The controller is bidirectional connected to a DC-AC float charging-inverter system that provides charging current to a heavy-duty storage bank of a battery and at the same time produces inverter AC power to AC loads. The step by step analyses design of 1000W solar power supply system was done as sample case. Load estimates of a typical rural community and for rural ICT infra structure estimated. Now we are produce the solar power rating in 3500W and that solar energy are we used and analyses in the solar power management.

Generation of electricity by using solar energy source which leads to generates electricity with affordable cost without damaging the nature balance in this output can be calculated in the solar power measurement.

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RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT: POWER QUALITY IMPROVEMENT IN SOLAR BY USING FUZZY LOGIC CONTROLLER

PRINCIPAL INVESTIGATOR: G. DEIVAMANI

CO-PRINCIPAL INVESTIGATOR: Dr. M.RAVICHANDRABABU

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ABSTRACT

The advancement in power electronics technology, the solar photovoltaic energy has been recognized as an important renewable energy resource because it is clean, abundant and pollution free. The grid interactive PV system described in this paper supplies active power as well as provides harmonic and reactive power compensation. This additional feature increases the effective utilization of PV inverter and increases the overall efficiency of the system. The current paper proposes an intelligent control method for the maximum power point tracking (MPPT) of a photovoltaic system under variable isolation conditions. Here in this paper, intelligent control method uses a Fuzzy Logic Controller applied to a DC-DC converter device as well as Dc Link Controller to achieve the DC Link Voltage Constant.

In this project Two stage-cascaded converters are widely used in dc– ac hybrid systems to achieve the bidirectional power transmission. The topology of dual active bridge cascaded with inverter (DABCI) is commonly used in this application. This paper proposes a coordinative control method for DABCI and it is able to reduce the dc-link voltage fluctuation between the DAB and inverter, then reduce the stress on the switching devices, as well as improve the system dynamic performance. In the proposed control method the DAB and inverter are coordinated to control the dc-link voltage and the power, and this responsibility sharing control can effectively suppress the impact of the power variation on the dc-link voltage, without sacrificing stability. The proposed control method is also effective for DABCI in unidirectional power transmission.

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RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT: ANALYSIS ON A PV HOUSE POWERED BY SOLAR ENERGY

PRINCIPAL INVESTIGATOR: R.JOHNNIEHEPZIBA

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ABSTRACT

The global economy depends on oil, coal and natural gas will be completely phased out of existence in 2017. In terms of environmental Impact, solar power is a much more optimal resource than fossil fuels. In terms of reliable application, coal and natural gas have the edge. The ultimate way to compare solar energy to fossil fuels is by cost, where solar has quickly caught up with its non-renewable counter parts. When we compare the cost of solar energy vs. fossil fuels, we have to factor in the relative subsidies that are keeping costs low. And solar low cost trajectory is likely to continue: unlike oil, gas and coal, solar PV is a technology not a fuel, meaning that its costs will continue to fall every year as research continues and technology improves. Solar is easily installed on a rooftop surface or ground mount and harnesses an already-available resource (sunlight). By comparison, fossil fuel use requires the degradation of the earth as a means to a fuel's production. Many people are unaware that fossil fuels do not just create greenhouse gas emissions, the process of drilling also degrades and erodes the ground and pollutes water supply.The best way to compare solar energy and fossil fuels without subsidies is to examine global energy prices. Consider this: global coal prices have historically averaged $0.06 cents per kilowatt hour (kWh). Until the past decade, no alternative energy resource came close to rivaling that price. Fossil fuel steam averages around $0.05 cents/kWh and small scale natural gas can go as low as $0.03 cents/kWh. It's no wonder that the world was shocked in 2016 when a major commercial solar installation bid the lowest price for PV to date at $0.029 cents per kWh – effectively leveling the playing field between solar and fossil fuels' cheapest offerings.

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT: INTELLIGENCE SURVEILLANCE USING RASPBERRY PI

PRINCIPAL INVESTIGATOR: M.RAJA

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ABSTRACT

As an essential constituent of many associations' security and safety precedence, video surveillance has established its importance and benefits numerous times by providing immediate supervising of possessions, people, environment and property. This project deals with the design approach of an Embedded Real-Time Surveillance System Based Raspberry Pi SBC for intruder detection that reinforces surveillance technology to provide essential security to our life and associated control and alert operations.

The proposed security solution hinges on our novel integration of cameras and motion detectors into web application. Raspberry Pi operates and controls motion detectors and video cameras for remote sensing and surveillance, streams live video and records it for future playback. This research is focused on developing a surveillance system that detects strangers and to response speedily by capturing and relaying images to owner based wireless module.

This Raspberry Pi based Smart Surveillance System presents the idea of monitoring a particular place in a remote area. The proposed solution offers a cost effective ubiquitous surveillance solution, efficient and easy to implement.

This project will also present the idea of motion detection and tracking using image processing. This type of technology is of great importance when it comes to surveillance and security. Live video streams will therefore be used to show how objects can be detected then tracked. The detection and tracking process will be based on pixel threshold.

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RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT: IDENTIFICATION OF FAULT IN THREE PHASE INDUCTION MOTOR USING ANFIS

PRINCIPAL INVESTIGATOR: V.ROYNA DAISY

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ABSTRACT

Induction motors are electromechanical devices used in industrial applications because of many technical and economic reasons. These machines face more stresses during the operation and due to wear and tear. Thus it becomes essential to check and monitor the condition of the machine then and there. It is necessary to detect the faults in order to improve the efficiency and reduce operational and maintenance cost. There are different types of diagnostic method used for fault detection namely, park's vector approach and Fourier transform algorithm. But, these methods are not able to find the fault in dynamic condition.

The main objective of the proposed method is to detect the fault in three phase induction motor for both the static and dynamic condition using thermal images. The thermal image shows the internal features of the machine. The information regarding the change in characteristics is obtained through textural features. The features are extracted by feature extraction method and prominent feature is selected by Fisher dicriminant ratio (FDR). In this project, the methodology based on Adaptive Neuro-Fuzzy Inference System (ANFIS) is used to diagnose the fault. Both the FL and ANN is increase the system efficiency and decrease the mathematical equation when compared to the other detection methods. The ANFIS consists of IF-then rules, training and learning algorithm. The parameter of this method is the temperature changes within the induction motor. The MATLAB simulations represent the developed fault detection approach. The simulations are carried out to find faults like stator inter-turn fault, bearing fault and rotor fault.

This method shows good detection efficiency which can be used for many applications of systems modelling, control systems and forecasting predictions.

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT: ENHANCEMENT OF VLC INDOOR POSITIONING SYSTEM USING REGRESSION APPROACH

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ABSTRACT

Light Emitting Diodes sare set to penetrate many areas. These devices in addition to their lighting capabilities can also be utilized for data transmissions. LED's require low power for their operation and have high switching speeds. The higher bandwidth of the visible light is exploited for high speed data transmission. The data transmission rate should be high enough so that flickering of the LED's should not be detected. Sometimes it is possible for complete fadeout of the signals.

Aim of this project is to give the guidance for the peoples with the help of VFC, which carries out communication using visible light that are employed for indoor illumination. Visible light has become promising for various wireless applications. In particular, visible-light communication (VLC) assisted indoor positioning enjoys its unique advantage of electromagnetic interference immunity and high accuracy. Instead of directly extending conventional wireless positioning using radiofrequency equipment, we consider the indoor positioning specified for a popular VLC scenario where the target device has multiple photodiodes (PDs) while having no help from other fixed receiving nodes with known coordinates.

If the VFC Reader detects the place means the Voice recoded circuit switch on the voice alerts. In this project the Information are designed as VFC Transmitter integrated one. We are doing this project with help of PIC Microcontroller (pic16f877a).The conclusion of this work is that, using the regression method, enhances the performance of VLC indoor positioning system.

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT: ENHANCEMENT OF TRANSIENT STABILITY IN TRANSMISSION LINE USING ETAB

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ABSTRACT

The stability of the power system is the ability to operate in s stable condition. Instability is defined by loss of synchronism. Transient stability is defined as the ability of a synchronous machine to remain in synchronism. The transients are caused due to sudden disturbances in the system. The objective is to analyze the transient stability of the system when a three phase fault is created on the bus. For 6 bus and 9 bus system the Transient Stability Analysis and short circuit has been performed by using ETAP (Electrical Transient Stability Analysis Program).

The software to analyze the absolute power angle of generator, reactive power, electrical power and terminal current of a system. The three phase fault is created at bus 1 and 2 for both system at 0.1 second. The fault has to be cleared with in the time so that electromechanical oscillation has been damped out and make the generator to operate in synchronism. If the faulted is not cleared within the critical clearing time then the system will goes to instability, i.e the generator will goes to out of step then the generator electrical output given the generator.

The fault created at bus can be cleared by using the clear fault option which is available in the transient stability study case editor. The fault in the both system are cleared by using clear fault without using critical clearing time and increasing the inertia of generator.

At this juncture the short circuit analysis is carried out for 6 and 9 bus system. The fault is cleared at bus 1 and 2 within 0.3 second for both the systems. The IEC 60909 standard is performed after running load flow analysis with help of short circuit study case editor. The 60909 standard is used for calculating three phase fault.

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT: ANALYSIS OF HYBRID INVERTER USING SPACE VECTOR PWM TECHNIQUE

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ABSTRACT

Inverters are widely used in the domestic and industrial environments. It performs as second line of source in case of power off from direct supply. Due to low capacity of the battery, the inverter dies out by energy utilized by heavy load appliance. Our project has designed to overcome from such issues by solar energy.

Solar energy generates by PV panels with hybrid inverter batteries to store energy. In photovoltaic power generation system DC voltage variation leads to AC voltage distortion. The inverter generates the voltage up to 24V AC. By using hybrid inverter or multi-mode inverter (solar and storage system) it can simultaneously manage inputs from both solar panels and a battery bank, charging batteries with either solar panels or from direct supply. By using of space vector PWM based inverter it generate sinusoidal voltage and current. The main advantage of our project is giving high efficiency and low harmonic distortion in solar power generation.

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RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT: ANFIS BASED EFFICIENT CONTROLLED DFIG FOR WIND ENERGY CONVERSION SYSTEM USING MPPT

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ABSTRACT

Wind energy has emerged as one of the topmost proliferated sustainable power sources in recent years. One of the major challenges in harnessing wind energy is to extract maximum power from intermittent generation of wind farms as wind power generation strongly depends on wind speed variation. Among different maximum power point tracking (MPPT) algorithms. Adaptive Neuro Fuzzy Inference System (ANFIS) method is often preferred because of its simple implementation and sensor less scheme.

A Adaptive Neuro Fuzzy Inference System (ANFIS) controller is proposed in this paper to mitigate its deficiencies. Doubly Fed Induction generator (DFIG) model is utilized in this work as the generation unit to support wider turbine rotor speed range and decoupled control of real and reactive power. The adaptive MPPT controller along with ANFIS controlled DFIG can effectively track the maximum power generated from wind turbine with faster convergence speed.

The simulation results obtained from the overall wind power system prove that the performance of the designed system is convincingly efficient and competent. The previous single phase DFIG wind energy conversion system as 8% losses .But proposed three phase controlled DFIG for 4% losses.

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT: A NEW APPROACH OF CASCADE MULTILEVEL INVERTER FOR SOLAR PV SYSTEM

PRINCIPAL INVESTIGATOR: C.ARULKUMAR

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ABSTRACT

This project presents a new topology of 15-level cascaded multilevel inverter. This proposed topology is an asymmetrical topology and it consists of ten switches. The multi-level inverter is a power electronic system that synthesizes a desired output voltage from several levels of dc voltage as inputs. The fifteen level cascaded multilevel inverter is for dropping the total harmonic distortion. The cascaded multilevel inverter has various multi carrier pulse width modulation control strategies.

The main objective of this project is to control the output voltage and to reduce the harmonic distortion at the output by increasing number of levels. The higher the number of levels produces a better output voltage. The cascaded multilevel inverter is the high power quality waveforms due to reduction in harmonics distortion and also the reduction of dv/dt stresses on load. This topology studies a multilevel inverter with unequal dc sources using a level shifting Multi Carrier Pulse Width Modulation technique. By applying this concept, the output can be improved with lesser number of switches.

A small total harmonic distortion is the most important feature of these inverters. Multilevel inverter is used in this work with proposed control circuit to control the output voltage using sinusoidal pulse width modulation (SPWM).ANFIS controller is used to control this system to get the required output voltage. The results gained in this work prove the validity of the proposed controller of having an output voltage with minimum distortion.

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT: SELECTIVE HARMONIC ELIMINATION OF BLDC MOTOR USING FREQUENCY FILTER CIRCUIT

PRINCIPAL INVESTIGATOR: P. HAMSAVENI

CO-PRINCIPAL INVESTIGATOR: D.MURUGASAN

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ABSTRACT

Selective harmonic elimination pulse width modulation (SHE-PWM) techniques offer a tight control over the harmonic spectrum of the current waveform generated by a drive system .Several algorithm are available and they solve resultant nonlinear transcendental equation , which describes SHE-PWM problem. The adaptive algorithms can perform better in eliminating unwanted lower order dominant current harmonics components present in PMBLDC motor drive last mean square (LMS) and recursive mean square (RMS) adaptive filtering algorithm to eliminated selective line current harmonics are to among the methods of adaptive noise cancelling in digital signal processing. This is proposed approached can eliminate an even or odd arbitrary number of harmonics without any penalties in switching frequency and also has suitability to implement even when the drive is partially loaded. The harmonic cancellation task in accomplished by generating reference signal with frequency that should be eliminated from the motor line current . The weights of adaptive filter are adjusted to totally eliminate the component with undesired frequency . In consequence, the proposed methodology also reduced the input current total harmonic distortion (THD).

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT: HYBRID RENEWABLE ENERGY USING BICYCLE

PRINCIPAL INVESTIGATOR: S.SUGANYA

CO-PRINCIPAL INVESTIGATOR: A.SUGANYA

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ABSTRACT

Solar bicycle is an electric vehicle that provides that alternative by harnessing solar energy to charge the battery and thus provide required voltage to run the motor. Since India is blessed with nine months of sunny climate thus concept of solar bicycle is very friendly in India. Fuel using vehicle is producing lot of pollution but solar bicycle is not produce any other pollution. This solar bicycle is eco-friendly. There are many types of bicycle in the world such as normal bicycle that people need to paddle for it to move, motorized bicycle that uses fuel as its prime power and electric bicycle that can only be sufficient for an hour.

Hybrid bicycle combines the use of solar energy as well as the dynamo that runs through pedal to charge the battery and to run the bicycle. Thus solar hybrid bicycle become a vital alternative to the fuel for automobile and thus its manufacturing is essential.

In our project solar panel, battery and dynamo is used to run the bicycle. The distance will get increased by using the solar panel and dynamo. The performance of the system is analyzed practically.

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT: MOTOR STARTING & HARMONIC ANALYSIS USING ELECTRICAL TRANSIENT ANALYSIS PROGRAM

PRINCIPAL INVESTIGATOR: Dr.B.MURALIBABU

HoD

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ABSTRACT

Basically, in industries more than seventy percentage of the supplied load is motors, due starting of large motors poses a challenge and causes disturbances to the network. These disturbances are elevated when motors are directly connected to a weak network. This is because a significant voltage drop develops across the source impedance when the, dominantly reactive, starting current passes through it. It leads other loads, such as electronic devices and sensitive control equipment, may be adversely affected during motor-starting. There is a wide range of variation in the amount of voltage drop that can be tolerated by static drives and computers. Voltage fluctuations may also cause objectionable fluctuations in lighting.

Conventional Variable Frequency Drives are used for induction motor starting for improving energy conservation it consists of nonlinear loads such as rectifier and inverter (AC-DC-AC). These VFDs are the biggest cause of harmonics generation on power lines. Passive LC filters are used to control the harmonic currents present on power lines. For the project Malaysia's largest district cooling service provider Gas District Cooling Sdn. Bhd is modelled using Electrical Transient Analysis Program (ETAP) and analysed both Motor starting and Harmonic analysis to ensure the system safe operation without interrupting any loads and to reduce harmonic penetration harmonic filters are modelled to maintain Harmonic percentage value within a limit.

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT: FABRICATION AND TESTING OF TRANSFORMER

PRINCIPAL INVESTIGATOR: Dr.A.RATHINAM

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ABSTRACT

The life of a transformer mostly depends upon how it has been installed, commissioned and maintained. A finished transformer is inspected for its full compliance before dispatch as well as after it reaches the site. Proper fabrication and testing are also very important to ensure a life for a transformer.

It is recommended that a strong foundation base be given in case of a pole mounted transformer. or a concrete level floor to prevent accumulation of the water for a ground mounted transformer. In the event that oil is dispatched separately. It should be ensured that only clean and dry oil is used for filling at site.

In case a transformer is required for drying at site, a suitable oven or streamline service. Insulation of various accessories, including the cable box, Breather, explosion vent, Buchholz relay, temperature indicator, etc.., should be proper. Earthing of the transformer bodies also an important aspect during insulation.

After successful erection, pre-commissioning tests as per the checklist are carried out before commissioning. Maintenance of different accessories, including handling of oil and frequent inspection have to be done as per procedure.

So in this the detailed information of FABRICATION AND TESTING OF TRANSFORMER is explained in detail.

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT: HIGH SENSITIVE ACETONE AND ETHANOL GAS SENSOR BASED MNCO2O4 MICROSPHERES BY A FACILE HYDROTHERMAL ROUTE

PRINCIPAL INVESTIGATOR: S.RATHINAVEL

CO-PRINCIPAL INVESTIGATOR: C.HEMALATHA

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ABSTRACT

Nanotechnology is defined as a combination of science, engineering and technology, which is used to study and design the devices by controlled manipulation of size and shape of the materials at nanometer scale. Nanotechnology is an emerging technology that enables scientists to develop new materials and products at the molecular level. Nanotechnology literally means "any technology that performed on a nanoscale". "Nano science is the study of phenomena and manipulation of materials at atomic, molecular and macromolecular scales, where properties differ significantly from those at a larger scale" and "nanotechnologies are the design, characterisation, production and application of structures, devices and systems by controlling shape and size at nanometre scale".

These results show that the $MnCo_2O_4$ enhances acetone gas sensing properties. This sensor acts as an excellent candidate for detecting the acetone gas at room temperature with short recovery time.

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT: SINGLE PHASE SOLAR PV SYSTEM WITH BATTERY AND EXCHANGE OF POWER FOR DOMESTIC PURPOSE

PRINCIPAL INVESTIGATOR: R.SATHEESHKUMAR

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ABSTRACT

Most of the present day resources of energy are limited and irreplaceable. The next generation will face acute energy crisis if alternate resources of energy are not developed concurrently. Increasingly cost and import of conventional resources have bad effect on the economy of a country, and the only cheaper solution is "unlimited power" from the sun. The use of energy is so far limited in household applications. In fact, if we harness only 0.0034 percent of the solar energy reaching the Earth's surface, the energy need of the whole world will be met. In the present work, a substitute of conventional resources has been proposed by non-conventional resources by solar setup.

The developed solar system is cheaper, portable, user friendly, and free from maintenance. The paper stresses on the need of replacement of conventional resources by solar in every home for reducing the energy crisis at present.

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT: DESIGN OF AN INVERTER USING PWM TECHNIQUE

PRINCIPAL INVESTIGATOR: D.BOOPATHI

CO-PRINCIPAL INVESTIGATOR: S. SIYAMALAGAWRI

HoD

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ABSTRACT

Now a day's India has much electrical power demand. Due to the electrical demand, India has the many problems in terms of production and economic. The solution for the power demand is the effective use of renewable energy sources. It is reliable to operate and eco-friendly.

In our project, we use solar energy to produce electric power using Photovoltaic cell. We have installed 14 solar panels and each panel consists of 62 cells. Each cell produces an output voltage of 0.5V DC supply. The panels are connected in series-parallel combination with the output voltage of 64V and current rating of 58Ampere. That energy converts 64V to 48V by the use of charge controller. We connected four 12V batteries in series connection to store the energy obtained from the solar panel. The loads are operated on AC supply but, the produced energy is DC power. So, we need to convert the produced DC power to AC power. For that, we designed a PWM inverter by Space Vector PWM technique. The inverter gives the output voltage of 230V and current of 15.21Amp AC supply. Then we can operate the load in AC supply.

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT: ANALYSIS OF HYBRID POWER GENERATION USING SAVONIUS BLADE

PRINCIPAL INVESTIGATOR: K. K.POONGODI

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ABSTRACT

Now a day's electricity is most needed facility for the human being .All the conventional energy resources are depleting day by day. So have to shift from conventional to non-conventional energy resources. In this the combination of two energy resources takes place i.e. wind and solar energy. This process reviles the sustainable energy resources without damaging the nature. To give uninterrupted power by using hybrid energy system.

To generate the electricity by using this method to obtain zero pollution, zero noise effect and eco friendly. In future savonius wind turbine becoming a part in renewable energy resources for power generation. There by contributing to the reduction of CO_2 production and economic growth.

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT: ELEGANT SOLAR PV ISOLATED OBSERVE AND MANAGE DIVISION

PRINCIPAL INVESTIGATOR: G.DEIVAMANI

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ABSTRACT

The main aim of this project is to utilize the application of the Ardunio board to control the intensity of street light. As the traffic decreases slowly during late-night hours, the intensity gets reduced progressively till morning to save energy and so, the street lights switch on at the dusk and then switch off at the dawn, automatically. The process repeats every day. White Light Emitting Diodes (LED) replaces conventional HID lamps in street lighting system to include dimming feature. The intensity is not possible to be controlled by the high intensity discharge (HID) lamp which is generally used in urban street lights. LED lights are the future of lighting, because of their low energy consumption and long life. LED lights are fast replacing conventional lights because intensity control is possible by the pulse width modulation. This proposed system uses an Ardunio board and a rectified-power supply. Strings of LED are interfaced to the Ardunio board with a MOSFET device. The intensity control of the LED light is possible by varying duty cycle from a DC source. A programmed Ardunio board is engaged to provide different intensities at different times of the night using PWM technique. This project is also enhanced by integrating the LDR to follow switching operation precisely.

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT: SMART ENERGY CONSERVATION USING IOT

PRINCIPAL INVESTIGATOR: S.MANIKANDAN

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ABSTRACT

Nowadays recent trends in electrical technology are increasing day by day. So, here we are going to introduce new ECB(electrical control board) meter concept in which EB system works with prepaid money concept. As we know already our home appliances are running on electricity which we have to pay for them monthly if you are not using then also. But in this concept, our home ECB system will work only after you buy some units to run your electric appliances. As per block diagram shown below, a relay is connected to a main power supply. Whenever you recharge your ECB system a notification message will receive on your server as well as LCD display through GSM which turns ON Relay & also EB system.

If voltage and current level increases due to faults we can calculate current, voltages by using sensors and display on LCD. Whenever consumed your 90% of units you will get a notification alert on server and LCD display to recharge your ECB system. After recharges only your relay restart again. The proposed system equipments are often subjected to various types of faults while they are in operation. When a fault occurs, the characteristic values (such as impedance) of the machines may change from existing values to different values till the fault is cleared.

There may be lot of probabilities of faults to appear in the power system network, including lighting, wind, tree falling on lines, apparatus failure, etc. A fault in an electric power system can be defined as , any abnormal condition of the system that involves the electrical failure of the equipment, such as , transformers, generators, bus bars, etc. The fault inception also involves in insulation failures and conducting path failures which results short circuit and open circuit of conductors. Under normal or safe operating conditions, the electric equipments in a power system network operate at normal voltage and current ratings. Once the fault takes place in a circuit or device, voltage and current values deviates from their nominal ranges.

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT: DETECTION OF FAULT FROM THERMAL IMAGE OF THREE PHASE INDUCTION MOTOR

PRINCIPAL INVESTIGATOR: V.ROYNA DAISY

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ABSTRACT

An approach of extraction analysis for fault diagnosis of rotating machinery based on thermogram investigation using color features is proposed in this paper. This research was proposed since condition monitoring and motor failures are great concern in industries. Early fault detection in machineries can avoid production lost and reducing maintenance costs. Therefore, in this work, infrared thermography (IRT) is used as a tool to detect early sign for faults since this infrared thermography (IRT) is one of the most effective non-destructive testing techniques of condition monitoring and fault diagnostics. By using this infrared thermography (IRT) technology, the information of machine condition can be analyzed. In the present study, 300 thermal images are used in this simulation process whereby the images are classified into two classes namely normal and abnormal.

The first class consists of 150 images normal bearing while another 150 images denote abnormal bearing class. Fuzzy C means clustering feature-based algorithm, RGB color space and active contour segmentation are employed in this paper in order to process and differentiate between normal and abnormal bearing image by means of color features called statistical technique. Although FCM is prominent for image segmentation, the results are mainly affected by the identification of number of clusters and the initialization of the centroids.

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT: PWM CONTROL TECHNIQUES FOR SEVEN LEVEL INVERTER

PRINCIPAL INVESTIGATOR: G.UMAMAHESWARI

HoD

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ABSTRACT

This paper presents a single-phase seven-level inverter controlled by pulse width modulation (PWM) switching techniques. The proposed PWM techniques have been designed based on minimum switching power loss and minimum number of total harmonic distortion (THD). Therefore a renewed seven-level multilevel inverter topology is introduced incorporating the least number of unidirectional switches and gate trigger circuit.

Five switches employing in single phase seven level inverter, there by ensuring the switching losses, size and the installation cost will be reduced. The proposed PWM techniques have the merits of power rating and power quality which in terms reduce harmonic distortion and lower electromagnetic interference.

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT: IMPLEMENTATION OF SOLAR TRACKING SYSTEM

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ABSTRACT

Energy crisis is the most important issue in today's world. Conventional energy resources are not only limited but also the prime culprit for environmental pollution. Renewable energy resources are getting priorities in the whole world to lessen the dependency on conventional resources. Solar energy is rapidly gaining the focus as an important means of expanding renewable energy uses. Solar cells those convert sun's energy into electrical energy are costly and inefficient. Different mechanisms are applied to increase the efficiency of the solar cell to reduce the cost. Solar tracking system is the most appropriate technology to enhance the efficiency of the solar cells by tracking the sun.

A microcontroller based design methodology of an automatic solar tracker is presented in this paper. Light dependent resistors are used as the sensors of the solar tracker. The designed tracker has precise control mechanism which will provide three ways of controlling system. A small prototype of solar tracking system is also constructed to implement the design methodology presented here. Through tracking, there will be increased exposure of the panel to the sun, making it increased power output. The trackers can either be dual or single axis trackers.

Dual trackers are more efficient because they track sunlight from both axes. The energy potential of the sun is immense. Despite the unlimited resource however, harvesting it presents a challenge because of the limited efficiency of the array cells. There is a growing need for energy from such sources as solar, wind, ocean tidal waves and geothermal for the provision of sustainable and power. Solar panels directly convert radiation from the sun into electrical energy. The panels are mainly manufactured from semiconductor materials, notably silicon.

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT: PREPAID ENERGY METER USING ARDUINO AND GSM MODULE

PRINCIPAL INVESTIGATOR: C.GOWRISHANKAR

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ABSTRACT

In our project we develop the technology to say that to have the reading by with the help of Arduino board and the GSM module from the development of it here we used to have the measurements to be completely taken over in it. This advanced technology we used to have the easiest way in taking out the reading value in it. In this project, we show the changes to be shown over in it completely. The payment can also be controlled in it with the different access of values on this, and to the extension of values the value of amount can be fixed on it. From the project we can get to fix the amount by that a particular unit of charges only can be consumed on it. and a desired unit can be only used and there is no extra number of units get to be used on it. This project has a complete action to say that an energy meter is used and then we get to have the whole control by using the Arduino board and the GSM module on it. Here by this we get to have the overall control using the main control of the board through the different aspects of values on it. The change of value, we can completely show down the changes with some of important aspect of changes over this value. The project we get to have the complete advantage to show on set of different things. The main advantage in this is we can able to fix the number of units that can be used over in it.

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT: CLOSED LOOP DESIGN FOR PFC BOOST CONVERTER

PRINCIPAL INVESTIGATOR: M.RAJA

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ABSTRACT

The feedback compensation and power factor corrector boost converter are present in this model. It is expressed by the conversion output of boost converter. The detailed design of boost converter and comparison of actual output voltage and boost converter output voltage. The PSIM simulation result of boost converter connected with universal ac supply to verify the concept of boost converter and which predict the steady state behavior of continuous conduction mode by PFC boost converter

In power supplies with front end power factor correction circuits meeting the requirement for power factor and total harmonic distortion (THD).

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT: SEQUENCE PREDICTION OF FIRING ANGLE BLDC MOTOR DRIVE USING LOOKUP TABLE

PRINCIPAL INVESTIGATOR: D.MURUGASAN

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ABSTRACT

BLDC motors are very popular in a wide variety of applications. Compared with a DC motor, the BLDC motor uses an electric commutator rather than a mechanical commutator, so it is more reliable than the DC motor. In a BLDC motor, rotor magnets generate the rotor's magnetic flux, so BLDC motors achieve higher efficiency. The information of the rotor position provided by these sensors are then used to obtain the accurate firing timing of the four switches of the 3-phase inverter in the 3-phase BLDC drive system, required for accomplishing the electronic commutation process of the motor. If one of the hall effect sensor stops working due to some damage, then the six firing sequences cannot be obtained and the motor stops running. A lookup table is an array that replaces runtime computation with a simpler array indexing operation. The savings in terms of processing time can be significant, since retrieving a value from memory is often faster than undergoing an "expensive" computation or input/output operation.

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT: ANALYSIS AND IMPLEMENTATION OF FUSE LUO CONVERTER

PRINCIPAL INVESTIGATOR: M.RAJA

HoD

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ABSTRACT

This project compares a new type of AC-AC converter which can operate as traditional inverting buck boost converter with DC-DC buck-boost converter. AC-AC converter generally consists of six bidirectional voltage blocking switches and six unidirectional current switches, thus its acts as AC-AC converter .Depending on the input inductor values the output voltage changes and thus acts as buck-boost .While DC-DC have only switch with less complications. Pulse width can be varied to make it work in either buck-boost mode. In this paper we compare output voltages of both the circuits. And this output voltage is given to universal motor to control its speed. Single phase universal motors are mainly used in applications as washing machine and vacuum cleaners, trimmer machine as well as many domestic applications. Universal motor is known for its variable speed maintenance but its disadvantage is constant its speed.

Generally to control its speed, cyclo converters are used. Due to commutation problem and less immune to shoot through voltage problem. AC-AC buck-boost is designed with input inductor and two capacitors. This output voltage compared with DC-DC converter in Boost mode and graphs are plotted .Thus DC-DC converter has more output voltage and less switching complication unlike AC-AC converter and proved in experimental results as provided.

Keywords: Induction motor, AC-AC, DC-DC, Open loop, Buck-Boost converter.

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT: HOME SECURITY SYSTEM BASED ON SECRET KEY GENERATION

PRINCIPAL INVESTIGATOR: G.UMAMAHESWARI

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ABSTRACT

This paper introduce a smart home system which could supervise house remotely and realize real-time monitoring of home security status through mobile phone. The paper also describes the realization of the system hardware and software in detail. This system combined embedded technique with GSM module. Design adopted the Liod platform for master control system which are processor is PIC module to realize the information collection, analysis and processing. To detect door opening events based on ADXL335 Accelerometer and build a prototype home security system that can be detect door openings and notify the home owner via e-mail, SMS and phone calls upon break-in detection. The door consists of magnet which is connected to relay, as relay detached from magnet then signals will generate via relay and send it to PIC16F877A Microcontroller and action takes place according to piece of code written in the chip and GSM module send the message to the Home owner mobile phone. GSM module communicated to transmit all the information gathered by this system. Design also realize the data acquisition, which can be transmitted via wireless to monitoring center to remotely understand the house condition. On the whole, through this system can remotely and real-time monitor the house status.

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RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT: NOVAL ROTOR SIDE SEPIC CONVERTER BASED MPPT FOR GRID CONNECTED PMSG WIND ENERGY CONVERSION SYSTEM

PRINCIPAL INVESTIGATOR: S.RAMACHANDRAN

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ABSTRACT

A robust and reliable wind power evacuation scheme through a Permanent-Magnet Synchronous Generator (PMSG) is proposed in this project. In this topology, a generator-side H-bridge rectifier and a grid-side Sepic converter (SC) is employed to facilitate an efficient and economical Wind Energy Conversion system.The energy conversion technologies of small wind power systems are being currently studied and new topologies have been developed to improve the performance of converters associated with variable speed wind turbines. Most maximum power point tracking (MPPT) algorithms are based on turbine torque and velocity signal feedback as well as detailed knowledge of turbine model parameters. This Project proposes the implementation of a wind energy conversion system whose power extraction algorithm does not use mechanical sensors, wind measurement or predefined values that define the turbine operating point. The algorithm is the Maximum Power Point Tracking method, which is applied at a Single Ended Primary Inductance Converter. The choice of the SEPIC is justified due to input current characteristics and high-power processing capacity. The step-up / step-down topology is essential for retain the output voltage at specified values.The PMSG is connected to a three phase resistive load through a switch mode rectifier and a Z- source inverter. Control of the generator side converter is used to achieve maximum power extraction from the available wind power. The feasibility and the effectiveness of the proposed system's topology and hierarchical coordinated control strategy were verified using MATLAB/Simulink simulations. Input of the system is 12KVA and the Z-Source inverter output produced is 440volt.

PAAVAI ENGINEERING COLLEGE,
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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT: SMART RENOVATE BASED ON UNDERGROUND FAULT ILLUMINATING STRUCTURE USING GSM

PRINCIPAL INVESTIGATOR: R.MUTHUKUMAR

CO-PRINCIPAL INVESTIGATOR: D.PALMANI

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ABSTRACT

An underground fault location model of cable using Arduino and GSM (Global system for mobile communication) module, used for remote indication to diminish power outages and heavy loss of profit by sending message to main control room so the field engineer can resolve the issue of an exact fault location. In underground system, occurrence of fault is rare due to cable buried in the ground and incase of fault occur in underground cable difficult to locate the exact position of fault to overcome this problem we can easily rectify voltage drop, short circuit, open circuit fault, we came up with the idea presented in paper.

The main aim is to diagnose the open circuit and short circuit faults distance from base-station in kilometers. This prototype is congregated with a set of resistors showing length of cable in kilometers and a set of switches are used to create fault at every known kilometer to determine the exactness and results regarding fault readings is displayed on a webs connected with the Arduino uno board and sending message to the field engineer through GSM.

Further NI Multisim software is used to simulate the fault. Time consume for fault repair is reduced in this paper than the other ideas. Because of GSM technology is send the message to the authorize person. This project is beneficial in reducing the cost, production losses by saving the time and efforts for sectionalization of faults and improving the power availability to consumers through an enhancement of overall efficiency of power nets.

PAAVAI ENGINEERING COLLEGE,
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(AUTONOMOUS)

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT: WIRELESS ELECTRONIC DISPLAY BOARD USING GSM TECHNOLOGY

PRINCIPAL INVESTIGATOR: G. DEIVAMANI

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ABSTRACT

In the last couple of decades, communication technology has developed by leaps and bounds. The use of "Embedded System in Communication" has given rise to many interesting applications. One of such applications is public addressing system (PAS). Many companies are manufacturing audio / video systems like public announcement system, CCTV, programmable sign boards etc. But all these systems are generally hardwired, complex in nature and difficult to expand. So, by adding wireless communication interface such as GSM to these systems, we can overcome their limitations. Now-a-days LED Message Scrolling Displays are becoming very popular. These displays are used in shopping malls, college/school notice boards, theaters, public transportation, traffic signs, highways signs, etc. This paper describes the GSM based LED display.

PAAVAI ENGINEERING COLLEGE,
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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT: THE CONTROL OF REACTIVE POWER USING ACTIVE POWER FILTER IN DISTRIBUTION SYSTEM

PRINCIPAL INVESTIGATOR: A.UDHAYA KUMAR

HoD

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ABSTRACT

The current state of development in demand response (DR) programs in smart grid systems, there have been great demands for automated energy scheduling for residential customers. Recently, energy scheduling in smart grids have focused on the minimization of electricity bills, the reduction of the peak demand, and the maximization of user convenience. Thus, a user convenience model is proposed under the consideration of user waiting times, which is a non-convex problem. Therefore, the non-convex is reformulated as convex to guarantee optimal solutions. Moreover, mathematical formulations for DR optimization are derived based on the reformulated convex problem. In addition, two types of pricing policies for electricity bills are designed in the mathematical formulations, i.e., real- time pricing policy and progressive policy. In real-time pricing policy, convexity is guaranteed whereas progressive policy can not guaranteed.

A low cost platform for interconnecting the power devices and various sensors in a home via through internet network. This will help the home owners to provide a simple and reliable way to automate their environment. This paper proposes Smart grid systems consist of digitally based sensing, communications, and control technologies and field devices that function to coordinate multiple electric grid processes.

The smart grid delivers electricity from producers to consumers using two-way digital technology, and allows control of appliances in the consumers' houses and of machines in factories to save energy, while reducing costs and increasing reliability and transparency.

To reduce energy demand with solar energy to the grid during peak load. The reduction of the peak demand and the maximization of user convenience. using Advanced metering with automated relay in power distribution.

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT: MODIFICATION OF FUEL BIKE TO ELECTRIC BIKE

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ABSTRACT

In order to reduce the usage of fossil fuels and to increase the usage of renewable energy our project focuses on reducing the usage of fossil fuels and to increase the renewable energy usually the utilization of fossil fuels as the energy source causes environment degradation since the fossil fuels are not completely utilized there remains certain amount of renewable energy source could be based on exercise equipment. The energy expended in a typical workout at the gym is usually wasted in the mechanics of the equipment.

This project harnessed the mechanical energy of the machine and converted it into an electrical energy using a generator based system. Here the exercise equipment will be attached to a permanent magnet dc generator. This creates a dc voltage which will be fed into a circuit and then sent to a battery where it can be stored for future use. The stored energy then can be utilized by sending it to the inverter which converters a dc voltage into an AC voltage at the desired voltage and frequency depends on the appropriate transformers. Switching and control circuits. This project will introduce the project and present all applicable information regarding the design, development and the final product.

Human power is a power produced from gym exercise. Human powers can another renewable source of energy. The intention of this project is to design a system based on renewable energy source. A generator used here is the motor which is powered by a gym bicycle. A motor is connected to gym bicycle in such way as the circular rotation of the front wheel rotates the motor shaft. The resulting direct current is converted into different usable DC voltages levels. By converting this DC voltage into AC levels, It will useful to light bulbs, laptop and mobile charging, musical system and other appliances. This will reduce the energy demand in today's life.

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DEPARTMENT OF MECHANICAL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT:

DESIGN AND FABRICATION OF HIGHWAYS WIND TURBINE

PRINCIPAL INVIGILATOR: J.Mahendiran

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ABSTRACT

In today‘s life the demand on electricity is much higher than that of its production the main objective of our project is to produce electricity by using the force of aircreated by the moving vehicle in highways. In highways suffers a lot to travel in night time because of lightning problem. This problem can be overcome by VERTICLE AXIS HIGHWAY TURBINE (VAHT).This is a new unique method of power generation. In this method the windmill blade is designed in a vertical direction and it is kept at the middle of the highway divider by a series combination. The force in the middle portion is higher than the side of the road .This force will rotate the vertical turbine blade. And this blade is coupled with the generator and this generator will produce electricity. In our method we have coupled one more generator and we have increased its.

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DEPARTMENT OF MECHANICAL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT:

FABRICATION AND ANALYSIS OF LEAF SPRING BY USING METAL MATRIX COMPOSITE MATERIAL

PRINCIPAL INVIGILATOR: G.Sureshkumar

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ABSTRACT

Weight is an important and contributing factor in an automobile in improving riding qualities. About ten to twenty percent of the weight of the system is provided by the leaf spring alone. Composite materials have the major advantage of high strength to weight ratio, with continuously decreasing travel cost in addition to other advantages like excellent corrosive resistance, superior fatigue strength and high specific strain energy storage capacity. The present work aims to evaluate the usage of composite material for the leaf spring of automobiles in order to reduce the effective weight of the suspension system, by this it is expected to improve the riding qualities of the automobile. A composite mono-leaf spring weighing about 3kgs is used to replace a steel leaf spring whose weight is about 12kgs. The present study also aims to compare the performance of the composite leaf spring with that of the conventional steel leaf spring and to suggest the suitability of using composite materials in automobile industry. In this approach static and dynamic analysis were conducted with the help of ANSYS 16 analysis software. The performance results are compared with steel leaf spring. Finally it is concluded that the composite leaf spring, which is 70% less in weight, is performing better than conventional steel leaf spring. It allows the traveler running leaf springs to be consistent night after night without having to constantly measure, monitor and change their springs for loss of sagging. The initial cost is a value based on the incredible service life. The composite material is mainly used to reduce the weight and increase the strength, stiffness etc Stir casting process is mainly used to manufacturing of reinforced with metal matrix composite. The manufacturing of aluminum alloy based on stir casting method its used to one of the most economical method of processing MMC.

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DEPARTMENT OF MECHANICAL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT:

EFFECT OF DIFFERENT ELECTROLYTE ON ELECTROCHEMICAL MACHINING FOR METAL MATRIX COMPOSITE

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CO-PRINCIPAL INVIGILATOR: S.Maniraj

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ABSTRACT

All engineering materials can be machined by one or combination of processes in such a way that the material's potential is fully exploited. Electrochemical machining is found to be a most promising process that produces various components from the hard-to-machine materials for the various applications. Electrolyte concentration is playing a positive role by improving the electrolyte conductivity, but negatively forming the passivation layer on the cut surfaces. In order to improve the surface finish and removal of generated residual materials from the cut surfaces, abrasive particles were fed along with electrolyte into the machining zone. This present paper investigates the sodium chloride (NaCl) electrolyte with varied concentration (10–30%) in association with SiC abrasive particles on the material removal rate, surface roughness, and radial overcut while machining of aluminum 6061–boron carbide (5–15 wt%) composites.

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DEPARTMENT OF MECHANICAL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT:

DESIGN OF DTH DRILL BIT

PRINCIPAL INVIGILATOR: J.Sujith Kumar

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ABSTRACT

Process of DTH (down-the-hole) hammer drilling has been characterized as a very complex phenomenon due to its high nonlinearity, large deformation and damage behaviors. Taking brittle materials (concrete, granite and sandstone) as impact specimens, the explicit time integration nonlinear finite element code LS-DYNA was employed to analyze the impact process and the penetration boundary conditions of DTH hammer percussive drilling system. Compared with previous studies, the present model contains several new features. One is that the 3D effects of DTH hammer drilling system were considered. Another important feature is that it took the coupling effects of brittle materials into account to the bit-specimen boundary of the drilling system. This distinguishes it from the traditional approaches to the bit-rock intersection, in which nonlinear spring models are usually imposed. The impact forces, bit insert penetrations and force-penetration curves of concrete, granite and sandstone under DTH hammer impact have been recorded; the formation of craters and fractures has been also investigated. The impact loads of piston-bit interaction appear to be relatively sensitive to piston impact velocity. The impact between piston-bit interaction occurs at two times larger forces, whereas the duration of the first impact doesn't change with respect to the piston velocity

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RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT:

DESIGN OF DTH DRILL BIT

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ABSTRACT

Process of DTH (down-the-hole) hammer drilling has been characterized as a very complex phenomenon due to its high nonlinearity, large deformation and damage behaviors. Taking brittle materials (concrete, granite and sandstone) as impact specimens, the explicit time integration nonlinear finite element code LS-DYNA was employed to analyze the impact process and the penetration boundary conditions of DTH hammer percussive drilling system. Compared with previous studies, the present model contains several new features. One is that the 3D effects of DTH hammer drilling system were considered. Another important feature is that it took the coupling effects of brittle materials into account to the bit-specimen boundary of the drilling system. This distinguishes it from the traditional approaches to the bit-rock intersection, in which nonlinear spring models are usually imposed. The impact forces, bit insert penetrations and force-penetration curves of concrete, granite and sandstone under DTH hammer impact have been recorded; the formation of craters and fractures has been also investigated. The impact loads of piston-bit interaction appear to be relatively sensitive to piston impact velocity. The impact between piston-bit interaction occurs at two times larger forces, whereas the duration of the first impact doesn't change with respect to the piston velocity

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DEPARTMENT OF MECHANICAL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT:

OPTIMIZATION OF MICRO-EDM PROCESS PARAMETERS BY USING MULTI- CRITERIA DECISION MAKING METHODS

PRINCIPAL INVIGILATOR: M.S.Vijayanand

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ABSTRACT

Ti-6Al-4V super alloy is an important engineering material with good strength to weight ratio and a wide range of applications in a number of engineering fields because of its excellent physical and mechanical properties. This work determines optimum process parameters such as pulse on time, peak current, gap voltage and flushing pressure, which influence the micro-electro discharge machining (EDM) process during machining of Ti-6Al-4V using combined methods of response surface methodology (RSM) and fuzzy-technique for order preference by similarity to ideal solution (TOPSIS). Central composite design (CCD) is used in the experimental investigation, and a decision making model is developed to identify the optimum process parameters in the microEDM process, which influence several machining criterions such as material removal rate (MRR), tool wear rate (TWR), overcut (OC) and taper. Triangular fuzzy numbers are used to determine the weighting factor for each process criterion. Further a fuzzy-TOPSIS method is used to select the most desirable factor level combinations.

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DEPARTMENT OF MECHANICAL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT:

DESIGN AND FABRICATION OF DRAINAGE CLEANER

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ABSTRACT

Wastewater is characterized as the stream of utilized water from homes, organizations, ventures, business exercises and foundations which are subjected to the treatment plants by a precisely planned and built system of funnels. There are no occasions for wastewater treatment, and most plants work 24 hours each day of the week. Wastewater treatment plants take a shot at basic purpose of the water cycle, helping nature shields water from the intemperate contamination. But the abundant amount of undesirables in the waste water such as solid wastes and other form of materials that do not form the waste water treatment can overwhelm the system at times due to rainfall and natural forces. In order to remove a certain amount of solid waste and undesirables from the waste water we use the automatic gutter cleaning machine which is intended to as a check point at various focus points where the waste get accumulated.

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DEPARTMENT OF MECHANICAL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT:

FABRICATION AND INVESTIGATION OF NATURAL FIBRE COMPOSITE BASED BRAKE

PRINCIPAL INVIGILATOR: S.Prabhakaran

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ABSTRACT

Work has been carried out to investigate the flexural properties of composites made by reinforcing banana and pineapple as the new natural fibers into epoxy resin matrix. The natural fibers were extracted by retting and manual process. The composites are fabricated using banana and pineapple fiber reinforcements. Hybrid composites were prepared using banana/pineapple fibers of 0/40, 15/25, 20/20, 25/15, and 40/0 Weight fraction ratios, while overall fiber weight fraction was fixed as 0.4Wf. It has been observed that the flexural properties increase with the increase in the weight fraction of fibers to certain extent. The hybridization of the reinforcement in the composite shows greater flexural strength when compared to individual type of natural fibers reinforced composites. All the composites shows increase in flexural strength in longitudinal direction. Similar trends have been observed for flexural modulus, inter laminar shear strength and break load values.

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DEPARTMENT OF MECHANICAL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT:

EXPERIMENTAL INVESTIGATION ON WASTAGE OF COOKINFG OIL AS A FUEL IN DIESEL ENGINE

PRINCIPAL INVIGILATOR: M.Vinothkumar

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ABSTRACT

In this study, energy performance of diesel engine experimentally examined with cooking oil – diesel blends (D95B5, D90B10, D85B15 and D80B20) as retrofit for pure diesel (D100). An assessment of engine performance was investigated at varying engine speeds load conditions for both pure diesel and its blends at both laboratory conditions and under British Standard (BS) conditions. Results of this investigation show that the average engine torque reduction compared to D100 for D95B5, D85B15, D90B10 and D80B20 was found as 9.03%, 10.32%, 13.95% and 23.06% and average engine power reduction was found as 7.09%, 11.48%, 12.43% and 21.12% respectively. In terms of bte, average increase in bte was found as 5.95% and 0.29% for D95B5 and D85B15 but average reduction was found as 3.17% and 9.45% for D90B10 and D80B20 fuel blends, respectively. While, D95B5 was 5.32% lower than D100. From this study, D95B5 produced better performance when compared to D85B15.

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DEPARTMENT OF MECHANICAL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT:

ANALYSIS OF TORQUE SENSOR PROBLEM IN TURBOPROP ENGINE

PRINCIPAL INVIGILATOR: A.P.Sivasubramaniam

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ABSTRACT

As separate shafts are used for propeller and turbine, this aids them to rotate at different RPM. A torsion shaft is used to transmit the torque from main shaft to propeller shaft. Torsion shaft is used to give a deflection which is also used to measure the torque of the engine. This torsion shaft is internally connected with the main power transmission shaft and its other end is coupled to a coupler shaft with engagement of its internal splines to the external splines of coupler shaft. Further this coupler connects to the gearing system and transmits power to the propeller shaft. Due to Continues variable load over internal splines, it is subjected to high rate of wear and tear. This problem can be rectified by Failure Mode Analysis Method, in which heat treatment process of torsion shaft is being carried out. Two test pieces are heat treated separately at different temperatures of 5800C and 5400C at variable time durations. Tuffriding which is a Liquid nitriding process is done with this two test pieces and results are analyzed. The hardness of the material is increased to desired values and its life time is also increased which overcomes the problem.

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DEPARTMENT OF MECHANICAL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT:

EFFECT OF BONE PARTCLES ON THE PROPERTIES AND MICROSTRUCTURE OF BONE PARTICULATE COMPOSITE

PRINCIPAL INVIGILATOR: K.Ramachandran

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ABSTRACT

The effects of uncarbonized (fresh) and carbonized bone particles on the microstructure and properties of polypropylene composites have been studied. The addition of the bone particles ranges from 5 to 25 wt% in uncarbonized and carbonized forms in the polypropylene matrix. The physical and mechanical properties were used as criteria for the evaluation of the composites. Microstructures of the composites were assessed with scanning electron microscopy (SEM/EDS). The results revealed that the addition of carbonized bone particles reinforcement has superior properties than uncarbonized bone particles composite based materials with an increase in the compressive strength, hardness values, tensile strength and flexural strength by 53%, 45% and 35% respectively, and a decrease in the % elongation and impact energy by 75% and 32%, respectively at 25 wt% carbonized bone, with 28% increase in tensile strength at 15 wt% carbonized bone addition. The increase in strength and hardness values was attributed to the distribution of hard phases of bone particles in the ductile polypropylene matrix.

PAAVAI ENGINEERING COLLEGE

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DEPARTMENT OF MECHANICAL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT:

FABRICATION AND MECHANICAL BEHAVIOR STUDY OF FIBER REINFORCED COMPOSITE FOR MARINE APPLICATION

PRINCIPAL INVIGILATOR: M.Makesh

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ABSTRACT

The composite materials are replacing the traditional materials, because of its superior properties such as high tensile strength, low thermal expansion, high strength to weight ratio. The developments of new materials are on the anvil and are growing day by day. Fiber composites such as Glass-Fiber Reinforced Polymers (GFRP) composites and Carbon-Fiber Reinforced Composites (CFRP) became more attractive due to their better properties for marine applications. In this paper, GFRP, CFRP and Hybrid composites are developed and their mechanical properties such as Hardness, tensile strength, compression strength, impact strength, toughness are evaluated. The study used to compare the effect volumetric fraction of fibers in order to improve strength and toughness, this done by using two types of fibers E-glass and carbon & two types of resins epoxy (AralditeLY556 and Aradur HY951) and vinyl ester. In this experimental study, we found that high tensile strength, high specific strength, hardness and low density are obtained with carbon fibre reinforced composites, but high impact strength and toughness are obtained with glass fibre reinforced composites. Finally incorporate the result and try to find alternatives composites using for marine applications and obtain the best mechanical properties

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DEPARTMENT OF MECHANICAL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT:

DESIGN AND ANALYSIS OF MULBERRY LEAVES AUTO-CUTTER

PRINCIPAL INVIGILATOR: J.Selvakumar

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ABSTRACT

Sericulture is the process of farming silkworms to cultivate silk from it. In sericulture the silkworms are fed by mulberry leaves. The major problem in this field is cultivation and cutting of mulberry plants. More manpower is required to cut the mulberry plants and carry them to the silkworm shed. Also, it needs more time. This project “Farmer’s friendly mulberry plant cutter” gives solution for the above-mentioned problems. The project is designed with a movable holder or arm and a rotating cutter. Initially the arm will hold the mulberry plant and the cutter starts to cut the plant. The plant cutter comprises of a storage area to store the plants. The arm holding the plant will drop the plant in the storage area. The entire plant cutter should be moved manually to locate the plant properly. The holding and cutting process are automated.

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DEPARTMENT OF MECHANICAL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT:

ACCELEROMETER CONTROLLED WHEEL CHAIR FOR DISABLED PERSON

PRINCIPAL INVIGILATOR: Dr. K.Sundramurthy

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ABSTRACT

The aim of this paper is to prepare a Hand Gesture Controlled Wheelchair for the physically disabled people who face difficulty in moving from one place to another in day today life. These days joystick controlled wheel chair is available in the market whose cost range between Rs 80,000 to Rs 150,000. We have prepared this Hand Gesture Controlled Wheelchair in Rs 22,000. An accelerometer is used as a sensor which gives an analog signal on its movement in any of the 6 axis directions, that is positive X axis, negative X axis, positive Y axis, negative Y axis, positive Z axis, negative Z axis. In this project we have considered X and Y axis for the direction. Further the input from sensor is given to encoder which sends the data wirelessly through the transmitter, then the data is received at the receiver end and the sensor data is decoded and finally given to microcontroller. Based on data received the from accelerometer the microcontroller sends the signal accordingly to relays to move the wheelchair in forward, backward, left, right directions. The accelerometer used here is MEMS (micro-electromechanical system).

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RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT:

PRODUCTION OF BIO DIESEL FROM ANNONA SQUAMOSA AND ZIZIPHUS SEEDS FOR INVESTIGATING THE PERFORMANCE ANALYSIS

PRINCIPAL INVIGILATOR: K.Anand

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ABSTRACT

This paper presents the production of biodiesel from nonedible, renewable sugar apple seed oil and its characterization. The studies were carried out on transesterification of oil with methanol and sodium hydroxide as catalyst for the production of biodiesel. The process parameters such as catalyst concentration, reaction time, and reaction temperature were optimized for the production of sugar apple biodiesel (SABD). The biodiesel yield of 95.15% was noticed at optimal process parameters. The fuel properties of biodiesel produced were found to be close to that of diesel fuel and also they meet the specifications of ASTM standards.

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RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT:

DYNAMIC ANALYSIS OF CRANK IN COMPOSITE MATERIAL

PRINCIPAL INVIGILATOR: S.T.Kumaravel

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ABSTRACT

Crankshaft is one of the vital elements of the internal combustion engine. The main purpose of crankshaft in automobile is to transform reciprocating linear motion to rotary motion i.e. it is used to translate from piston to crank. This work is about evaluating and comparing the load and fatigue performance of two vying production techniques for crankshaft viz. forged steel and Ti-6Al-4V+12%TiC (Particle Reinforced Metal Matrix Composite) used in automobiles. Three dimensional model of crankshaft shaft is created using ProEngineer. Static simulation has to be conducted on two crankshafts of forged steel and Ti-6Al-4V+12%TiC from similar single cylinder four stroke engines. Finite Element Analysis (FEA) is to be performed to obtain the variation of stress magnitude at critical locations. The static analysis is done and is verified by simulations in finite element analysis software ANSYS. Comparisons for the properties such as equivalent stress, strain and total deformation of crankshafts made up of forged steel and Ti-6Al-4V+12%TiC were determined and the results were compared. Model theoretical calculations are performed for clear analysis. The output of result would provide a possible recommendation for optimization of crank shaft and development of engine design.

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RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT:

DESIGN OF REGENARATIVE BRAKING SYSTEM

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ABSTRACT

In this paper, it is one of the best methods of braking system in electric vehicle which is proposed. The regenerative braking is used to drive the vehicle with more efficient and in effective way. The regenerative braking plays a vital part to maintain the vehicle's strength and getting better energy. Electric ATV vehicles use mechanical brake to increase the roughness of wheel for the deceleration purpose. From the point of view of saving energy, mechanical brake increases out much energy while the EV's kinetic energy is renewed into the thermal one. The braking system for a vehicle is based on hydraulic braking technology. Thus, this traditional braking methodology causes a lot of wastage of energy since it produces unwanted heat during braking. The process of Regenerative braking system is the useful method and rise above the disadvantages. The main purpose is that has been concentrate on the released heat energy from brakes which is regenerated into energy is usable are discussed.

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RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT:

ANDROID BASED ROBOTIC ARM

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ABSTRACT

In a place where science fiction of yesterday is rapidly becoming reality of today. The world needs less physical interaction and more productivity. An android device controlled robotic arm via Bluetooth wireless technology is presented here. Such device is very much required where human reach is not possible or must be avoided. Also, the cheap and robust design of this project makes it a very useful tool in multiple industries.

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RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT:

PAPAYA SEED OIL BIODIESEL AND ITS BLENDS USED IN DIESEL ENGINE

PRINCIPAL INVIGILATOR: P.Elumalai

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ABSTRACT

In this paper, we have produced bio diesel from papaya and watermelon seed oil by trans-esterification process using methanol and KOH (catalyst) and a new biodiesel i.e. WP is produced which is a mixture of papaya seed oil biodiesel and watermelon seed oil biodiesel in 1:1 ratio is prepared. The blends (B0, B20, B30, B40, and B100) of WP with diesel and watermelon 100% and papaya 100% are used for further testing. The performance, combustion and emission test were conducted on single cylinder 4-stroke diesel engine using different blends of these biodiesels and the results showed that B20 is superior blend among other biodiesel blends. Further the performance and combustion characteristics of B20 is very close to diesel while the emission characteristics of B20 is better than that of diesel as the emission of CO, HC and smoke is 27.27%, 23.8%, 8.3% less for B20 than diesel respectively. Thus we concluded that B20 is the most suitable blend of WP for substitute of diesel which will reduce diesel consumption by 20%.

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RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT:

ANDRIOD BASED HYDRAULIC CONTROL EXO SKELETON ARM

PRINCIPAL INVIGILATOR: V.Elango

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ABSTRACT

Using robotics in modern medicine is slowly becoming a common practice. However, there are still important life science fields which are currently devoid of such advanced technology. A noteworthy example of a life sciences field which would benefit from process automation and advanced robotic technology is rehabilitation of the upper limb with the use of an orthosis. Here, we present the state-of-the-art and prospects for development of mechanical design, actuator technology, control systems, sensor systems, and machine learning methods in rehabilitation engineering. Moreover, current technical solutions, as well as forecasts on improvement, for exoskeletons are presented and reviewed. The overview presented might be the cornerstone for future research on advanced rehabilitation engineering technology, such as an upper limb bionic orthosis.

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RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT:

DESIGN AND FABRICATION OF PALLET MACHINE

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ABSTRACT

This research is on the design, fabrication and testing of motorized mechanical feed pelletizer to meet the basic needs of researchers and commercial animal farmers at affordable cost. This research is aimed at providing local technology and skills, making available the machine in the local markets and consequently reducing or eliminating the prohibitive cost of importation. Feed manufacture involves grinding, mixing, extruding ingredients into homogeneous pellets that are water stable, and consequently drying the feed to the required moisture level. The fabrication finds its application in the mixing and pelletizing of domestic animals feeds and aquatic (fish) dietary that require the above processes. In the design and fabrication of this device, focus was directed to obtain a prototype (model) that would function at relatively low energy expenditure. The fabrication involved machining and welding among other processes. Almost all the materials used were sourced locally. The machine was tested and its efficiency increased with increase in die size. The throughput efficiency and feed rate for 7mm diameter die were found to be 97.8% and 0.0407 respectively, whereas 95% and 0.0267 were found to be for the 5mm diameter die.

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RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT:

SOLAR POWERED GRINDING MACHINE

PRINCIPAL INVIGILATOR: N.Logeshwaran

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ABSTRACT

The point of the present work is to outline and create solar power fueled auto charging grinding machine is utilized for granulating any state of objects like Circular, Rectangular, and Polygon. Grinding machine is accustomed to grinding the distinctive sorts of material. The grinding machine is turned by the single stage acceptance engine. Thus our task to be specific solar fueled auto charging grinding machine is a Special kind of Machine. As indicated by the sort of material to be grind, the granulating instrument can be changed. This task gives subtle elements of granulating different shapes and sizes of segments. This machine can be broadly connected in all sorts of ventures. By differing the pulley sizes we can get a top of the line speed of more than 10,000 rpm if necessary. The main change we have to make is to have a completely encased engine to keep out the coarseness. In the present work D.C powered grinding machine which control is drawn by the 12 volt D.C battery. This battery is charged by the solar power based board and the alternator which is coupled to the grinding machine shaft with the assistance of spur gear drive

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RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT:

EXTRACTION OF BIOFUEL FROM WASTE PLASTIC

PRINCIPAL INVIGILATOR: R.Thuyavan

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ABSTRACT

The increased demand and high price for energy sources are driving efforts to convert organic compounds into useful hydrocarbon fuels. Although much of this work has focused on biomass, there are strong benefits to deriving fuels from waste plastic material. Waste plastic is abundant and its disposal creates large problems for the environment. Plastic does not break down in landfills, it is not easily recycled and degrades in quality during the recycling process, and it can produce waste ash, heavy metals, and potentially harmful gas emissions if incinerated at high temperatures. However, thermal processes can be used to convert plastics into hydrocarbon fuels such as gasoline, diesel, aviation / jet fuel, which have unlimited applications in airline industries, helicopter, heavy transportation, and electricity generation. The method and principal of the production / process will be discussed.

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RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT:

FABRICATION OF POWER GENERATION USING MAGLEV WIND MILL

PRINCIPAL INVIGILATOR: R.Thirunavukarasu

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ABSTRACT

The paper project describes the implementation of different type of a wind turbine for purpose of power generation. A vertical axis wind turbine (VAWT) with use of magnetic levitation technology for optimal performance of wind turbine has been discussed. With the merits of conventional VAWT, the merits of starting at low wind-speed, higher efficiency, low noise emission, etc. are also discussed. The major consequence in front of conventional wind turbine is loss of energy during rotation. By using nature of permanent magnet as a perfect replacement for ball bearings levitation of the turbine is intended thus reducing energy losses while rotation. Using this effect wind turbine blades are placed on a rod for obtaining stability during rotation. Power is then generated by using an axial flux generator, which has incorporated the utilization of permanent magnets and a set of coils.

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RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT:

FABRICATION OF TURBOCHARGE IN TWO WHEELERS

PRINCIPAL INVIGILATOR: P.N.Mohankumar

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ABSTRACT

Effect, design and installation of turbo charger in SI engine are available in this paper. Turbo charger in two wheelers is used to increase the efficiency of engine. Supercharger works on engine power while turbo charger works on exhaust gases. Turbochargers are used throughout the automotive industry as they can enhance the output of an internal combustion (IC) engine without the need to increase its cylinder capacity. The emphasis today is to provide a feasible engineering solution to manufacturing economics and "greener" road vehicles. It is because of these reasons that turbochargers are now becoming more and more popular in automobile applications. Small modification is done on vehicle to improve efficiency and also control the exhaust gas emission level. The aim of this project is to increase to volumetric efficiency and also control the emission level of "TWO WHEELERS".

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RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT:

PROCESS OPTIMIZATION OF EMM PARAMETERS FOR PRODUCING MICRO HOLES ON BRASS

PRINCIPAL INVIGILATOR: S.Karthikeyan

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ABSTRACT

Electrical discharge machining (EDM) or micro EDM found successful for production of micro holes on ceramics, hard metal and alloys. In the present study, experimental investigation and parametric optimization are carried out on EDM process for producing micro holes of diameter 500 μm on stainless steel (grade 304).Current (I), gap voltage (V) and pulse on time (Ton) are considered as process parameters and are optimized for improving hole quality [i.e., overcut (OC) and taper angle (θ)]. Statistical regression models are developed for predicting OC and θ and effects of parameters are studied using surface plots. The optimal parameters are obtained for single as well as multiple performance characteristics. The traditional Taguchi analysis is used for optimization of each objective individually. This work presents the application of Taguchi optimization for simultaneous minimization of over cut (OC) and taper angle (θ) for improvement of hole quality in drilling micro holes. The optimal level of factors based on analysis of means (ANOM) with highest signal to noise (S/N) ratio is found as (i.e., I1 − V3 − Ton2). This corresponds to parametric combination being 10 A, 50 V and 150 μs for I, V and Ton respectively that produce improved hole quality with minimum overcut and taper angle. The obtained result is compared with desirability analysis and found that it is closer. Keywords EDMRegression modelTaguchi multi objective optimizationMicro holes

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RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT:

DESIGN AND FABRICATION OF MOTORIZED ROLLING SHUTTER

PRINCIPAL INVIGILATOR: R.Gunasekaran

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ABSTRACT

This shall be built up from interlocking lath sections of aluminum alloy conforming to 53000 (NE5) or 64430 (HE30) of IS: 733. The lath sections shall be from 18 gauge (1.25 mm) section with 78mm Profile Height for curtains The lath section shall be rolled so as to have interlocking curls at both edges and a deep corrugation at the centre with a bridge depth of 16 mm to provide sufficient curtain stiffness for resisting manual pressure and normal wind pressure. Each lath section shall be continuous single piece without any welded joint. When interlocked, the lath section shall have a distance of 75 mm between rolling centres. Each alternate lath section shall be fitted with a malleable cast iron or mild steel clips securely riveted at either end, thus locking the lath section at both ends and preventing lateral movement of the individual lath sections. The clips shall be so designed as to fit the contour of the lath sections. Bottom Profile shall be Bend-resistant double-skinned extruded Aluminum profile for additional strength. The bottom rail shall be fitted with extruded rubber bottom seal that should be suitable to seal against the floor when the door is fully closed.

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RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT:

FABRICATION OF TILTING INDEPENDENCE SUSPENSION SYSTEM

PRINCIPAL INVIGILATOR: P.Mohanraj

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ABSTRACT

As we know that safety of the vehicle is the first and the fore most thing to be considered. In 2-wheelers the safety of the vehicle from accident was understated on two major factors, Directional stability and the Aerodynamic force both are correlated to each other. The tilting mechanism would dramatically increase the maximum speed in curves. The use of tilting mechanism in automobile would decrease the rate of accidents due to slippage. It will give better dynamic stability as well as directional stability to the vehicle, better road grip, better comfort to the passengers, and the most important load carrying capacity of vehicle increases.[1] By this leaning, the centre of gravity balances the centrifugal force which is acting on the vehicle and makes it more stable during turning.

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RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT:

DESIGN AND FABRICATION OF RAIL CUM ROAD VEHICLE

PRINCIPAL INVIGILATOR: K.Vijayakumar

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ABSTRACT

Development of long-span railway cable-stayed bridges in China was systematically concluded including breakthrough of main span and technical innovations. Parametric analysis on Hutong Bridge, a rail-cum-road cable-stayed bridge with main span of 1092m, includes effects of side to mid-span ratio, girder height to mid-span ratio, girder width to mid-span ratio, and effective pylon height to mid-span ratio. Results show that structural rigidity decreases gradually as side to mid-span ratio increases. Increasing girder height improves the structural rigidity limitedly. Girder width influences natural frequency and flutter stability. Increasing effective pylon height could improve the whole vertical rigidity, and reduce the longitudinal rigidity of the pylon.

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RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT:

DESIGN AND FABRICATION OF AUTOMATIC FIBER GLASS GRINDING MACHINE

PRINCIPAL INVIGILATOR: S.Manikandan

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ABSTRACT

This paper deals with the design and fabrication of the automatic glass or mirror cutting machine. In order to increase the accuracy of cut and production rate; and decrease the production time and accidents caused due to manual cutting of mirror or glass, this project aims at development of an automatic machine which uses a programmable logic controller (PLC) for controlling the movement of the conveyer and also to control the pneumatic circuit. In this machine, the work of the operator is to load and unload the mirror. The cutter used in this machine is carbide wheel with its cutting edge ground to a V-shaped profile. The PLC controls the pneumatic cylinder and intern actuates the cutter along the glass, a fracture layer is formed causing a mark to be formed below the fracture layer and a crack to be formed below the rib mark. The machine elements are designed using CATIA V5R20 and pneumatic circuit are designed using FESTO FLUID SIM software.

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RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT:

CENTRALIZATION AND MATCHING OF AN ELECTRONIC COMPONENTS AND SCHEMATICS USING ANDROID APPLICATION

PRINCIPAL INVIGILATOR: S.Rajesh Raja

CO-PRINCIPAL INVIGILATOR: Mr. M.Yuvaraj

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ABSTRACT

Our Project **('ELECTROMATICS')** which is an android application, is to provide a complete, full-fledged and centralized information of electronic components and providing a successful alternative for their characteristics. In addition to that of the objective we are focused on providing a complete and collective schematics of laptop motherboards. There is numerous application that are developed for providing an information of the components and finding a specific value. So, we are planned to develop the components information that are only published in the internet into a centralized specification. An information of finding some matching components are only come by experience of the circuit developer and obtaining those information by experimental test which would also be the part of the project. In this application, Electromatics focused on developing a certain spot collective information of MOSFET matching, Integrated Chips matching and Laptop board schematics.

KEYWORDS

- Laptop
- Mother Board
- Schematics
- MOSFET
- IC

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RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT:

GESTURE CONTROLLED CRANE USING ARDUINO MPU 6050

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ABSTRACT

In the context of further automation of manufacturing processes, automated transportation of heavy weights using cranes becomes more and more important. Applying the skills of robots to crane automation, a wide market of new applications could be developed. The crane hook represents the effectors of the robot. A load displacement system that have 5 Degrees OF Freedom(DOF) in a 3-Dimensional environment, which is controlled through Gestures of Hand and fingers Remotely for better Man-Machine interface, thereby improving the accuracy and control over the system. A wireless data glove was developed to control the crane remotely. This crane is a model for gesture controlled user interface (GCUI), and identifies trends in technology, application and usability. We present an integrated approach is real time detections, gesture based data which control vehicle movement and manipulation on gesture of the user using hand movements. A three-axis accelerometer is adaption. As the person moves their hand, the accelerometer also moves accordingly. The gesture is capture by accelerometer and processed by gesture. With each passing day the gap between machines and human are being reduced with the introduction of new technology. The future scope of advanced robotic arms that are designed like the human hand itself can easily controlled using hand gesture only. It is also having proposed utility in field of construction, medical science, hazardous waste disposal etc.

Keywords: Gesture, crane, lifting mechanism, signal transmission.

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DEPARTMENT OF MECHATRONICS

RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT: OIL SPILLING ROBOT

PRINCIPAL INVIGILATOR: Mr.Arunbabu.R

CO-PRINCIPAL INVIGILATOR: Mr.G.Satheesh

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ABSTRACT

The researchers and oil companies are trying to take some precaution for the problem of oil spill in sea, river or on ground etc. A lot of work concerned by removing the oil from water, there are many advanced tools used for this task. This project presents a boat system that works on the surface of water to help cleaning up marine oil spills using a skimmer as a collecting tool, the aim of this boat system is to surround the oil spill in certain position for fast and easy cleaning and prevent it from spreading wider. Concept of this project is to clean oil spills in seashore and marine. The boat is operated and controlled by laptop and oil spill is cleanup monitoring using wireless camera. For about Five km can enable the periphery. Rising oil dumped in the sea towards the remote mode, the tool does apparent. Oil spills are a very dangerous occurrence for marine ecosystem. It affects the marine life-forms' existence. It gets unnecessarily threaten. The boat can be controlled anywhere by the smart mobile. The pictures can be run by wireless camera. Five km can enable the periphery. We further use isolating device fitted to the tube, through which the oil can be carried. Through this mechanism 90 percent of the oil can be separated.

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DEPARTMENT OF MECHATRONICS

RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT:

OPTICAL VISUALIZING HELMET USING DLP

PRINCIPAL INVIGILATOR: M.Ramesh

CO-PRINCIPAL INVIGILATOR: Dr.D.R.P Rajarathnam

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ABSTRACT

OPTICAL VISUALIZING HELMETS are majorly planned to mitigate the navigational problems in roads to the motorcycle riders .In this paper we are presenting the technique of projecting the navigating map on the visor of an helmet of the rider with audio assistance. The prototype of this design is based on digital light projecting control through a mobile phone using Wi-Fi or Bluetooth module by a digital light projecting unit

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DEPARTMENT OF MECHATRONICS

RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT:

ROBOTICS AUTOMATION OF CLUTCH DIAPHRAGM PRESSURE TESTING SYSTEM

PRINCIPAL INVIGILATOR: Mr.S.Vinoth

CO-PRINCIPAL INVIGILATOR: Mr.S.Karthik

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ABSTRACT

AUBO series robot adopts the fully modular design and uses system towards developers. Users can develop their own robot control system based on the API of AUBO robot. Meanwhile, AUBO robot is equipped with its own programmable interface, which allows the user to observe robot's operating status in real time, carryout lots of robot control settings and perform offline simulation. This can improve the efficiency of practical application greatly. AUBO-i5, the second generation of smart lightweight 6 DOF modular collaborative robot, whose payload is 5kg, is one of AUBO series modular robots. Here we use this robot for clutch spring diaphragm pressure testing operation.

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DEPARTMENT OF MECHATRONICS

RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT:

SMART POLYHOUSE FARMING USING IOT ENVIRONMENT

PRINCIPAL INVIGILATOR: Mr.D.K.Karthikeyan

CO-PRINCIPAL INVIGILATOR: Mr.V.K.Gobinath

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ABSTRACT

A Polyhouse is a building where plants are grown. Polyhouses are often used for growing flowers, vegetables, fruits, and tobacco plant. Basic factors affecting plant growth are sunlight, water content in soil, temperature, etc. These physical factors are hard to control manually inside a Polyhouse and a need for automated design arises. Automatically controlling all the factors that affect plant growth is also a difficult task as it is expensive and some physical factors are inter-related, for example, temperature and humidity are related in a way when temperature raises humidity reduces therefore controlling both together is difficult. Because the temperature and humidity of Polyhouse must be constantly monitored to ensure optimal conditions, a wireless sensor network can be used to gather the data from point to point. A graphical user interface (GUI) is unified for the ease of operations by the farming community. System also allows transmission of process parameters, including emergency alarm signals via e-mail client server or alternatively sending a SMS on a mobile phone. A conventional chat has also been integrated with the GUI to add vibrancy to inter-user communication. This feature can be embedded in upcoming 3G mobile technology. Simulations and video tutorials can also be integrated in the web server for teaching the farming community. Such integrated approach greatly widens the socio-economic possibilities for farmers through interaction with modern technological resources.

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DEPARTMENT OF MECHATRONICS

RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT:

WEED DETECTION USING IMAGE PROCESSING

PRINCIPAL INVIGILATOR: Mr.M.Ramesh

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ABSTRACT

In this project, weeds are removed in a semi-structured cultivated field by using image processing. The main objective is to cut the weeds precisely which is present near to the cultivated plant and collect it separately. A static camera is mounted for taking the images of a segment of the field. Coordinates of the weeds present in that segment is detected by image processing using MATLAB. The coordinates of the weeds obtained from camera are communicated through PC to the robot finally for cutting the weeds.

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DEPARTMENT OF INFORMATION TECHNOLOGY

RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT

A SHOULDER SURFING GRAPHICAL AUTHENTICATION SYSTEM

PRINCIPAL INVIGILATOR: DR.K.SELVI

CO-PRINCIPAL INVIGILATOR: DR.S.LAVANYA

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A Shoulder Surf

ABSTRACT

Authentication based on passwords is used largely in applications for computer security and privacy. However, human actions such as choosing bad passwords and inputting passwords in an insecure way are regarded as "the weakest link" in the authentication chain. Rather than arbitrary alphanumeric strings, users tend to choose passwords either short or meaningful for easy memorization. With web applications and mobile apps piling up, people can access these applications anytime and anywhere with various devices. This evolution brings great convenience but also increases the probability of exposing passwords to shoulder surfing attacks. Attackers can observe directly or use external recording devices to collect users' credentials.

To overcome this problem, a novel authentication system PassMatrix, based on graphical passwords to resist shoulder surfing attacks is proposed. With a one-time valid login indicator and circulative horizontal and vertical bars covering the entire scope of pass-images, PassMatrix offers no hint for attackers to figure out or narrow down the password even they conduct multiple camera-based attacks. Along with pass-matrix we have implemented dynamic virtual keyboard. Virtual Keyboard authentication has helped users to protect their username and passwords from being captured by key loggers, spyware and malicious bots. We have designed a virtual keyboard that is generated dynamically each time the user access the web site. Also after each click event of the user the arrangement of the keys of the virtual keyboard are shuffled. Our proposed approach makes the usage of virtual keyboard even more secure for users and makes it tougher for malware programs to capture authentication details.

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RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT

A SHOULDER SURFING GRAPHICAL AUTHENTICATION SYSTEM

PRINCIPAL INVIGILATOR: DR.S.LAVANYA

CO-PRINCIPAL INVIGILATOR: DR.K.SELVI

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A Shoulder Surf.

ABSTRACT

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DEPARTMENT OF INFORMATION TECHNOLOGY

RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT

ENREAL: ENERGY AWARE RESOURCE ALLOCATION FOR SCIENTIFIC WORKFLOW IN CLOUD ENVIRONMENT

PRINCIPAL INVIGILATOR: MRS.M.PUSHPALATHA

CO-PRINCIPAL INVIGILATOR: MRS.K.VIDYA

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Scientific workflow

ABSTRACT

Scientific workflows are often deployed across multiple cloud computing platforms due to their largescale characteristic. This can be technically achieved by expanding a cloud platform. Since the cloud platform expansion will make the energy consumption a big concern. In this project first create a virtual machine. It is used allocated job to system. Then create a Brokers ID. Brokers are contain number of systems. It is used to send a job to free system. A system is busy means the brokers to shift the job to other system. If all the system busy means then the job can be transfer from one cloud data center to nearest data center. This step can be achieved by minimum migration and virtual machine selection policy. In our project if there is no job are available the virtual machine can be shutdown, it means the idle system can be going to shutdown automatically. Basically, we leverage the dynamic deployment of virtual machines for scientific workflow executions. Specifically, an energy consumption model is presented for applications deployed across cloud computing platforms, and a corresponding energy-aware resource allocation algorithm is proposed for virtual machine scheduling to accomplish scientific workflow executions. Experimental evaluation demonstrates that the proposed method is both effective and efficient.

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RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT

ENREAL: ENERGY AWARE RESOURCE ALLOCATION FOR SCIENTIFIC WORKFLOW IN CLOUD ENVIRONMENT

PRINCIPAL INVIGILATOR: MRS.K.VIDYA

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RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT

AN INNOVATIVE APPROACH FOR IMPROVING QUALITY OF SERVICE OVER CYBER PHYSICAL SOCIAL SYSTEM

PRINCIPAL INVIGILATOR: MR.R.JAYAVADIVEL

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ABSTRACT

In recent years, an extensive integration of cyber, physical and social spaces has been occurring. Cyber-Physical-Social Systems (CPSSs) have become the basic paradigm of evolution in the information industry, through which traditional computer science will evolve into cyber-physical-social computational science. Intelligent recommender systems, which are an important fundamental research topic in the CPSS field and one of the key techniques for the implementation of personalized and intelligent computing, have great significance in CPSS development.

Social Networking Service (SNS) is defined as the popular online platform which is useful to build social networks and social activities of people by sharing their real life connections, career interests, and background activities. SNSs have attained a progressive growth with extensive data in recommendation systems that increase the complexity levels. Cyber-Physical-Social Systems (CPSSs) have become the simple paradigm of evolution in the information industry, through which traditional computer science will develop into cyber-physical-social computational science. Through experiments, it is verified that the proposed recommender system is efficient, objective and accurate, thereby providing a strong foundation for personalized computing in the CPSS paradigm.

This project proposes a group-centric recommender system in the CPSS domain with activity oriented group discovery, the revision of rating data which are analyzed in terms of accuracy, precision analysis, recall analysis and level analysis has been improved.

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DEPARTMENT OF INFORMATION TECHNOLOGY

RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT

IMPROVING MEMORY EFFICIENCY ON THE DISTRIBUTED CLOUD SERVER

PRINCIPAL INVIGILATOR: MR.B.PRABUSHANKAR

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IMPROVE MEMORY

ABSTRACT

In this project, we proposed to distributed cloud server and all the User data are obtained by user portal by Distributed Cloud Server and Store the data as a DATASET format. Each there will synchronous updation of data to the Main Cloud Server. User can view and modify their details on the web browser. Infrequent data will be deleted automatically in the Distributed Cloud Server. But the backup will be in the Main Cloud Server and could be retrieved at any time. The server relies on locality conscious request distribution and a standard for user-level communication to achieve high performance and portability. We evaluate cluster by first isolating the performance benefits of three key features of user-level communication: low processor overhead, remote memory accesses. Next, we compare cluster to servers that involve less inter scluster communication, but are not as easily portable. Our results for an 8-node server cluster and five traces demonstrate that user-level communication can improve performance by as much as 52 percent compared to a kernel-level protocol. Low processor overhead, remote memory writes, and zero-copy all make nontrivial contributions toward this overall gain. Our results also show that portability in cluster causes no throughput degradation when we exploit user-level communication extensively.

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DEPARTMENT OF INFORMATION TECHNOLOGY

RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT

SECURITY USING COGNITIVE SERVICES

PRINCIPAL INVIGILATOR: MRS.S.SINDHUBALA

CO-PRINCIPAL INVIGILATOR: MR.B.VENKATESAN

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Security using ...

ABSTRACT

Security using cognitive service is a project that can identify people by using their faces. Each face will have an unique measurements in terms of the parts like nose, ears, eyes, eyebrows, cheeks, chin and etc. The pictures of all the authenticated users will be stored in the face list as JSON scripts. These scripts are generated by the face API. Now, the photos of users will be taken for the authentication purpose and then processed using face API to generate the JSON script. Finally, this script is matched with the available face values in the face list. Here each face value that is stored in the face list will have its own unique ID. Whenever the measurements are matched, the availability of that specific face ID is checked in the face list. If it is available, then the person is authorized one. If there is no match for that specific face ID, then the person is concluded as unauthorized and concerned action can be taken over him. This can also be taken to a next level by using an IoT device namely Raspberry Pi for reaching people in a crowd without disturbing them or making them to know what we are doing. Thus, we will make use of a drone to carry the Raspberry Pi device in the air. Index Terms Azure, Cognitive Service, Face API, IoT.

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RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT

SECURITY USING COGNITIVE SERVICES

PRINCIPAL INVIGILATOR: MR.B.VENKATESAN

CO-PRINCIPAL INVIGILATOR: MRS.S.SINDHUBALA

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ABSTRACT

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RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT

GEOGRAPHIC ROUTING FOR AZURE VIRTUAL MACHINES

PRINCIPAL INVIGILATOR: MRS.N.HEMALATHA

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Geographical

ABSTRACT

The websites that are hosted in any cloud servers are meant to be available to the users all the time. Even the downtime for a fraction of second will lead to the loss of quality of service of the site. To make the website available to the users at a rate of 24/7, we are making us of two different concepts namely Load Balancing and Traffic Managing. Also the website is hosted in virtual machines in different regions so that they will be available in different locations in different forms for different users. There will be no downtime for the website since it will be hosted in multiple virtual machines at different data centers. Server-*load balancing* provides scalability and high availability for applications, Web sites and cloud services by monitoring the health of servers, evenly distributing loads across servers and maintaining session persistence and a seamless user experience in the event that one or more servers become overburdened or unresponsive. *Load balancing* is a application delivery controllers (ADCs) represents application delivery controllers (ADCs) represent a considerable USES Delivers high availability and network performance to your applications. It is a layer S4(TCP UDP) load balancer that distributes incoming traffic among health instances of services.In a network consists of wireless mobile nodes, routing with geographical information is more efficient and scalable than methods that only rely on node connectivities. Geographical routing requires a distributed location dissemination or location database system to provide forwarding data.

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DEPARTMENT OF INFORMATION TECHNOLOGY

RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT

DATA DEDUPLICATION OF BIGDATA IN CLOUD

PRINCIPAL INVIGILATOR: MR.V.SARAVANABHAVAN

CO-PRINCIPAL INVIGILATOR: MR.S.SARAVANA KUMAR

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Abstract

Cloud computing offers a latest approach of service provision by re-arranging varied resources over the net. the foremost major and widespread cloud service is data storage. So on maintain the privacy of data holders, data area unit sometimes hold on cloud in associated degree encrypted kind. However, encrypted data introduces provocation for cloud data duplication that becomes crucial for big data storage and method in cloud. Ancient replicating schemes cannot work on encrypted information[1] They cannot exile support in- formation access management and repeal. that's why, not of them could also be immediately deployed in follow. throughout this paper, we tend to gravitate to place forward a topic to deduplicate encrypted data hold on in cloud supported freehold challenge and proxy re-encryption[6]. It integrates cloud data deduplication with access management. we tend to tend to evaluate its performance supported exhaustive analysis and laptop simulations. The results show the superior efficiency and effectiveness of the theme for potential sen-sible activity, notably for big data deduplication in cloud storage[2]. Keywords - Access Control, Big Data, Cloud Computing, Data Deduplication, Proxy Re-Encryption

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RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT

DATA DEDUPLICATION OF BIGDATA IN CLOUD

PRINCIPAL INVIGILATOR: MR.S.SARAVANA KUMAR

CO-PRINCIPAL INVIGILATOR: MR.V.SARAVANABHAVAN

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Abstract:

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DEPARTMENT OF INFORMATION TECHNOLOGY

RESEARCH PROJECT

ACADEMIC YEAR: 2017-2018

TITLE OF THE PROJECT

GRAPHICAL PASSWORD SECURITY FILE SYSTEM

PRINCIPAL INVIGILATOR: MRS.D.YOGAPRIYA

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Graphical password

ABSTRACT

In graphical file security system the authentication is done by image representation password. Data sharing is an important functionality in cloud storage and how to securely, efficiently and flexibly share data with others in cloud storage. The description of new public-key cryptosystems which produce constant-size cipher texts such that efficient delegation of decryption rights for any set of cipher texts are possible. The novelty is that one can aggregate any set of secret keys and make them as compact as a single key, but encompassing the power of all the keys being aggregated. In other words, the secret key holder can release a constant-size aggregate key for flexible choices of cipher text set in cloud storage, but the other encrypted files outside the set remain confidential. This compact aggregate key can be conveniently sent to others or be stored in a smart card with very limited secure storage. This project provide formal security analysis of our schemes in the standard model.This project describe other application of our schemes. In particular, our schemes give the first public-key patient-controlled encryption for flexible hierarchy has been developed.

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Academic Year 2016-2017

PAAVAI ENGINEERING COLLEGE,
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DEPARTMENT OF CIVIL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR; 2016-2017

TITLE OF THE PROJECT: ANALYSIS AND DESIGN OF RESIDENTIAL BUILDING

PRINCIPAL INVIGILATOR: S.GAYATHRI

CO-PRINCIPAL INVIGILATOR: R.SATHIYARAJ

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ABSTRACT

The main necessity of this project is to get knowledge and experience in the field of design using IS codes, soft wares and applying the design principles in practical way.

The main objective of this project is to analyze and design structural components like slabs, beams, columns and footing using IS codes and STAAD Pro software. The structure has been designed using limit state method of design confirming to IS: 456-2000. The plan was drawn in AutoCAD and the structural elements were analyzed by STAAD Pro and manual design was carried.

PAAVAI ENGINEERING COLLEGE,
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(AUTONOMOUS)

DEPARTMENT OF CIVIL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR; 2016-2017

TITLE OF THE PROJECT: INVESTIGATION ON THE PROPERTIES OF HIGH PERFORMANCE CONCRETE

PRINCIPAL INVIGILATOR: S.GAYATHRI

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ABSTRACT

The objective of this study is to evaluate the structural strength of high performance concrete by utilizing green and pozzolanic material as supplementary cementitious material and potential use of non-destructive testing devices for in-situ strength parameters of HPC during and after construction. This study primarily focuses on the development of empirical correlations for estimating the 28 compressive strength, flexural strength and split tensile strength for diverse range of water/binder ratio for binary concrete mixes. Detailed laboratory investigations are performed covering almost all available supplementary cementitious materials.

Manufacturing of high performance concrete, which is majorly used as building material in the major and huge infrastructure projects, is a daunting task. Though the recent advancements have conquered the hurdles of the preparation of high performance concrete, the use of green materials such as Fly Ash and Rice Husk Ash is limited. Apart from the green materials, many conventional and mineral admixtures or micro materials are available in the market, which enhances the quality and performance of concrete such as Metakaoline, Alccofine and Silica Fume etc.

The quality of concrete mix is assessed through various mechanical properties like compressive strength, flexural strength and split tensile strength and various durability tests like rapid chloride penetration test (RCPT), sorptivity test, chloride resistance test, accelerated corrosion test and sea water attack test are carried out to analyse the performance of HPC.

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DEPARTMENT OF CIVIL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR; 2016-2017

TITLE OF THE PROJECT: PLANNING, ANALYSIS AND DESIGN OF SCHOOL BUILDING

PRINCIPAL INVIGILATOR: A.KALAIVANI

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ABSTRACT

In India more than 40% of people are living in rural areas. More children from rural areas are in need of standard Nursery and high schools nearby their houses. Hence it is proposed to select a modern high school building as our project. The site selected for construction of our project is Kallar in Coimbatore District. It is proposed to construct two storeys with R.C.C roofing. Other amenities to be provided are classroom for L.K.G to 12^{th} standard, H.M room, staff room, library, audio/ video room, verandah, play ground. Class rooms are provided with sufficient door openings, windows and ventilators. Wide stairs are also provided at suitable places for easy exit of children in case of emergency. Necessary water supply and sanitary arrangements will be providing. By doing this project we would gain knowledge in various aspects of life.

- Design of Foundation.
- Design of R.C.C members by using limit state method.
- Computing quantities of various items if work.
- Estimate the unit cost of items and final cost of buildings.
- Preparation of building drawings and structural drawings.

The entire work is carried out as per **IS 456:2000**, norms followed for designing as per **National Institute of Opening School.** In order to ensure about green building environment the product used for plastering is Eco-render. Architectural works has been added for good elevation purpose. Design has been preceded based on **Limit State ofDesign** concept.

Plinth area of the building is about -2035.74m^2

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DEPARTMENT OF CIVIL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR; 2016-2017

TITLE OF THE PROJECT: EFFECT OF CURING TECHNIQUES ON MECHANICAL PROPERTIES OF SELF COMPACTING CONCRETE

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ABSTRACT

Self-compacting concrete (SCC) offers several benefits over the normal vibrated concrete (NVC), mainly the ease in placement and lack of vibration. It also proves to be efficient in densely arranged bars and in areas where it is more difficult to use vibrators.SCC is achieved by reducing the volume ratio of aggregate to cementitious materials, increasing the paste volume and using various viscosity enhancing admixtures and superplasticizers. It is observed that the behavimy of the design concrete mix is significantly affected by variation in humidity and temperature both in fresh and hardened state. Curing techniques and curing duration significantly affects "curing efficiency". Techniques used in concrete curing are mainly divided into two groups namely, Water adding techniques and Water- retraining techniques.

In the current study, the effect of few selected curing techniques on the mechanical properties of self compacting concrete (SCC) of grade M30 and M50 have been studied.In the first phase, various trials are performed with 0.01 m^3 of concrete with the use of locally available materials and checked the fresh property tests (Slump flow, J-ring flow, V-funnel, L-box and U-box) according to the standards of European Guidelines and finalized the mix proportion of M30 and M50 grade of SCC, considered as a reference SCC mix.In the second phase, the mechanical properties including compressive, tensile, flexural and shear strengths affected by various curing techniques such as, normal water immersion, hot water, ice, sea water and wet covering, will be checked.

ABSTRACT

In this project, planning, analysis, and structural design has been made for a residential building based on all relevant Indian Standard code of practice. Detail drawings pertaining to the structural design of residential building are presented.. All the structural members like slabs, beams, columns and footings are designed using Indian Standard Code IS 456-2000, and design aid SP-16.

The structural components are designed by limit state method. Materials were used as specified by National Building Code. Concrete M_{20} grade and Fe 415 steel bars were considered for all the design. Dog-legged staircase is used in this residential building. Footing is designed as isolated and the detailing drawings of reinforcement are enclosed in this report. All the dimensions are given in metric units.

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DEPARTMENT OF CIVIL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR; 2016-2017

TITLE OF THE PROJECT: ASSESSMENT OF EXISTING DISTRESS CONCRETE COLUMN FOR EFFECTIVE REPAIR AND RESTORATION TO ENHANCE ITS RESIDUAL LIFE

PRINCIPAL INVIGILATOR: P.KALIMUTHU

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ABSTRACT

The problem of cracking in building is a difficult puzzle for engineers nowadays. Cracking is an unavoidable response of any structure while designers are trying to eliminate many of the causes of cracking. We all want our building structurally safe but it is not so easy. Some faulty steps during construction and some unavoidable reasons, different type of cracks start to appear on various structural and non- structural parts of the building. So, timely identification of such cracks and adopting preventive measure are essential. The repair materials and repair technique are different depending upon forms of cracks according to their positions in structure. Some types of cracks seriously need attention as they are structurally hazardous. To assess the level of corrosion of embedded steel in concrete through the in-situ test on physical, chemical and electrolyte study and include the determination of mechanical properties of concrete can be carried out by Non-Destructive Test Method (NDT) such as Rebound hammer and Ultrasonic pulse velocity.

In this project, the problems that are being faced by engineers i.e. of cracking after construction, construction errors, deterioration of structures, structural safety and reliability aspects are discussed and a wide range of non-destructive testing methods have been reviewed with reference to potential, limitations, inspection techniques and interpretations. The factors that the success of Non-Destructive Test methods was explored and ways to mediate their influence were recommended.

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DEPARTMENT OF CIVIL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR; 2016-2017

TITLE OF THE PROJECT: EXPERIMENTAL INVESTIGATION ON RC BEAMS WITH GFRP WRAPPING

PRINCIPAL INVIGILATOR: P.KALIMUTHU

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ABSTRACT

Now-a-days repair, rehabilitation and strengthening of existing structures have become major part of the construction industry. Many of the older buildings are to be retrofitted to cater higher loads due to high load. A promising new retrofitting technology for concrete and masonry structures involves the use of externally bonded Fiber Reinforced Polymer (FRP) composites. Also the increased necessities for change activities use of building urge us to strengthen the existing structures to make them quality for additional loads. Existing reinforced concrete Beams may require strengthening for a variety of reasons.

In this investigation, an attempt has been made to study the effect of GFRP flexible wrapping on upgrading the load carrying capacity of concrete beams and to evaluate the performance enhancement of GFRP composites on beams.

This project presents the results of experimental studies about concrete beam confined with high-strength Glass Fiber Reinforced Polymer (GFRP) composites. Forty small scales of 9 numbers of beams were subjected to tensile load up to failure and stress-strain behaviors were recorded. The various parameter fiber orientations were considered. Different wrap fiber orientation of $0°$, $90°$, $\pm 45°$ and combinations of them were investigated. The results demonstrated significant enhancement in the compressive strength, and stiffness of the GFRP-wrapped concrete beams as been tested.

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DEPARTMENT OF CIVIL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT: DESIGN AND ANALYSIS OF COLD FORMED STEEL STRUCTURES

PRINCIPAL INVIGILATOR: P.KALIMUTHU

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ABSTRACT

Worldwide, a great deal of research is currently being conducted concerning the use of fiber reinforced plastic wraps, laminates and sheets in the repair and strengthening of reinforced concrete members. There have also been several advances made in the development of fiber reinforced concrete to control cracking and crack propagation in plain concrete, and to increase the overall ductility of the material. However, there are now many types of fibers with different materials and geometric properties, and the exact fracture behavior of fiber reinforced concrete materials is not clearly understood. Synthetic Fibers have played a dominant role for a long time in a variety of applications for their high specific strength and modulus. The overall aim of this project is to evaluate the performance of Polyester Fibers in the concrete and use the concrete with crack free.

The optimum percentage of Polyester Fiber in concrete will be found with respect to cube compressive strength at the age of 28 days. The cubes specimens will be casted for different percentages such as 0.05%, 0.10%, 0.15%, 0.20%, 0.25%, 0.30%, 0.35%, 0.40% and 0.45% by the mass of concrete. The optimum level of Polyester Fiber will be found. From this investigation, the Polyester Fibers can be effectively control cracking, increase the overall properties like compressive, flexural, tensile strength and quality of concrete. So, Polyester Fiber Reinforced Concrete has the potential for large scale use in concrete construction.

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DEPARTMENT OF CIVIL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR; 2016-2017

TITLE OF THE PROJECT: EXPERIMENTAL STUDY ON LIGHT WEIGHT CONCRETE BLOCKS

PRINCIPAL INVIGILATOR: T.S.KUMANAN

CO-PRINCIPAL INVIGILATOR: D.MUNUSAMY

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ABSTRACT

This Paper Presents in Phase – I Project with an experimental investigation which aims to assess the behavior of Light Weight Concrete Blocks subjected to axial compressive load. Two different types of blocks to be prepared using standard cement blocks and lightweight concrete blocks with specimen materials like Metakaloin, Expanded Clay and Recycled waste Glass.

The lightweight concrete block incorporating Fine Aggregate and Metakaloin, Expanded Clay and Recycled waste Glass.The second blocks using standard cement blocks. The vertical deformations will be measured at different positions on the wall specimens. Materials testing and mix design for both specimens are calculated Phase I,and The axial compressive load- bearing capacity will also be Calculate Phase – II Project..

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DEPARTMENT OF CIVIL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR; 2016-2017

TITLE OF THE PROJECT: DISMISSAL OF OXYGEN DEMAND AND MAINTAINING THEIR SPECIFICATIONS IN STALE WATER

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ABSTRACT

Waste water has been a major challenge today due to the contaminants from natural and manmade origins that are hazardous to human health. Among various treatments used waste water can be treated by the method of activated sludge process. The activated sludge process is one of the methods to clean the sewage water. Waste water characteristic can be divided into three major categories which are physical, chemical and biological . The primary objective of this study are to characterize the sewage waste water properties in terms of the BOD, COD, TSS affluence before and after the sample is being treated by the activated sludge process and to determining the effect of nutrients added in the process and the sewerage properties that involve.

There are four parameter experiments that has been done to determine the quality of the effluent which are biochemical oxygen demand (BOD), chemical oxygen demand(COD), total suspended solids(TSS) and the gases that produce. From the experiment, the reading of the BOD, COD and TSS are calculated. Based on the result, the waste water quality is compared according to the IS standards(10500-1991-Drinking water specifications).

The sewage waste water condition results after treated was filling up the standards which is fixed by and the result was based on nutrients level that are added in our activated sludge process. This shows the waste water can be treated by using the activated sludge process. After the treatment, the waste water can be irrigation purpose. Analyse and treat domestic sewage waste water and make them useful for irrigation and agricultural activities

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DEPARTMENT OF CIVIL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR; 2016-2017

TITLE OF THE PROJECT: PLANNING, ANALYSING AND DESIGN OF A RESIDENTIAL BUILDING

PRINCIPAL INVIGILATOR: B.KARTHIGA

CO-PRINCIPAL INVIGILATOR: J.RAJKUMAR

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ABSTRACT

SALEM is the one of the important city in our country. As it is rapidly developing the construction in the city is very costly and also the time consumption is high for the complete construction . Economic point of view if the building is constructed at a far distance from the city it will be cheaper and residents can live peaceful without any external polluted sources. Having a peaceful surroundings s the main point of view of most of the people in today's lifestyle.

The report to accompany the "DESIGN OF RESIDENTIAL BUILDING". This building is having ground floor area of 212m² and it is located at SALEM city . The structure is analyses by manually by using moment distribution method . The building is a framed structure with flat roof of 120mm thick. The building is consisting square R.C.C column of 230mm x 300mm size with square type footing.

The size of footing is 2000mm x 2000mm with 450 mm uniform thickness. Below the footing, a 100 mm thick P.C.C 1:5:10 is provided as base concrete. The total depth of foundation is 1800mm below ground level. The wall thickness is 230mm with Ist class bricks. The height of ceiling is 2.85m.

In this plan bed room, drawing room ,dining, kitchen, store room,toilets ,bath are provided. Necessary T-beams and L-beams are provided as per design, two-way slab is provided for a thickness of 120mm. The overall depth of beams is 230 and 500 mm as per the design.

The floor is finished with C.M 1:3mm thick over a base course of P.C.C 1:5:10, 20mm thick. Wooden doors and windows are provided with two coats of painting. Two coats of white washing are applied over one priming coat over the plastered surface of brick work.

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DEPARTMENT OF CIVIL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR; 2016-2017

TITLE OF THE PROJECT: PLANNING, ANALYSING AND DESIGN OF RESIDENTIAL BUILDING

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ABSTRACT

This project deals with the "Planning, analysis and design of Residential building with high ceiling" with special emphasis on slab column, footing and staircase.

Analysis is carried out using substitute frame analysis and preliminary analysis of beams is carried out using moment distribution method and then carried out by staad pro analysis

Concrete mix used for the RCC members is M_{25} and steel used is high yield strength deformed bars of grade fe415 limit state method is adopted for the design all structural members in the building. Safe bearing capacity of soil is taken as 200KN/m^2.footing is designed as isolated type plan and detailing of reinforcement are enclosed in this report.

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DEPARTMENT OF CIVIL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR; 2016-2017

TITLE OF THE PROJECT: EXPERIMENTAL STUDY OF IMPROVING SOIL CHARACTERISTICS

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ABSTRACT

An experimental investigation is carried out to study the effect of Dalmia Magnesite Waste and engineering properties of sandy soil and clay soil. The properties of stabilization soil such as compaction characteristics, unconfined compressive strength were evaluated and their variations with constant of Dalmia Magnesite Waste are evaluated. Various percentage of Dalmia Magnesite Waste (10%,20%,30%,40%,50%) have been used to examine the engineering behavior of sandy soil and clay soil.

It has been concluded that liquid limit and plastic limit of the soil is reduced by adding magnesite quarry waste. The standard proctor parameters are influenced i.e. the optimum moisture content decrease for (18%,16%,14%,12%,10%,8%) using soil with dalmia magnesite waste increase (10%,20%,30%,40%,50%) while the maximum dry density increases with increases in 40% of magnesite quarry waste. The unconfined compressive strength increases up to 40% of Dalmia Magnesite Waste.

Thus, it can be concluded that stabilization of soil using Dalmia Magnesite Waste is a good way of improving then engineering behavior of soil. Moreover it cost effective also as the cost of pavement is reduced flexible pavement.

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DEPARTMENT OF CIVIL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT: PLANNING DESIGNING AND ANALYSIS OF RESIDENTIAL BUILDING

PRINCIPAL INVIGILATOR: K.VIVEK

CO-PRINCIPAL INVIGILATOR: A.JAYAPAL

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ABSTRACT

This project deals with the "Planning, analysis and design of Residential building with high ceiling" with special emphasis on slab column, footing and staircase.

Analysis is carried out using substitute frame analysis and preliminary analysis of beams is carried out using moment distribution method and then carried out by staad pro analysis

Concrete mix used for the RCC members is M_{25} and steel used is high yield strength deformed bars of grade fe415 limit state method is adopted for the design all structural members in the building. Safe bearing capacity of soil is taken as 200KN/m^2.footing is designed as isolated type plan and detailing of reinforcement are enclosed in this report.

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DEPARTMENT OF CIVIL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR; 2016-2017

TITLE OF THE PROJECT: EXPERIMENTAL INVESTIGATION ON MECHANICAL PERFORMANCE OF HYBRID FIBRE REINFORCED CONCRETE USING STEEL AND NYLON FIBRES

PRINCIPAL INVIGILATOR: K.VIVEK

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ABSTRACT

This project investigated the mechanical properties of Steel and Nylon hybrid fibre reinforced concrete. The addition of small closely spaced and uniformly dispersed fibres to concrete would act as crack arrester and would substantially improve its static and dynamic properties. This type of concrete is known as fibre Reinforced concrete. The addition more than one fibre in concrete is known as Hybrid Fibre Reinforced Concrete. Fibres have been used to reinforce materials that are weaker in tension than in compression. Steel fibre and Nylon fibre are used as Hybrid fibres. They are used in four different proportions as 0%, 0.5%, 1%, 1.5% and 2% by weight of cement in this study and hybrid fibres consisting of Steel fibre (75%) and Nylon fibre (25%). Compressive strength tests for both cube and cylinder, Split tensile strength test, Flexural strength test will be carried out to study the properties of hardened concrete.

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DEPARTMENT OF CIVIL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR; 2016-2017

TITLE OF THE PROJECT: MECHANICAL PERFORMANCE OF HYBRID FIBRE REINFORCED CONCRETE USING STEEL AND NYLON FIBRES

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ABSTRACT

This project investigated the mechanical properties of Steel and Nylon hybrid fibre reinforced concrete. The addition of small closely spaced and uniformly dispersed fibres to concrete would act as crack arrester and would substantially improve its static and dynamic properties. This type of concrete is known as fibre Reinforced concrete. The addition more than one fibre in concrete is known as Hybrid Fibre Reinforced Concrete. Fibres have been used to reinforce materials that are weaker in tension than in compression. Steel fibre and Nylon fibre are used as Hybrid fibres. They are used in four different proportions as 0%, 0.5%, 1%, 1.5% and 2% by weight of cement in this study and hybrid fibres (0.5%, 1%, 1.5% and 2%) consisting of Steel fibre (75%) and Nylon fibre (25%). Experiments were conducted to study the effect of steel fibre and Nylon fibre in different proportions in hardened concrete. Compressive strength tests for both cube and cylinder, Split tensile strength test, Flexural strength test were carried out to study the properties of hardened concrete.

PAAVAI ENGINEERING COLLEGE,

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DEPARTMENT OF CIVIL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR; 2016-2017

TITLE OF THE PROJECT: EXPERIMENTAL INVESTIGATION ON PROPERTIES OF CONCRETE MADE WITH RECYCLED AGGREGATE

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ABSTRACT

Four series of mixes with 0, 25%, 50% and 100% replacement of NA with RA were prepared to study the strength of concrete. In each series FA and GGBFS were used as partial replacements of cement at levels ranging between 40 to 60% by the weight of cement for FA and 20 to 50% for GGBFS were used. The effect of above said replacements on various properties of concrete such as compressive strength, tensile strength, chloride penetration and capillary suction were investigated. These results were compared to the same properties of a control concrete mixture and an acceptable percentage of replacements of NA and cement were obtained. MLR model was established to predict the strength of various replacements of NA and cement. Twelve beams of size 125 mm x 250 mm x 2100 mm were cast to study the structural performance of reinforced concrete beams with various percentage replacements of NA with RA and concrete with acceptable replacement percentage of NA and cement (50% RA, 50% FA and 40% GGBFS) under static loading. Six mixes were prepared for casting twelve beams, in which fumy mixes were prepared with 0, 25, 50, 100% RA and fifth and sixth mix with 50% RA & 50% FA and 50% RA & 40% GGBFS. Performance characteristics such as load carrying capacity, axial deformation, and moment curvature were studied in detail. Test results show that concrete containing optimal amount of recycled aggregate and mineral admixture resulted in a good structural concrete in strength and durability aspects. From the results it is inferred that recycled aggregates and mineral admixtures can be xvi effectively used in the concrete production. It was concluded that the concrete developed in this study have significant potential for use on real time projects.

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DEPARTMENT OF CIVIL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR; 2016-2017

TITLE OF THE PROJECT: STUDY OF HEALTH MONITORING OF STEEL REINFORCED BEAM USING TRANSDUCERS

PRINCIPAL INVIGILATOR: J.DORAIKKANNAN

CO-PRINCIPAL INVIGILATOR: B.THIYAGARAJAN

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ABSTRACT

There is a phenomenal rise in construction activities in the field of civil engineering in the recent years. Major structures like buildings, bridges, dams are subjected to severe loading and their performance is likely to change with time. It is, therefore, necessary to check the performance of a structure through continuous monitoring. The life of a structure depends on initial strength and the post construction maintenance. It is for this reason that the necessity of structural health monitoring (SHM) is emphasized worldwide. There are different types of sensors which can be used for SHM. In general, the performances of PZT sensor are better than other sensors and are also very cost effective. In this study, PZT patches have been used as sensors for both global and local level damages. In addition, the possibility of an embedded PZT sensor has been investigated. The PZT sensor is embedded in structure at the time of construction. It is successfully demonstrated that the embedded patch acts as sensors for both the global dynamic technique and the EMI technique. Detection of incipient damage is quite critical for the challenging task for health monitoring of structures. In this study, through artificial damage created in the structures, it is found that the incipient level damage is very quickly detected by the EMI technique. For moderate to severe damages, the same PZT is capable of serving as the sensor of the global dynamic technique, and can suitably quantify such damages as well as locate them. Hence, PZT patches, which have so far been used largely with EMI technique, have been found suitable for global techniques in this study. A simple low cost experimental technique has been developed to extract the experimental strain mode shapes of the structures. Experimental mode shapes extracted using the proposed technique require less interpolation and are obtained using a single PZT sensor. Resolution of measurement can be adjusted as per desired accuracy. The technique uses a surface bonded or embedded PZT sensor to extract the experimental strain mode shape directly. Damage ranging from incipient to near failure (severe) can be located and quantified using the EMI technique and the experimental mode shapes with desired accuracy. Basic advantage of the combined technique is that location of damage can determined out with desired accuracy.

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DEPARTMENT OF CIVIL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR; 2016-2017

TITLE OF THE PROJECT: DESIGN AND ANALYSIS OF COLD FORMED STEEL STRUCTURES BY ANSYS

PRINCIPAL INVIGILATOR: S.SHARMILADEVI

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ABSTRACT

Cold-formed steel structures are steel structural products that are made by bending flat sheets of steel at ambient temperature into shapes which will support more than the flat sheets themselves. They have been produced for more than a century since the first flat sheets of steel were produced by the steel mills. However, in recent years, higher strength materials and a wider range of structural applications have caused a significant growth in cold-formed steel relative to the traditional heavier hot-rolled steel structural members.

A brief comparison of the Direct Strength Method with the Effective Width Method is provided. The advantage of methods that integrate computational stability analysis into the design process, such as the Direct Strength Method, is highlighted. The development of the Direct Strength Method for beams and columns, including the reliability of the method is provided. Current and ongoing research to extend the Direct Strength Method is reviewed and complete references provided. The Direct Strength Method was formally adopted in North American cold-formed steel design specifications in 2004 as an alternative to the traditional Effective Width Method.

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DEPARTMENT OF CIVIL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR; 2016-2017

TITLE OF THE PROJECT: PLANNING, ANALYSING AND DESIGN OF I SHAPED COLLEGE BUILDING

PRINCIPAL INVIGILATOR: S.SUBATHRA

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ABSTRACT

This project report describes about the Analysis and designing of I – shaped civil engineering class and lab block. This is proposed in K. Singarakottai, and The direction of the building is West. The total area of the block is 2344 m^2. building consist of (G+2) floor. It is designed as a framed structure for vertical loads as per IS 875-1985 part II. The structural elements slab, beams, columns and footings are designed by limit state method using codal provisions IS 456-2000, SP-16. Software used in the project is AUTOCAD and STAAD Pro is used for Analysis.

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT: MAN IN THE MIDDLE ATTACK DETECTION IN SMARTPHONE USING 4G NETWORK THROUGH NOTIFICATION SOUND

. . .

PRINCIPAL INVIGILATOR: A.SUPHA LAKSHMI

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ABSTRACT

The body sensor network (BSN) technology is one of the most imperative technologies used in IoT-based modern healthcare system. It is basically a collection of low-power and lightweight wireless sensor nodes that are used to monitor the human body functions and surrounding environment. Since BSN nodes are used to collect sensitive (life critical) information and may operate in hostile environments, accordingly, they require strict security mechanisms to prevent malicious interaction with the system. The healthcare remote monitoring systems have become a key contributor to the improvement of the elderly people quality of life. The market sector of healthcare remote monitoring systems has increased significantly due to several reasons. The number of elderly people is increasing over the time where today in developed countries it is quite normal that elderly people usually live independently in their own homes.

Due to the penetration of smart mobile technology, it is also expected that population is already prepared to accept this kind of solutions collecting in real time people's private and sensitive data such as temperature, blood glucose, heartbeat, pulse sensor to name a few. Several healthcare remote monitoring systems using different technology for monitoring and/or tracking patient biomedical equipment within Hospitals and at their homes. Unfortunately, as far as It know, most of these solutions are not flexible at the moment of adding new sensors during runtime. Neither it allows normal users to create ad-hoc alerts immediately with the new sensors added. which allows during runtime adding new sensors that become immediately available in order users may create/edit alerts' rules using also these new data.

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT: DETECT AND PREVENT IDENTITY DECEPTION ON SOCIAL MEDIA USING COMMON CONTRIBUTION NETWORK DATA

PRINCIPAL INVIGILATOR: V.MAHESH KUMAR

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ABSTRACT

Mobile devices are increasingly being used to access the web. Functionality and layout have regularly been used to perform static analysis to determine maliciousness in the desktop space. Features such as the frequency of iframes and the number of redirections has traditionally served as strong indicators of malicious intent. Design and implementation of Kayo, a mechanism that distinguishes between malicious and accessible mobile web pages. It Reports a number of web pages missed by Google Safe Browsing and Virus Total. Creating a browser extension using Kayo is to protect users from malicious mobile websites in real-time and creates a separate login for each user in the browser extension.

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT: Secure Data Transmission In Wireless Bodyarea Network

PRINCIPAL INVIGILATOR: N.R.Vikram

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ABSTRACT

The pervasiveness of smart phones and advance wireless Body Sensor Networks (BSNs), mobile Healthcare (m-Healthcare), is used to extend the operation of Healthcare provider into a pervasive environment for better health monitoring, has attracted considerable interest recently. Health Care is very important factor in life, may be due to unexpected changes in health may causes some health problem in our daily life like sudden heart attack or occurrence of accidents, due to sudden occurrence of problem in health it may leads to serious conditions. To reduce this problem going to present a mobile itself a plenty of applications as repository, on adding the new health care application in mobile, it provides the user knowledge of disaster management of health problems. The system further integrates with GPS, Google Search and Google Map functionalities to facilitate the user to find all hospitals near to his/her current location including address, phone number, directions to the selected hospital and street view of the selected hospital.

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT: AIRPORT BAGGAGE TRACKING SYSTEM

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ABSTRACT

The modern society is evolving to Internet of Things based hyper-connected society which is possible to control and manage diverse resources in real time. In the current society, Radio Frequency Identification tags are used for controlling luggage effectively at domestic and foreign airports. This system preferred the use of Wi-Fi. But it was able to provide positive result only up to 61.3%. Our proposed system is an IoT based system which is possible to trace passenger's baggage in real time for greater efficiency. In this system IoT board is kept in passenger's baggage. The IoT board is connected to PIC controller (PIC 16F87XA) LCD, Infrared sensor (IR sensor), IoT and power supply. The PIC controller can control the LCD, IR sensor and IoT. The system needs 12V of power supply for its working. The IR sensor measures the IR light that is transmitted in the environment to find the objects by an IR LED and in our proposed system it can sense the presence of baggage. The information from the IR sensor will be sent to the PIC controller and this information will be displayed in the LCD display. The user can get the information from the website which is created for this project. The link opens a page called data log. The data log can give us information about the location of our baggage. This proposed system is expected to improve the efficiency up to 70%.

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT: Compressed Fingerprint And Camera Identification In Random Projection Using K-Means Algorithm

PRINCIPAL INVIGILATOR: R.Dhivya

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ABSTRACT

Fingerprint recognition is one of the most popular and accuracy based Biometric technologies. Nowadays, it is used in many real applications. However, compressin and recognizing fingerprints in poor quality images is still a very complex problem. In recent years, many algorithms, model are given to improve the accuracy of the recognition system. In the system, an algorithm for compressing hyperspectral space images based on ZigZag 2D-DCT (Discrete Cosine Transform) technique is proposed. This method converts 2D gray-scale images into a 2 dimensional cube formation of 8*8 pixels and is operated with DCT. Thereafter the quantization and zig-zag scanning processes are implemented. In the system, after pre-processing step, find the transformation between templates, adjust parameters, synthesize fingerprint, and reduce noises based finger print compressin and recognizion system. The existing system is by the user has been maintaining their system manually is a tedious job. All the process must be done manually. The users are interested to speed up the Operations and they are performed automatically.

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT: Location Based Ads In Network

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ABSTRACT

Location-Based Service becomes increasingly popular with the dramatic growth of smart phones and social networks service. Many locations based services providers use user's location information to offer them convenience and useful functions. Location-Based application utilizes the positioning capabilities of a mobile devices to determine the current location of a user. The effects of interactive advertising approach (customization, permission, intrusiveness) and sales promotion on Location-Based Advertising (LBA) toward consumer behavioural intention after receiving LBA. Location-Based Advertising (LBA) toward consumer behavioural intention after receiving LBA. This study uses scenario-based online survey which manipulated the timing, location, message content, and the flow of communication through the process of customization and permission.

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RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT: Detecting And Removing Malicious In Mobile Using Kayo's

PRINCIPAL INVIGILATOR: S.Sivaraman

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ABSTRACT

Mobile devices are increasingly being used to access the web. Functionality and layout have regularly been used to perform static analysis to determine maliciousness in the desktop space. Features such as the frequency of iframes and the number of redirections has traditionally served as strong indicators of malicious intent. Design and implementation of Kayo, a mechanism that distinguishes between malicious and accessible mobile web pages. It Reports a number of web pages missed by Google Safe Browsing and Virus Total. Creating a browser extension using Kayo is to protect users from malicious mobile websites in real-time and creates a separate login for each user in the browser extension.

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT: FINGERPRINT IDENTIFICATION AND DETECTION FROM DATASET IN IMAGE PROCESSING

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ABSTRACT

Creating an over complete dictionary from a set of fingerprint patches is used to represent them as a sparse linear combination of dictionary atoms. The first step is to construct a dictionary for predefined fingerprint image patches. The experiments also show that the algorithm Reconfiguration fingerprint matching algorithm is robust to obtain minutiae. In the authentication, the system requires two query fingerprints from the same two fingers which are used in the enrollment. A two-stage fingerprint matching process is proposed for matching the two query fingerprint against a combined minutiae template. Fingerprint based on authentication purpose. It is based on static approach does not perform equally over different fingerprint sensors and spoofing materials. To obtain in these feature from a single fingerprint image to overcome the issues faced in dynamic software approaches which require user. The technique is more efficient compared with several competing compression techniques (JPEG, JPEG 2000 and WSQ), especially at high compression ratios.

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT: POETRY VISUALIZATION

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ABSTRACT

Poetry is a form of literature that uses artistic and rhythmic qualities of language to evoke meanings in addition to, or in the place of, the simple apparent meaning. Poetry uses forms and conventions to suggest differential interpretation to words, or to suggest emotive responses. Its features like nature, theme and visualize a poem as a flower. The features of a poem are used to generate a flower for visual representation. Here a mapping between the features of a poem to the type and color of a flower. The visualization of poem using twelve type of theme and seven types of nature. Both nature and theme used to find the related poems and its unique flower representation. It tested over four hundred poems from Purananuru. Also visualizing those poems using Word Cloud Visualization to show weighted words of the poems visually.

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RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT: TRAFFIC DECORRELATION TECHNIQUES FOR COUNTERING A GLOBAL EAVESDROPPER IN WSNS

PRINCIPAL INVIGILATOR: P.RENUKADEVI

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ABSTRACT

Indian visitors are nonlane primarily based and chaotic. It needs a visitors manage solutions, which can be one-of-a-kind from the evolved Countries. Intelligent management of visitor's flows can reduce the poor effect of congestion. In recent years, wi-fi networks are extensively utilized in the road shipping as they offer extra cost powerful options. Technologies like ZigBee, RFID and IOT can be utilized in traffic control to provide price effective answers. RFID is a Wi-Fi era that makes use of radio frequency electromagnetic electricity to hold facts among the RFID tag and RFID reader. A IOT modem is a specialized kind of modem, which accepts a SIM card and operates over a subscription to a cell operator, just like a cellular smart phone. AT commands are used to govern modems. We proposed an Implementing Intelligent Traffic Control for Congestion, Ambulance clearance, and Stolen Vehicle Detection. This gadget became applied primarily based on present criteria that monitoring 3 conditions in the ones one is heavy visitors control and another one is creating a root of emergency car like ambulance and VIP car. We are going to enforce a sensor network paintings which is used to discover the traffic density and additionally use RFID reader and tags. It counts variety of cars that passes on a selected route at some point of a specified period. If the RFID tag study belongs to the stolen motors. These data are send to the control station through Zigbee transmitter and receiver.

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT: INTERNET OF THINGS USING IN MEDICAL FIELD

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RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT: CLUSTERED ROUTING FOR WSN USING ENERGY EFFICIENTLY

PRINCIPAL INVIGILATOR: R.MADHANA CHITRAN

CO-PRINCIPAL INVIGILATOR: D.YOGAPRIYA

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ABSTRACT

Wireless energy transfer based on magnetic resonant coupling is a developing technology. Charging one node at a time cause serious scalability problem. Recent advances in magnetic resonant coupling show that multiple nodes can be charged at the same time. Wireless sensor network will be created and investigate whether it is a scalable technology or not. Create one Wireless Charging Vehicle (WCV) and that will periodically travelling inside a WSN and charging sensor nodes wirelessly. It communicates inside a WSN and charging sensor nodes wirelessly based on charging range of the WCV. When network will loss energy level then the base node sends the collection of energy through the particular WCV node. It's based on range of the WCV. A wireless charging vehicle (WCV) visit each sensor node in the network and charge it periodically, user can ensure that each sensor node never runs out of energy. That is, as the node density increases in a WSN, a WCV ensure that each node is charged in a timely manner before it runs out of energy. Packet Scheduling Algorithm (PSA) algorithm is used in this work for solving this problem of scalability and it will reduce the packet congestion in WSN. Overall performance improved using Clustering and it has some influence to reduce the wasted energy consumption for increasing network life time in run time of the process.

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT: IMAGE ENCRYPTION USING KEYLESS METHOD

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ABSTRACT

Maintaining the secrecy and confidentiality of images is a vibrant area of research, with two different approaches being followed, The first being encrypting the images through encryption algorithms using keys; The other approach involves dividing the image into random shares to maintain the images secrecy. The heavy computation cost and key management limit the employment of the first approach and the poor quality of the recovered image from the random shares limit the applications of the second approach. It propose a novel approach without the use of encryption keys. The approach employs Sieving, Division and Shuffling to generate random shares such that with minimal computation, The original secret image can be recovered from the random shares without any loss of image quality.

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RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT: ALLOCATION OF OVERLAY ROUTING IN NETWORKING

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ABSTRACT

Reliable data congestion analytics in crowd sourced e-Health networks omes more important, especially in big data era, because of wide adaption of quitous crowd sourced healthcare involvers. Since a crowd sourced e-Health work has intermittent connectivity to its remote healthcare provider. Data gestion can be occur, researchers usually use some well-studied networks to del the novel network, but data congestion analytics is still a big problem in st intermittent connecting networks. In most cases, data congestion analytics y be realized by fixing the number of forwarded copies, but sometimes, it not suit for changing network environments. This problem could be solved by difying packet forwarding conditions dynamically through detecting real-time work environment. Based on this idea, an optimized routing algorithm named SW (Reduced variable neighborhood search-based Spray and Wait) introduced. the algorithm, nodes will exchange and store each other's buffer status during eir communication, based on which, current network environments will be aluated and quantified as a real-time threshold. Then, spray and wait adapts the reshold for data congestion control. Simulation shows that the proposed gorithm increases data packet delivery probability, and optimize the overhead tio dramatically, which can be up to ten times lower than that of RSW algorithm.

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RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT: COLLEGE DASHBOARD

PRINCIPAL INVIGILATOR: DR.S.VIJAYA RAGAVAN

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ABSTRACT

Student Management System is a web based system developed for a college maintaining information associated to daily activities within the college. This system is utilized to keep details of various department in the college, different course offered by the college, student details, staff details, day to day attendance details, exam mark details, laboratory infrastructure details and all details to convert the pdf file. While building those information, the software system creating a report that are helpful for office staff, staff's, Principal, Student's, and for management within the administration using the details, the reports are created and send to the parents about the student progress and status.

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT: GREEN HOUSE AUTOMATION

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ABSTRACT

A proposal for home control using voice via Google Assistant. There are home automation technologies introduced over these years from ZigBee automation, Amazon Echo, Google home etc., It describes the implementation of such a system. The system is implemented using ordinary household appliances Natural language voice commands are given to the Google Assistant and with the help of IFTTT (If This Then That) application and the Adafruit the commands are decoded and then sent to the microcontroller, the microcontroller in turn controls the relays connected to it as required, turning the device connected to the respective relay On or OFF as per the users request to the Google Assistant. The microcontroller used is NodeMCU (ESP8266) and the communication between the microcontroller and the application is established via Wi-Fi (Internet).

PAAVAI ENGINEERING COLLEGE,
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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT:Secure Reversible Image Datahiding Over Encrypted Domain Using Key Modulation

PRINCIPAL INVIGILATOR: M.Sivaganesh

PI/CoPI

HoD

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ABSTRACT

Brain tumour extraction and its analysis are challenging tasks in medical image processing because brain image is complicated. Brain tumour is an intracranial solid neoplasm. The main task of the doctors is to detect the tumour which is a time consuming and tiresome process. The only optimal solution for this problem is the use of "Image Segmentation". MRI is selected for the detection of braintumors, as they are used in the determination of soft tissue. In the way MRI (Magnetic Resonance Imaging) has become a useful method diagnostic tool for the diagnostic of brain & other medical images. The existing method derives high quality classifiers for the various tissue classes from sparse and unique annotation. The MRI brain images are collected from MIDAS dataset. The experimental results of the proposed technique were evaluated and validated for the performance based on accuracy, sensitivity, specificity and cube similarity index coefficient. The experimental results achieved an accuracy of 88.24%, a specificity of 81.58% and a sensitivity of 96.59% using watershed segmentation with k-means clustering and genetic algorithm has a higher accuracy when compared with the existing methods.

PAAVAI ENGINEERING COLLEGE,
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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT: CLOUD BASED PATIENT DATA ACCESS THROUGH MOBILE

PRINCIPAL INVIGILATOR: M.REVATHI

CO-PRINCIPAL INVIGILATOR: M.SATHYA SUNDARAM

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ABSTRACT

In cloud storage services, deduplication technology is commonly used to reduce the space and bandwidth requirements of services by eliminating redundant data and storing only a single copy of them. Deduplication is most effective when multiple users outsource the same data to the cloud storage, but it raises issues relating to security and ownership. Traditional deduplication schemes cannot work on encrypted data. The static deduplication decision tree is constructed based on the random elements from the client, which does not allow the tree to update. The Regression maximum likelihood estimation (MLE2) scheme is not efficient in the deduplication process because of the comparison of the randomized tag. To investigate the efficiency of different machine learning techniques for scaling out dynamic distributed data for the execution of deduplication algorithms under predefined time restrictions. The efficiency analysis results demonstrate that the proposed scheme is almost as efficient as the previous schemes, while the additional computational overhead is negligible. The deduplication schema based on data ownership challenge and proxy re-encryption to manage the encrypted data backup with deduplication. The results evaluated other machine learning algorithms and used specific workloads in the data Quality of Service (QoS) context.

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT:ATTENDANCE MANAGEMENT SYSTEM WITH SMS AND EMAIL ALERT

PRINCIPAL INVIGILATOR: M.REVATHI

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ABSTRACT

The purpose of the project entitled as "HOSPITAL MANAGEMENT SYSTEM" is to computerize the Front Office Management of a Hospital to develop software which is user friendly simple, fast, and cost – effective. It deals with the collection of patient's information, diagnosis details, etc. Traditionally, it was done manually. The main function of the system is to register and store patient details, doctor details and to retrieve these details as and when required, and also to manipulate these details meaningfully System input contains patient details, diagnosis details, while system output is to get these details on to the screen. The Hospital Management System can be entered using a username and password. It is accessible either by an administrator or receptionist. Only they can add data into the database. The data can be retrieved easily. The data are well protected for personal use and makes the data processing very fast.

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT: ACTIVE JAMMING AWARE TRAFFIC ALLOCATION AND JAMMING ATTACK DETECTION

PRINCIPAL INVIGILATOR: P.SANTHIYA

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ABSTRACT

Now a day's cars are the major transport which is easily used by all range of people, more than 50% of the world's population uses car as comfort transport and an item of luxury with modern technology which makes the user comfortable than the other transport , Still this advanced technology are not useful in preventing human's life.Car accidents have been increased exponentially due to missconcentration of drivers.

A detailed analysis given by Government of India (2016) shows that a life is lost every 4 seconds due to road accidents.To develop a standalone product to monitor the driver completely. To provide a holistic approach by providing real-time monitoring system to check if the driver is drowsy, drunk, if his attention span is less or if he is texting and driving.

Assistance mainly in the form of intelligent vehicle systems are provided due to the advancement of computing technology. Driver fatigue, drunk drivers, and texting while driving are significant factors in a large number of vehicle accidents. To prevent a huge number of sleep induced road accidents., driver drowsiness detection has been considered a major potential area. Detecting the drowsiness of the driver is one of the surest ways of measuring the driver's fatigue.

The purpose of such a system is to perform detection of driver fatigue. This system constantly monitors the driver whether he/she is drowsy, by placing the camera in the dashboard, which monitor the face of the driver and look for the eye-movements which indicate that the driver is no longer in a condition to drive. Once the driver is found to be drowsy, the systemwill first alert the driver by sending the appropriate text message, further it can alert them by an alarm or spraying water.

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT: IMPLEMNTING INTELLIGENT TRAFFIC CONTROL FOR CONJECTION CONTROL AMBULANCE CONTROL AND STOLEN VEHICLE REDUCTION

PRINCIPAL INVIGILATOR: S.SIVARAMAN

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ABSTRACT

An adaptively secure broadcast encryption scheme with short ciphertexts, where the size of broadcast encryption message is fixed regardless of the size of the broadcast group is constructed,here the members can join and leave the group without requiring any change to public parameters of the system or private keys of existing members.This construction has a two fold improvement over previously known best broadcast encryption schemes.This is the first public-key broadcast encryption systems that simultaneously achieve adaptive security against arbitrary number of colluders, have small system parameters, and have security proofs that do not rely on knowledge assumptions. This scheme immediately yields adaptive security without any increase in the size of ciphertexts or use of a random oracle. Secondly, the proof of security in the proposed scheme is defined in a stronger security model closely simulating an adversary in real world.In this security model, the adversary can selectively query private keys of the group members after the setup and can receive decryption of broadcast encryption messages at any given time.

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT: VEHICLE RASH DRIVE CONTROL SYSTEM

PRINCIPAL INVIGILATOR: S.ARULEESWARI

CO-PRINCIPAL INVIGILATOR: J. NASHREEN BEGUM

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ABSTRACT

Water is the most important resource for plants. But during summers, most people are too lazy to water the plants every day. To overcome this issue smart irrigation system using arduino and android is used. The existing system uses pc and cloud computing to store the data which is read by sensors and the drip is controlled. The proposed system is to ON/OFF the drip using bluetooth wherever we go. This system reduces usage of data storage devices. The Microcontroller Arduino is used to control this System and Android is connected to controller and it controls the drip. The sensors are to take values from surroundings and store it in a controller. According to this value the drip can be ON/OFF. It is controlled manually and usage of storage device is reduced and no network problem will occur.

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT: Crack Detection In Railway Track Using Zigbee

PRINCIPAL INVIGILATOR: J.Karthick

CO-PRINCIPAL INVIGILATOR: R.Kavimathi

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ABSTRACT

Cloud computing has been envisioned as the next-generation architecture of IT enterprise. In contrast to traditional solutions, where the IT services are under proper physical, logical and personnel controls, cloud computing moves the application software and databases to the large data centers, where the management of the data and services may not be fully trustworthy. This unique attribute, however, poses many new security challenges which have not been well understood. In this article, we focus on cloud data storage security, which has always been an important aspect of quality of service. To ensure the correctness of users' data in the cloud, propose an effective and flexible distributed scheme with two salient features, opposing to its predecessors. By utilizing the homomorphic token with distributed verification of erasure-coded data, our scheme achieves the integration of storage correctness insurance and data error localization, i.e., the identification of misbehaving server (s). Unlike most prior works, the new scheme further supports secure and efficient dynamic operations on data blocks, including: data update, delete and append. Extensive security and performance analysis shows that the proposed scheme is highly efficient and resilient against Byzantine failure, malicious data modification attack, and even server colluding attacks.

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT: LPG LEAK DETECTION AND CONTROL USING IOT

PRINCIPAL INVIGILATOR: DR.A.SUPHALAKSHIMI

CO-PRINCIPAL INVIGILATOR: DR.M. I. THARIQHUSSAN

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ABSTRACT

The solar panel automation and analytics system introduces the idea of automatically controlling the solar panel and analyze the working of the same by using the Internet of Things Technology. Most of the solar power plants are of less efficient because improper design of the solar panel. Static solar panels are less efficient where as automated solar panels are better efficient than static. Hence designing a automated power plant system can helps to reduce the demand in electricity in india. The proposed system introduces an idea of automatically controlling the solar panel analyzing the working of the same using Internet of Things technology. The analyzing part consists of real time monitoring the working of the solar panel system where it helps to reduces the demand of electricity in future.

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RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT: Geographic And Opportunistic Routing Through Underwater Sensor

PRINCIPAL INVIGILATOR: P.Sathish Kumar

CO-PRINCIPAL INVIGILATOR: K.Vidhya

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ABSTRACT

In agriculture sector where farmers and agri business have to make innumerable decisions every day and intricate complexities involves the various factors influencing them. An essential issue for agricultural planning intention is the accurate yield estimation for the numerous crops involved in the planning. Data mining techniques are necessary approach for accomplishing practical and effective solutions for this problem. Agriculture has been one of the obvious target for big data. Environmental conditions, variability in soil, input levels, combinations and commodity prices have made it all the more relevant for farmers to use information and get help to make critical farming decisions. It focuses on the analysis of the agriculture data and finding optimal parameters to maximize the crop production using data mining techniques like PAM, CLARA, DBSCAN and Multiple Linear Regression. Mining the large amount of existing crop, soil and climatic data, and analysing new non-experimental data optimizes the production and makes agriculture more resilient to climatic change.

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT: DENOMINATION OF CURRENCY UNSING NEURAL METHOD

PRINCIPAL INVIGILATOR: A.SUPHA LAKSHMI

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ABSTRACT

A sensor node is a tiny device with less computational power and energy. It is often one to failure. For instance, a sensor's battery might have depleted and hence it fails to nction. A sensor node might be working for a long period and may wear out. Apart from these, sensor node is equipped with less security features due its memory size, computational power nd energy. Hence a node can be easily compromised. This may lead to data seize, malfunction f sensor, depletion of battery etc. The presence of fault node may affect the sensor network in rms of communication break, data seize, transmission delay, increased traffic etc.

The proposed algorithm will effectively find the unauthorized nodes up to 80% and eplace them with more suitable nodes along with best routing path. The sensors have many ssues related to energy, routing, security, coverage, etc and so the detection and recovery lgorithm takes these issues in to account and replaces sensors with nearer sensors without nvolving much differences in routing paths.

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT: ONLINE TOLL PAYMENT IN CLOUD COMPUTING

PRINCIPAL INVIGILATOR: N.R.VIKRAM

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ABSTRACT

Cloud computing has been envisioned as the next-generation architecture of IT :nterprise. In contrast to traditional solutions, where the IT services are under proper)hysical, logical and personnel controls, cloud computing moves the application software ınd databases to the large data centers, where the management of the data and services nay not be fully trustworthy. This unique attribute, however, poses many new security :hallenges which have not been well understood. In this project focus on cloud data torage security, which has always been an important aspect of quality of service. To nsure the correctness of users' data in the cloud, propose an effective and flexible istributed scheme with two salient features, opposing to its predecessors. By utilizing ıe homomorphic token with distributed verification of erasure-coded data, our scheme chieves the integration of storage correctness insurance and data error localization, i.e., ıe identification of misbehaving server (s). Unlike most prior works, the new scheme ırther supports secure and efficient dynamic operations on data blocks, including: data pdate, delete and append. Extensive security and performance analysis shows that the roposed scheme is highly efficient and resilient against Byzantine failure, malicious data odification attack, and even server colluding attacks.

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT: HOME AUTOMATION

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CO-PRINCIPAL INVIGILATOR: DR.K.SARAVANAN

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ABSTRACT

In Paavai Engineering college, all student data are stored manually, which is difficult to maintain. The data can also be lost in some natural disasters and there is no security for this data. This proposed system is to automate and secure all the data. This also reduces the manual work of the people in the admin panel and the set of registers that were searched to find the information of a previous student, as this system can save the data of those students who have left the hostel. This eliminates the time delay and marking of paper transactions. The manager gets more control over the transactions, such as adding details to new students in the hostel, changing the details of the students, dropping the students, and displaying the details of the student in the hostel. The main purpose of this project is to reduce the efforts of the guards and to provide a better service to the students. This project runs as a web-based application so that if can be used platform-independent. The shared transaction of the host includes the management of registration department, the presence of students, the billboard, the bill collections are stored in the databases, notice board and the out-pass management and reports are created according to user requirements.

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT: SMART VEHICLE TRACKING SYSTEM

PRINCIPAL INVIGILATOR:DR.K.SELVI

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT: MULTI-LEVEL DAPPLE BASED CONTEXT ANALYSIS IN PULMONARY MODULE

PRINCIPAL INVIGILATOR : Mr.P.JOHN VIVEK

CO-PRINCIPAL INVIGILATOR: Mr.P.JOHN VIVEK

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ABSTRACT

Computer aided prognosis of lung CT photograph has been a progressive step inside the early diagnosing of lung illnesses. The fine approach of imposing PC aided prognosis for medical picture analysis is first to pre-process the image which will segment it. The first step in laptop aided diagnosis of lung computed tomography patient picture is usually to first phase the place of hobby, in this situation lung, after which examine one at a time each area acquired, for a tumour, most cancers, node detection or different pathology for diagnosis. This is normally an easy method, due to the fact the location used for setting the right diagnosis, is getting smaller with the technique of segmentation, so the radiologist can cognizance the statement handiest on precise facts inside the specific area. In this paper we proposed lung segmentation method to accurately phase the lung parenchyma of lung CT photos, which can assist radiologist in early diagnosing lung diseases, however the algorithm also can be used to early diagnose different malignant pathologies in different organs including liver, brain or spine.

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT: CARE TACKING OF A PATIENTS USING UTLP

PRINCIPAL INVIGILATOR : Mrs.L.PUNITHA

CO-PRINCIPAL INVIGILATOR: Ms. R.ISWARYA

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ABSTRACT

Nowadays, the loss of memory is very common to human nature. It may not affect the persons in day-to-day life, but it mostly affects the patients. Because, they do not take their medicine at the prescribed time and forgot which medicine has to be taken at the prescribed time. Thus, leads to various problems such as lower efficiency of their medication and malfunctioning. This project provides a solution to rectify this problem. Hence, we introduce a patient reminder mechanism, which includes GLCD, CLCD, 7 Segment display and RTC .The alarm time is set in the system by using Real time clock. At the prescribed time, the alarm will be ON until we touch any one of the medicine picture on the GLCD and at the same time the medicine name and the appointed time will be displayed on CLCD. The count also starts in the 7 segment display and at the appointed time, in which the patient had to take their dose, the voice sound heard. The GSM module can be used to send the text message to the patients and their interim. So, thus the patients can be easily monitored. This can be implemented using Unified Technology Learning Platform. The program developing and executing them using ULK control panel in the normal mode.

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT: AUTOMATED METRO TRAIN SHUTTLE BETWEEN STATIONS

PRINCIPAL INVIGILATOR : Mr.RAVISHAN KARKANDASAMY

CO-PRINCIPAL INVIGILATOR: Mr.RAVISHAN KARKANDASAMY

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT: AUTOMATIC TRACKING SYSTEM FOR STUDENT AND VEHICLE BY USING GPS AD GSM

PRINCIPAL INVIGILATOR : Mr.G.THIRUPATHI

CO-PRINCIPAL INVIGILATOR: Mr.G.THIRUPATHI

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ABSTRACT

The development of an attendance management system in bus using ɔmetrics is our proposed system. Managing student attendance during lecture riods has become a difficult challenge. The ability to compute the attendance rcentage becomes a major task as manual computation produces errors, and also astes a lot of time. Managing driver attendance is also manual process that ecomes more risk and some drivers making forgery while they are taking leave.)ur proposed system provide biometrics system, when student and driver enter nto the bus they provide fingerprint, immediately attendance of the driver register on the transport section i.e., to the bus incharge and attendance of the students get egistered to the class incharge and bus incharge and the attendance message is ent to the parents. Our system reduces time for taking attendance during class ours and avoids driver and student forgery on their attendance.

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT: COMMUNICATION BETWEEN ABB DCT TO SIEMENS DCS USING OPC COMMUNICATION TECHNIQUE

PRINCIPAL INVIGILATOR : Dr.T.LOGANAYAGI

CO-PRINCIPAL INVIGILATOR: Ms. N.MAHALAKSHMI

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ABSTRACT

With the emergence of Microcontrollers, associated peripheral chips and developments in the field of software technology, the whole scenario related in process control and automation underwent a radical change. The distributed Control logic (DCS) have in recent years experienced an unprecedented growth, as a universal element in industrial automation. Instead of achieving the desired control or automation through physical wiring of control devices, in DCS it is achieved through program or software in a DCS. With its tremendous flexibility, real time control, analog value processing, co-ordination and communication it is used in the automation of many processes. In this project OPC Object linking and embedding for Process Control communication technique is used to enable a communication between ABB DCS and Siemens DCS. The OPC is a standard software to interface the controllers. OPC Server exposes DCS memory addresses as Tags. Tags are a friendly name, that maps to a memory register in the DCS. The ABB DCS and Siemens DCS connected by a single Ethernet cable instead of using lot of physical wires. Thus sharing data between DCS made easy and simple by using OPC.

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT: WIRELESS BASED MULTIFUNCTIONAL ROBOT FOR MILITARY APPLICATIONS

PRINCIPAL INVIGILATOR : Dr.N.ANGAYARKANNI

CO-PRINCIPAL INVIGILATOR: Mr. N.MOHANRAJADURAI

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ABSTRACT

In our project, we propose method control of terrorist attack throughout the world by monitoring and controlling of mobile robot via internet through Raspberry pi board. The monitoring and controlling of robotic movements through wireless network by using a web browser and accessing a webpage is used in our project. A camera is mounted on the robot to get better visibility of the objects. The programming language of the robot is based on the LINUX platform which will be interfaced with Raspberry Pi board. The PIR sensor detects a person or an object enters into a surveillance area and the smoke sensor detects the fire accidents by sensing the smoke level increase in the atmosphere. The output of the sensors can be indicated via alarm to the user. The database with the server to ensure that the family monitoring data stored and displayed in real time, and used SSH protocol to ensure that the remote control and the safety reliability of the robot. This mobile robot can be operated from everywhere in the world by using

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RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT: THRESHOLD BASED SCHEME FOR FUSION OF LOW RESOLUTION MULTISPECTRAL IMAGE IN REMOTE SENSING

PRINCIPAL INVIGILATOR : Mr.C.GANESH

CO-PRINCIPAL INVIGILATOR: Mr.C.GANESH

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ABSTRACT

Image fusion is the process by which input images are fused in order to rease the quality. The quality of the output image will be better than any of the ut images. The main methods of the image fusion involve simple image fusion,

this paper, we discuss the application of this methodology to a popular remote ısing application called pan sharpening, which consists in the fusion of a low olution multispectral image and a high-resolution panchromatic image. We sign a complete pan sharpening scheme based on the use of Thresholding Based rphological half gradient operators and demonstrate the suitability of this gorithm through the comparison with the state-of-the-art approaches.The plication of Mathematical Morphology (MM) to image processing has been periencing a considerable success in a wide class of research fields, such as edical imaging, document processing and remote sensing. Classical tasks

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RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT: AUTOMATIC NUMBER PLATE RECOGNITION SECURITY SYSTEM USING EDGE DETECTION

PRINCIPAL INVIGILATOR : Mr.S.LOGANATHAN

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ABSTRACT

In this Project Automatic Number Plate Recognition (ANPR) is a kind of image processing technology for recognizing the vehicle number plate. This system also offers users to place, mark out and monitor moving vehicles automatically by extracting their number plates. It also plays an important role in intelligent traffic control system. This research presents a prosperous method to identify vehicle number plates. The proposed technique is built on morphological operations based on different structuring elements in order to maximally exclude non-interested region and improve object area. This system has been experienced using a database of number plates and simulated results demonstrate major improvements as compared to other conventional systems. The success rate of the proposed method is about 92% with varying light conditions. In Automatic Number Plate Recognition System (ANPRS) to identify a number plate which is an application of image processing. The main process of ANPRS is divided into four steps: The noise in the image is removed by using FMH filter. A simple algorithm is used for background subtraction. Canny edge detection is used to localize the license plate location. Finally, letters and digits are extracted through template matching technique. The proposed algorithms have two advantages: First, the method has strong robustness against noise. Second, it can deal with license plates with different colors.

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RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT: DESIGN AND IMPLEMENTATION OF STM1 INTERFACE

PRINCIPAL INVIGILATOR : Mrs.K.THENDRAL

CO-PRINCIPAL INVIGILATOR: Mr.S.VIMALNATH

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ABSTRACT

SDH is very useful that is used for the telecommunication sector is easy transfer of data. Earlier PDH was widely used but due to some of its disadvantages so we are using SDH network. SDH (synchronous digital hierarchy) is for telecommunications transport formulated by the international telecommunication union(ITU). SDH defines synchronous transport modules (STMs) for the fiber-optic based transmission hierarchy and standard referred I T U –T G.707.The basic building block of SDH is the synchronous transport module level 1 (STM-1) with a bit rate of 155.52Mbps. the STM-1module transmit high speed secured STM-1 data over electrical link (STM-1) and optical link (STM-1),in addition to STM-1 frame generation and frame alignment ,the chips parallel scrambles and descrambles the STM-1 signal.The project mainly focuses on multiplexing digital data ,transmitting and receiving the STM-1 frame . The design is implemented using VHDL simulated and synthesized on Xilinx ISE 14.7 STM1 module does the process of encryption and decryption.STM-1 interface unit shall carry out the following function by typically using three number of FPGAs ,micro controller ,BNC connector for electrical and SFP optical transceivers for the optical interface .transceivers. STM1 module alarms are indicated in LEDS and performance parameters an displayed on the GUL/ test instruments

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RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT: PAY LOAD ADJUSTMENT ROBOT AND IMPLEMENTATION OF STM1 INTERFACE

PRINCIPAL INVIGILATOR : Mrs.R.MOHANAPRIYA

CO-PRINCIPAL INVIGILATOR: Mr.M.SUDHAKAR

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ABSTRACT

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RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT: GSM BASED LPG LEAKAGE MONITORING AND LEAKAGE DETECTION SYSTEM

PRINCIPAL INVIGILATOR : Mrs.P.KRISHNASUDHA

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ABSTRACT

Gas leakage is a major problem with industrial sector, residential premises etc. One of the preventive methods to stop accident associated with the gas leakage is to install a gas leakage detection kit at vulnerable places. The aim of this project is to present such a design that can automatically gas booking, detect, alert and control gas leakage.LPG cylinders have become an integral part of every home. Our kitchens are occupied with LPG cylinders which help us make delicious food. But it can be dangerous and life threatening. The aim of this project is to design a safety-oriented system which will alert the user about any threat in the kitchen through mobile and given the buzzer sound. This system will detect leakage of LPG and send an alert message to the user, at the same time it will switch off the gas supply of LPG by switching regulator-switch using BO motor. It is also used to monitoring the high voltage passing through the home appliances and it will reduce the voltage level in the power supply. It ensures safety from any gas leakage accident like explosion. As an additional advantage, this system has a weighing sensor which can measure the weight of the cylinder and regularly update user about gas left in the cylinder and automatically booking the cylinder. This project proposes a system that will make entire LPG cylinder booking procedure automated without human intervention. This system continuously measures the weight of the cylinder and once it reaches minimum threshold it will automatically sends SMS to the authorized LPG Agent so that they can deliver the LPG cylinder in time. Along with the Automated cylinder booking we also designed feature related to the safety of the user in which it continuously monitor the leakage of LPG gas and alerts the user regarding leakage to avoid major accidents which costs human lives mostly.

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RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT: SMART VEHICLE COMMUNICATION SYSTEM USING LIFI TECHNOLOGY

PRINCIPAL INVIGILATOR : Mrs. A.SAMUNDESWARI

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ABSTRACT

In our project develops a smart vehicular communication system using Li Fi technology which provides protection against vehicular collisions on the Roads. Li Fi (Light Fidelity) is an emerging technology which uses the visible light spectrum for communication. This project focuses on the safety on roads in which the headlights, which consists of LEOs acting as transmitter, communicate with photo sensors acting as receiver. White LEOs used in the head and tail lights can effectively be used for short range communication with the photo detectors. The application is cost effective as LEDS are cheap and simple algorithms are proposed for signal generation and transmission. The basic transceiver circuits are implemented and the results are given. Simulations of the experiment are done using Proteus 8 Professional.

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RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT: AUTOMATED AIR PRESSURE MEASUREMENT IN VEHICLE USING ARTIFICIAL INTELLIGENCE

PRINCIPAL INVIGILATOR : Mrs. M.SUDHA

CO-PRINCIPAL INVIGILATOR: Ms.M.SATHYAPRIYA

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ABSTRACT

Continuous positive airway pressure (CPAP) is a type of positive airway pressure, where the air flow is introduced into the airways to maintain a continuous pressure to constantly stent the airways open, in people who are breathing spontaneously. Positive end-expiratory pressure (PEEP) is the pressure in the alveoli above atmospheric pressure at the end of expiration. CPAP is a way of delivering PEEP but also maintains the set pressure throughout the respiratory cycle, during both inspiration and expiration. It is measured in centimeters of water pressure (cm H2O). CPAP differs from bi-level positive airway pressure (BiPAP) where the pressure delivered differs based on whether the patient is inhaling or exhaling. These pressures are known as inspiratory positive airway pressure (IPAP) and expiratory positive airway pressure (EPAP). In CPAP no additional pressure above the set level is provided, and patients are required to initiate all of their breaths. The application of CPAP maintains PEEP, can decrease atelectasis, increases the surface area of the alveolus, improves V/Q matching, and hence, improves oxygenation. It can also indirectly aid in ventilation, although CPAP alone is often inadequate for supporting ventilation, which requires additional pressure support during inspiration (IPAP on BiPAP) for non-invasive ventilation.

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RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT: A NEW HIGH SPEED AND ENERGY EFFICIENT OF CARRY SKIP ADDER

PRINCIPAL INVIGILATOR : Mrs.K.NIRMALA

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ABSTRACT

Carry Skip Adder (CSKA) structure that has a higher speed yet lower energy consumption compared with the conventional one. The speed enhancement is achieved by applying concatenation and incrementation schemes to improve the efficiency of the conventional CSKA (Conv-CSKA) structure. In addition, instead of utilizing multiplexer logic, the proposed structure makes use of AND-OR-Invert (AOI) and OR-AND-Invert (OAI) compound gates for the skip logic. The proposed structures are assessed by comparing their speed, power and energy parameters with those of other adders using a 45-nm static CMOS technology for a wide range of supply voltages. In addition, the power–delay product was the lowest among the structures considered in this paper, while its energy–delay product was almost the same as that of the Kogge–Stone parallel prefix adder with considerably smaller area and power consumption. Simulations on the proposed hybrid variable latency CSKA reveal reduction in the power consumption compared with the latest works in this field while having a reasonably high speed.

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RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT: A SENSIBLE MONITORING OF DRIVER STRESS BY USING WEARABLE GLOVE SYSTEM

PRINCIPAL INVIGILATOR : Mr.S.SATHEESHKUMAR

CO-PRINCIPAL INVIGILATOR: Mr.S.SATHEESHKUMAR

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ABSTRACT

This project is focused to develop a wearable glove system to detect driver stress events in real-time. The driver's stress is estimated by the use of physiological signals and steering wheel motion analysis. The steering wheel motion is analyzed by driver's hand moving characteristic. The studies are carried out in a simulated driving which is composed of three distinct driving scenarios to study the subjects' behaviors that correlate with stress. The stress assessments of driving test subjects are self- reported-and post-stimulus as well as observed through facial expression recorded throughout the whole experiments. Moreover, this study also aimed to investigate the correlation of stress events with different driving tasks. Stress index are computed by a support vector machine pattern classifierwith extracted features from sensors reading. Results revealed the true accuracy of stress detection is greater than 95% in average.

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RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT: ELECTRIC CAR USING SOLAR SYSTEM

PRINCIPAL INVESTIGATOR: Dr.G.BALAJI

CO-PRINCIPAL INVESTIGATOR: V.VIJIYAL

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ABSTRACT

In our ecosystem mostly Gasoline engine cars are used by the public which have high cost of refueling that cause emission of greenhouse gases. In this way to reduce the automotive emission which causes the Greenhouse gases, an alternative technology is needed. The most convenient way is to use renewable energy sources. In this scenario we provide an alternative fuel for vehicles by using renewable energy resources. Among the various resources available, we design a solar power controlled motor device for automotive application.

In this project, the Electric Car is the way to alter the energy source. Sunlight is the main source of energy to obtain light energy which is converted into electricity. Amount of energy obtained from the source may vary from time-to-time. The vehicle chosen for the experiment is Marathi Omni. The solar panels are placed on the top of the car. Energy obtained from the solar panel is given to the charge controller. Charge controller can prevent overcharging and also the overdischarging of the battery. Output of the charge controller is given to the Valve Regulated Sealed Lead-Acid Battery. Then the Valve Regulated Sealed Lead-Acid Battery is given to the Motor through Driver circuit which controls speed of the Motor.

Battery charging time through charge controller is four to five hours and the Electric Car travels for the distance of about 150Km with the speed of 30 to 40 Km/hr.Thus the proposed system of automotive vehicle helps to achieve zero pollution, zero noise effect and fuel consumption.

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RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT: ELECTRIC CAR USING WIND ENERGY

PRINCIPAL INVESTIGATOR: Dr.G.BALAJI

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ABSTRACT

Rising fuel price, pollutant emission and an increasing concern for global warming has initiated a transition towards electric vehicles. Main challenge for Hybrid Electric Car is energy management system that controls power split during driving mission. Nowadays alternative fuel and advanced power system has became high priority in vehicle manufacturing.

This project, Hybrid Electric Car is the way to alter the energy source. Hybrid Electric Vehicles uses the Valve Regulated Sealed Lead-Acid (VRSLA) battery of 48V, 165Ah in 32 set of batteries which exists as a source that provides power to the motor. In old design the Electric vehicles does not have alternator. The vehicles are charged through plug. In our design, electric vehicle is charged by alternator, solar and wind source of energy. But plug is not necessary because the alternator connected to the wheel of the vehicle regenerates the energy and boost up the power which moves the vehicle.

Energy efficiency for better mileage is obtained. This work is more beneficial in hilly region and area like college campus, school and hospitals and it generates zero pollution, zero noise effect and fuel consumption. Their higher price both transfer consumers away and make the vehicles a less alternative saving investment. Widespread change to advanced hybrid technology is not practicable option in the future because of both cost and the limited amount of hybrid on the road nowadays. It is frequently engaged due to maintenance less. The proposed model of Hybrid Electric Car developed through real model.

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RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT: SOLAR POWER SYSTEM OVERALL EFFICIENCY

PRINCIPAL INVESTIGATOR: R.DURAISAMY

CO-PRINCIPAL INVESTIGATOR: C.GOWRISANKAR

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ABSTRACT

The main aim of this project is to generate power from the renewable source such as Solar Power in order to charge the solar vehicles such as e-car and e-bike. The solar radiation falls on the solar panel which converts the solar energy to electric energy. The generated solar power is a fluctuating Direct Current (DC) voltage. In order to get constant DC power an Buck Boost Converter is being used which makes the fluctuating DC to constant DC.

This type of charging station is being used in the highways as the demand for the fuel is being increased nowadays. The charging station is becoming most used for the electric vehicles which are being coming to market nowadays. The batteries which are being used here is to store the generated power to use for the future need.

The project is also used to charge the electronic equipments by converting the DC supply to Alternating Current (AC) supply by the use of an inverter. The inverter converts the DC supply to AC supply to be used for the normal operations of the other electronic equipments. The amount of radiation that falls on the solar panel is being measured and an average value is being calculated, so the voltage produced by the solar panels can be found. The generation of the solar voltage gets varied as the climate and season gets varied.

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RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT: HYBRID ELECTRIC CARS USING POWER CONVERTERS

PRINCIPAL INVESTIGATOR: T.NANDAGOPAL

CO-PRINCIPAL INVESTIGATOR: Dr.G.SARAVANAKUMAR

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ABSTRACT

Rising fuel price, pollutant emission and an increasing concern for global warming has initiated a transition towards electric vehicles. Main challenge for Hybrid Electric Car is energy management system that controls power split during driving mission. Nowadays alternative fuel and advanced power system has became high priority in vehicle manufacturing.

This project, Hybrid Electric Car is the way to alter the energy source. Hybrid Electric Vehicles uses the Valve Regulated Sealed Lead-Acid (VRSLA) battery of 48V, 165Ah in 32 set of batteries which exists as a source that provides power to the motor. In old design the Electric vehicles does not have alternator. The vehicles are charged through plug. In our design, electric vehicle is charged by alternator, solar and wind source of energy. But plug is not necessary because the alternator connected to the wheel of the vehicle regenerates the energy and boost up the power which moves the vehicle.

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RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT: HYBRID CYCLE

PRINCIPAL INVESTIGATOR: Dr.G.BALAJI

CO-PRINCIPAL INVESTIGATOR: S.THINESH

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ABSTRACT

Solar and wind powered by using electric bicycle can be designed because it is environmentally friendly and the cost is much lower. It can mainly design in order to overcome the problem of electricity, and it cannot be recharge frequently. It provides a solution for the environmental pollution. In case of cloudy day wind turbine which was fitted in front of the bicycle can be used.

Solar cells are an alternative method for generating electricity directly from sunlight. In this project, we learn about the working of solar cells. This project helps to ride the cycle without pedalling and plugging. Solar panels are used to generate electricity. Solar energy is an important means of expanding renewable energy source. Many researches were conducted to develop some methods to increase the efficiency of photovoltaic systems, i.e. solar panels

Our project will include DC generator to generate electricity from it is fixed with front axial wheel of the electric bicycle at the education level, it is necessary for engineering and technology students to have understanding and appreciation of technologies associated with renewable energy.

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RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT: SURVEILLANCE CAR CONTROLLED USING DUAL TONE MULTI FREQUENCY

PRINCIPAL INVESTIGATOR: M.RAJA

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ABSTRACT

The "DTMF based robot" is controlled by a smart phone that makes a call to another smart phone attached to the robot. In the course of a call, if any button is pressed, a tone corresponding to the button pressed is heard at the smart phone end of the call. This tone is called "Dual Tone Multiple-Frequency" (DTMF) tone. The robot perceives this DTMF tone with the help of the smart phone stacked on the robot. The received tone is processed by the Arduino UNO microcontroller with the help of a DTMF decoder. The microcontroller then transmits the signal to the motor driver for operate the motors. Since this robot is controlled by dialing a call so we can also call it as DTMF controlled robot. The transmitted section consists of a smart phone linked with another smart phone through a calling. Using transmitter linked to smart phone we can generate DTMF tones which will be received by another smart phone mounted on robot after call connection. The smart phone on robot is connected to the Arduino controller and the Arduino UNO is connected to the motor driver which helps the robot to move wireless. As we are using internet the robot can be operated from any part of the world so, we need to see where the robot is moving, for which we are using Airdroid app for monitoring through camera inbuilt in smart phone mounted on robot.

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RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT: ESCALARA CLIMBER USING ELECTRIC MOTOR

PRINCIPAL INVESTIGATOR: Dr.B.MURALIBABU

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ABSTRACT

A stair climber is a type of trolley fitted with rotating wheels or tracks so that it can be pushed or pulled up or down steps or a stairway. The project aims to develop a mechanism for easy transportation of heavy load over stairs. The need of such system have raised from day to day requirement in our society. Stair climbers can be used in manual or battery-powered using electrical motor climber, and are commonly found in wheel, track, and push arm or walker variants. Using of this vehicle, the labour cost can be reduced as well as huge amount of loads can be transferred uniformly with less power consumption. Moreover, considering some drawbacks due to lack of implementation of all techniques during manufacturing phase the test and trial run showed considerably significant and encouraging results that might help the future researchers. In the light of this, the project attempts to design a stair climbing hand cart which can carry heavy objects up the stairs with less effort compared to carrying them manually. It also endeavours to study the commercial viability and importance of such a product. Each set wheel frame consists of three wheels attached with nut and bolt. Using of this vehicle, the labour cost can be reduced as well as huge amount of loads can be transferred uniformly with less power consumption.

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RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT: VOLTAGE UNBALANCE OF BACK TO BACK NPC SYSTEM USING PMSG

PRINCIPAL INVESTIGATOR: S.RAMACHANDRAN

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ABSTRACT

Single stage Buck/Boost inverter is an converter which performs two actions in a single stage. It boosts the DC voltage and invert to AC in a single stage. In Conventional two stage converter there will be two stages. The first stage will be a boost or buck boost DC-AC converter which is meant for conditioning and levelling the DC voltage approximately to invert to AC voltage required. The second stage will be an inverter, to invert the DC output obtained from first stage to AC voltage.

This project presents a new step-up/step-down DC-AC converter which is having application where an instantaneous voltage higher or lower than input DC voltage is required. It consists of one switching cell including two switches, two diodes, one inductor, and one capacitor on each inverter leg. The PWM is achieved by comparing a high frequency carrier (triangular) waveform with a suitable reference waveform (Sinusoidal). Since the components is less, It makes the system more compact, reliable, less weight, low cost etc. For the Validation of the theoretical analysis, the inverter was simulated for an output rated power of 1 kW, a DC input voltage of 96Vdc and output voltage of 110Vrms. Further, the fundamental output frequency was at 50 Hz and the switching frequency at 20 kHz. Detailed analysis and design of proposed converter is carried out. Simulation results are revealed for circuit validation.

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT: POWER GENERATION BY USING GYM-CYCLE MECHANISM

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ABSTRACT

In order to reduce the usage of fossil fuels and to increase the usage of renewable energy our project focuses on reducing the usage of fossil fuels and to increase the usage of renewable energy. Usually the utilization of fossil fuels as the energy source causes environmental degradation. Since the fossil fuels are not completely utilized there remains certain amount of wastage which needs to be considered. In our project we proposed that the renewable energy source could be based on exercise equipment. The energy expended in a typical workout at the gym is usually wasted in the mechanics of the equipment.

This project harnessed the mechanical energy of the machine and converted it into an electrical energy using a generator based system. Here the exercise equipment will be attached to a permanent magnet dc generator. This creates a dc voltage which will be fed into a circuit and then sent to a battery where it can be stored for future use. The stored energy then can be utilized by sending it to the inverter which converts a dc voltage into an AC voltage at the desired voltage and frequency depends on the appropriate transformers, switching and control circuits. This project will introduce the project and present all applicable information regarding the design, development and the final product.

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT: AUTOMATIC BATTERY MAINTENANCE FOR VEHICLES USING ARDUINO

PRINCIPAL INVESTIGATOR: R.MUTHUKUMAR

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ABSTRACT

In this project, we introduce the notion of automatic battery maintenance in vehicle more specifically we investigate the microcontroller based battery maintenance in vehicle. Generally the battery used in the vehicle for starting purpose and lighting purpose .In some cases the vehicle not used similar days (under rest condition of long duration). The battery will discharged. Thus discharge occurs under two ways self-discharge and temperature variations of environment. This phenomena will reduce energy stored on the battery and it causes short the life span of battery. this discharge causes trouble to start the vehicle, so we maintain the battery charge level under rest condition .

Task will automatically implemented by arduino microcontroller and it will monitoring battery voltage in the vehicle . If voltage down under discharge condition automatically. It will intimate via message using GSM module .The battery healthy conditions also monitored by microcontroller. The program was developed in arduino programing software tool on Arduino IDE. Developed and uploaded to the microcontroller It is a open source hardware and software platform of embedded system.

The voltage level in the system is controlled automatically. Time delay will maintained by the microcontroller .Then it turn of the ignition .Thus process expand the battery life ,battery will healthy state and without troubling to start the vehicle It has applicable for the future developed next generation vehicles .

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RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT: AIR POLLUTION CONTROL BASED ON SOLAR SYSTEM

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ABSTRACT

This paper contains design air pollution controlling and monitoring in industries using Arduino and PV cells. The level of pollution has increased with times by lot of factors like the increase in population, increased vehicle use, industrialization and urbanization which results in harmful effects on human well being by directly affecting health of population exposed to it. In order to monitor and controlling quality of air, the device is embedded with real-time measurement through visualization in Liquid Crystal Display (LCD) monitor. The parameters of the environment to be monitored and controlled are chosen as temperature, volume of CO, volume of CO_2, detection of leakage of LPG. In this system consist of CO, CO_2sensors, electrostatic precipitator and carbon filters .An electrostatic precipitator (ESP) is a filtration device that removes fine particles, like dust and smoke, from a flowing gas using the force of an induced electrostatic charge minimally impeding the flow of gases through the unit. Carbon filtering is a method of filtering that uses a bed of activated carbon to remove contaminants and impurities, using chemical absorption. Each particle/granule of carbon provides a large surface area/pore structure, allowing contaminants the maximum possible exposure to the active sites within the filter media.

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT: HYBRID ELECTRIC CAR USING ALTERNATOR

PRINCIPAL INVESTIGATOR: Dr.A.RATHINAM

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ABSTRACT

The proposed electric car is focused on converting the normal internal combustion engine fuel car into electric car instead of fuel engine to electric motor. Here the permanent magnetic brushless DC motor with coupling gear box. From that increasing the pulling torque and increasing the speed of electric car. In the existing system the speed of the electric car is based on the speed of the motor but in our project the speed of the electric car is based on the speed of the transmission system.

In the gear shifting control strategy for pure electric vehicle with inverse manual transmission is proposed. Through the precise control of sliding sleeve, clutch engagement and separating time, gear shifting process is realized without driving torque interruption. The results show that, during up and down shift process, the driving torque keeps more than 50%, obviously improve the pure electric vehicle accelerating performance and the ability to climb.

Normally the electric car is available in the market but the cost of this car is very expensive. But our project, by converting normal fuel car into electric car with low cost, less pollution and eco-friendly.

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT: PERFORMANCE ANALYSIS OF BRUSHLESS DC MOTOR USING ARDUINO

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ABSTRACT

This project is used to control and analyze the BLDC motor speed by using an IR speed sensor mechanism. There is a need for controlling a DC motor speed in industries that uses drilling, spinning, lathes, elevators etc therefore this system provides an efficient mechanism for increasing or decreasing the speed.

The project comprises of three channels. The first one is input channel where desired speed is entered using switches. The second channel i.e. processing enables a RPM reference of motor by interfacing IR sensor mounted on shaft and microcontroller of Atmega328 family in the circuit. Microcontroller generates SPWM pulses according to the input or switches to regulate the supply of DC power to motor. And the last channel i.e. output uses an opto-isolator and a MOSFET for driving BLDC motor.

The IR sensor measures the speed and sends it to microcontroller that display it on LCD. Finally the performance of BLDC motor is analyzed by both hardware and software interms of SPWM and IOT.

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RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT: CHARGE CONTROLLER [PWM]

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ABSTRACT

In this project we convert the dc source into ac source by using PWM inverter from 2.5kw solar plant. The other type of inverter has low efficiency and high noise will disturb the output voltage waveform which is non-linear. The applied load can affect the output voltage and produce high harmonics content. Since it has reduced the output voltage waveform which is not being a sine wave, so we need linear voltage and high efficiency low harmonics content inverter. We chose the PWM inverter circuit which can correct its output voltage against the variations in the output load. In a non-PWM inverter, the change in output load directly affects the output voltage (when output load increases output voltage decreases and vice versa), but in a PWM inverter the output voltage remains constant over a range of output load.

We design PWM inverter for 3.5KVA to convert dc source into ac source. Then we connect the PWM inverter to 48v/600ampere hours the load range was up to 2500Watts for lighting fan and operate the laboratory equipment. Now a day's electricity is most essential facility for the human being. One of the primary needs for socio-economic improvement in any nation in the world is the provision of reliable electricity supply systems. This work is an improvement of an indigenous technology of Solar Power system that harnesses the renewable energies in Sun to generate electricity. Basically this system involves the integration of energy system that will give continuous power.

Solar panels are used for converting solar energy is used for converting sun energy into electricity. This electrical power can utilize for various purpose. Generation of electricity will be takes place at affordable cost. This paper deals with the generation of electricity by using sources combine which leads to generate electricity with affordable cost without damaging the nature balance and essential for information communication technology infrastructure and people in rural communities.

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT: CASE STUDY ABOUT BATTERY

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ABSTRACT

Charging a battery with a solar system is a unique and difficult challenge. In the old days the on-off regulators were used to limit battery out gassing when a solar panel produced excess energy. The history for on-off regulators has early battery failures increasing on load disconnects and growing user dissatisfaction. The result is a higher charging efficiency rapid recharging and a healthy battery at full capacity. The new developments in lead acid battery and analysis of various batteries used for solar energy storage applications. The described solution includes thermal management of an Ultra Battery bank, an inverter, charger controller and smart grid management, which can monitor the state of charge SoC and the state of health SoH of the battery during system operation. In addition the smart battery management can trend the SoH of the battery and allow cell replacement at a convenient time without affecting the system operation. The Application of the lead acid tubular battery has the reduction in global consumption of the limited supplies of the fossil fuels and it is associated with the production of greenhouse-gas emissions. This new method of solar battery charging promises some very interesting and unique benefits.

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RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT: CASE STUDY OF INVERTER

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ABSTRACT

Inverters are widely used in the domestic and industrial environments. It performs as second line of source in case of power off from direct supply. Due to low capacity of the battery, the inverter dies out by energy utilized by heavy load appliances. Our project has designed to overcome from such issues by solar energy.

Solar energy generates by PV panels with hybrid inverter batteries to store energy. In photovoltaic power generation system DC voltage variation leads to AC voltage distortion. The inverter generates the voltage up to 24V AC. By using hybrid inverter or multi-mode inverter (solar and storage system) it can simultaneously manage inputs from both solar panels and a battery bank, charging batteries with either solar panels or from direct supply. By using of space vector PWM based inverter it generate sinusoidal voltage and current. The main advantage of our project is giving high efficiency and low harmonic distortion in solar power generation.

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT: ELECTRIC CAR USING ALTERNATOR

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ABSTRACT

Rising fuel price, pollutant emission and an increasing concern for global warming has initiated a transition towards electric vehicles. Main challenge for Hybrid Electric Car is energy management system that controls power split during driving mission. Nowadays alternative fuel and advanced power system has became high priority in vehicle manufacturing.

This project, Hybrid Electric Car is the way to alter the energy source. Hybrid Electric Vehicles uses the Valve Regulated Sealed Lead-Acid (VRSLA) battery of 48V, 165Ah in 32 set of batteries which exists as a source that provides power to the motor. In old design the Electric vehicles does not have alternator. The vehicles are charged through plug. In our design, electric vehicle is charged by alternator, solar and wind source of energy. But plug is not necessary because the alternator connected to the wheel of the vehicle regenerates the energy and boost up the power which moves the vehicle.

Energy efficiency for better mileage is obtained. This work is more beneficial in hilly region and area like college campus, school and hospitals and it generates zero pollution, zero noise effect and fuel consumption. Their higher price both transfer consumers away and make the vehicles a less alternative saving investment. Widespread change to advanced hybrid technology is not practicable option in the future because of both cost and the limited amount of hybrid on the road nowadays. It is frequently engaged due to maintenance less. The proposed model of Hybrid Electric Car developed through real model.

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT: INVESTIGATIONS ON PERFORMANCE ENHANCEMENT OF NATURAL CIRCULATION SOLAR HOT WATER SYSTEM

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ABSTRACT

Since the inception of industrial electrical systems, coordination tasks were performed to ensure that protection systems would operate with the necessary reliability and security. The tools to perform such tasks have evolved from the use of a glass table with light and log-log curve sheets into computer base programs with GUI. Meanwhile, protective devices have also gone through advancements from the electromechanical devices to the multifunctional, numerical devices. Throughout the changes in coordination tools and protective device configurations, a good number of protection coordination principles remain with us. In addition, new techniques are developed to assist us with the use of protection systems to reduce arc flash energy in addition to basic protection functions.

Basically in industries employ protective devices in order to protect the equipment and humans nearby MV (Medium Voltage) and LV (Low Voltage) protection are always necessary and hence proper installation and maintenance are generally made. However HV (High Voltage) protection is not made in some industries, because only incoming feeder carries HV lines to industries. Also cost is a factor while employing HV protection. As humans work nearby the power system equipment's, it is necessary to protect those areas using LV and MV protective devices like Circuit breakers, Isolators, fuses etc.,

For this the project MV and LV protection is made to Malaysia's largest district cooling provider serving at Putrajaya, Kuala Lumpur City Centre (KLCC) and Kuala Lumpur International Airport (KLIA). The Single Line Diagram of this gas cooled district plant is taken and worked using ETAP software. The results of the entire plant are discussed with the computer simulations.

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DEPARTMENT OF MECHANICAL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT:

EFFECT OF WELDING PROCESS ON MECHANICAL AND METALLURGICAL PROPERTIES OF COPPER ALLOYS

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ABSTRACT

In this work, 2-mm-thick pure copper plates are joined using friction stir spot welding (FSSW) at different rotational speeds, plunging rates and dwell times. Effects of these process parameters on the quality of the weldments, bonding region and shear–tensile failure load of the joints are studied. A maximum shear–tensile failure load of 5.5 kN was obtained at 1200 rpm rotational speed, 20 mm/min plunging rate and 2-s dwell time. Interestingly, this set of welding conditions also resulted in end of partial metallurgical bonded region along the interface that is free of voids and cracks which indicates strong weldments. Fracture surface morphology was also investigated, and ductile fracture mode was observed for 1200 rpm, 20 mm/min and 2 s which showed high elongation before complete fracture. Moreover, mechanical energy consumed during welding was estimated for each set of welding conditions under study and was found significantly affecting shear tensile failure load of the welds.

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DEPARTMENT OF MECHANICAL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT:

MODELLING AND DESIGN OF SOLAR POWER CYCLE

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ABSTRACT

Since the fuel prices not only in India but throughout the world is increasing day by day thus there is a tremendous need to search for an alternative to conserve these natural resources. Thus a solar bicycle is an electric vehicle that provides that alternative by harnessing solar energy to charge the battery and thus provide required voltage to run the motor. Since India is blessed with nine months of sunny climate thus concept of solar bicycle is very friendly in India. Hybrid bicycle combines the use of solar energy as well as the dynamo that runs through pedal to charge the battery to run the bicycle. Thus solar hybrid bicycle can become a very vital alternative to the fueled automobile thus its manufacturing is essential.

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DEPARTMENT OF MECHANICAL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT:

AUTOMATIC PNEUMATIC BUMPER FOR 4 WHEELER

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ABSTRACT

The technology of pneumatics plays a major role in the field of automation and modern machine shops and space robots. An extendable and retractable bumper (E/R bumper) is presented in this project. The aim is to design and develop a control system based intelligent electronically controlled automotive bumper activation is called AUTOMATIC PNEUMATIC BUMPER SYSTEM . The E/R bumper is intended to automatically extend in situations in which there is a high risk of frontal impact to prepare the vehicle for crash and retract when the risk subsides. This bumper system is only activated the vehicle speed above 30-40 km per hour. This vehicle speed is sensed by the proximity sensor and this signal is given to the control unit and pneumatic bumper system

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DEPARTMENT OF MECHANICAL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT:

FABRICATION OF REFRIGERATION SYSTEM WITH MULTI-PURPOSE APPLICATION

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ABSTRACT

The ling will be done simultaneously with the help of single vapour compression refrigeration cycle. It has the waste heat recovery system from the compressor for heating effect. In a normal Vapour compression refrigeration cycle, the refrigerant coming out of the compressor liberates heat while going to the condenser. The proposed project utilizes this waste heat for the heating purpose. It can be used for all simple vapour compression refrigeration systems. The concept can be extended for applications in air conditions, freezers, water coolers and small scale refrigeration plants. The project will lead to hybrid heating and cooling application with same vapour compression refrigeration system.

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DEPARTMENT OF MECHANICAL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT:

POWER GENERATION FROM EXHAUST GAS

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ABSTRACT

In this project, we modify a stationary diesel engine for producing power using turbine. Nowadays in automobile field many new innovating concepts are being developed. We are using the power from vehicle exhaust to generate the electricity which can be stored in battery for the later consumption. In this project, we are demonstrating a concept of generating power in a stationary multiple cylinder diesel engine by the usage of turbines. Here we are placing a turbine in the path of exhaust in the silencer. The turbine is connected to a dynamo, which is used to generate power. Depending upon the airflow the turbine will start rotating, and then the dynamo will also starts to rotate. A dynamo is a device which is used to convert the kinetic energy into electrical energy. The generated power is stored to the battery. It can be stored in the battery after rectification. The rectified voltage can be inverted and can be used in various forms of utilities.

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DEPARTMENT OF MECHANICAL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT:

TRIBOLOGICALBEHAVIOUR OF WEAR PERFORMANCE OF ALUMINIUM HYBRID METAL MATRIX COMPOSITE

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ABSTRACT

Aluminum based metal matrix composites (MMCs) are appropriate materials for structural applications in the aircraft and automotive industries because they are ductile, highly conductive, lightweight and have a high strength to weight ratio. Wear and Friction behaviour of Al6061 with various percentage volumes of Multiwall carbon nanotube and Silicon Carbide reinforcement through stir casting method followed by die-casting was investigated. Wear test was made by using Pin on Disc Apparatus on the prepared Specimen. It was found that, under mild wear conditions, the composite displayed lower wear rate and friction coefficient compared to Aluminium. However, for severe wear conditions, the composite displayed higher wear rate and friction coefficient and it was clarified that the friction and wear behaviour of Al–SiC-MWCNT composite is largely influenced by the applied load and there exists a critical load beyond which CNTs could have a negative impact on the wear resistance of aluminium alloy. Also the hardness of the composite was increased by increasing the percent volume of reinforcement.

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RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT:

HYBRID NON LINEAR VIBRATION ENERGY HARVESTER

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ABSTRACT

Vibration energy harvesting converts mechanical energy from ambient sources to electricity to power remote sensors. Compared to linear resonators that have poor performance away from their natural frequency, nonlinear vibration energy harvesters perform better because they use vibration energy over a broader spectrum. We present a hybrid nonlinear energy harvester that combines bi-stability with internal resonance to increase the frequency bandwidth. A two-fold increase in the frequency bandwidth can be obtained compared to a bi-stable system with fixed magnets. The harvester consists of a piezoelectric cantilever beam carrying a movable magnet facing a fixed magnet. A spring allows the magnet to move along the beam and it provides an extra stored energy to further increase the amplitude of vibration acting as a mechanical amplifier. An electromechanically coupled mathematical model of the system is presented to obtain the dynamic response of the cantilever beam, the movable magnet and the output voltage. The perturbation method of multiple scales is applied to solve these equations and obtain approximate analytical solutions. The effects of various system parameters on the frequency responses are investigated. The numerical approaches of the long time integration (Runge-Kutta method) and the shooting technique are used to verify the analytical results. The results of this study can be used to improve efficiency in converting wasted mechanical vibration to useful electrical energy by broadening the frequency bandwidth.

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RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT:

EVALUATION ON MECHANICAL PROPERTIES OF SISAL FIBER USING ALKALI CHEMICAL TREATMENT

PRINCIPAL INVIGILATOR: P.Elumalai

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ABSTRACT

The sisal (*Agave sisalana*) is a cellulosic fiber produced in Brazil since 1903 and until now has been one of the most traded due to its characteristics such as the low cost, low density, specific resistance, biological degradability, CO_2 neutrality, renewability, good mechanical properties, non-toxicity and furthermore can be easily modified by a chemical agent improving their mechanical and thermal properties. In this work, the sisal fibers were modified by alkali solutions of NaOH (5% and 10%) and bleached with sodium hyplochlorite $NaClO/H_2O$ (1:1) at 60–75 °C. It was used as reinforcing agent in the preparation of phenolic matrix composites derived from cashew nut shell liquid (CNSL). The chemical treatment improved the thermal stability of the weight loss process for sisal treated with NaOH 5% in about 12 °C and for sisal treated with NaOH 10% in about 18 °C when compared to sisal fiber in its raw state. It was also observed a variation of 15 °C when comparing the composite reinforced by raw sisal with composite reinforced with sisal treated NaOH 10%.

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DEPARTMENT OF MECHANICAL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT:

MICRO STRUCTURE AND MECHANICAL PROPERTIES INVESTIGATION OF HYBRID MATERIALS MADE OF A413 ALLOY

PRINCIPAL INVIGILATOR: C. Suresh

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ABSTRACT

The employment of aluminum based metal matrix composites are exponentially growing up in wide range of applications in automobiles. The prevailing demand to produce refined pore free and near net shape composites, is sufficed by squeeze casting process. The main intent of this work is to predict the experimental results and to analyze the effects of process variables on squeeze cast A413-B4C composites. The experimental work is carried out based on Full Factorial Design (FFD) and Artificial Neural Network (ANN) model has been developed based on feed forward back propagation to map the mechanical properties with different architectures. Optimal model shows appropriate results that can be estimated rather than measured, thereby reducing the testing time and cost. Further, quantitative and statistical analyses were performed in order to evaluate the effect of process parameters on the mechanical properties of the composites.

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DEPARTMENT OF MECHANICAL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT:

FABRICATION OF AL7075 WITH FLYASH AND E-GLASS FIBER

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ABSTRACT

A review of various properties of E-glass fiber reinforced aluminum matrix composites (AMCs) is presented in this paper. E-glass fiber reinforced aluminum matrix composites are the promising materials in many areas such as aerospace, thermal management, and automobile. The properties discussed include, mechanical and wear behavior of E-glass fiber reinforced aluminum matrix composites and effects of reinforcement fraction and heat treatment process on these properties. The results obtained by many researchers indicated the uniform distribution of reinforced particles, when the metal matrix composite was processed through stir casting route. In this review, focus is made on the effect of E-glass fiber on the various properties of AMCs when used in varying percentages with the base matrix. The studies show that there is an improvement in the tensile strength, compressive strength, hardness and wear behavior of the composite materials with an increase in the percentage of E-glass fiber up to certain limit, and beyond which it results in decrease in the properties.

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RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT:

DESIGN AND FABRICATION OF DRONE FOR SEED DROPPING

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ABSTRACT

The employment of aluminum based metal matrix composites are exponentially growing up in wide range of applications in automobiles. The prevailing demand to produce refined pore free and near net shape composites, is sufficed by squeeze casting process. The main intent of this work is to predict the experimental results and to analyze the effects of process variables on squeeze cast A413-B4C composites. The experimental work is carried out based on Full Factorial Design (FFD) and Artificial Neural Network (ANN) model has been developed based on feed forward back propagation to map the mechanical properties with different architectures. Optimal model shows appropriate results that can be estimated rather than measured, thereby reducing the testing time and cost. Further, quantitative and statistical analyses were performed in order to evaluate the effect of process parameters on the mechanical properties of the composites.

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DEPARTMENT OF MECHANICAL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT:

DESIGN AND FABRICATION OF STAIR CASE LIFTING TRALLEY WITH SUSPENSION SYSTEM

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ABSTRACT

This project aims at developing a mechanism for easy transportation of heavy loads over stairs. The need for such a system arises from day-today requirements in our society. Devices such as hand trolleys are used to relieve the stress of lifting while on flat ground; however, these devices usually fail when it comes to carrying the load over short fleet of stairs. In the light of this the project attempts to design a stair climbing hand cart which can carry heavy objects up the stairs with less effort compared to carrying them manually. It also endeavours to study the commercial viability and importance of such a product. Several designs were conceived that would allow a non-industrial hand trolley to travel over stairs, curbs, or uneven terrain while reducing the strain on the user. In our project, the trolley is equipped with Tri-Star wheels which enable us to carry load up and down the stairs. It also eases the movement of trolley in irregular surfaces like holes, bumps, etc. Additionally we are included a wheel setup to pedal it on the ground and while climbing stairs the rear wheel is lifted and locked by locking system.

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DEPARTMENT OF MECHANICAL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT:

DESIGN AND DEVELOPMENT OF ELECTROMAGNETIC BRAKING SYSTEM

PRINCIPAL INVIGILATOR: M.Vinoth Kumar

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ABSTRACT

The conventional braking systems works on the friction principle where the electromagnetic brakes are completely frictionless. By using electromagnetism and Eddy's current fundamentals the Electromagnetic Braking System is actuated. It uses magnetic force to carry out its purpose and the power required for breaking is transmitted manually. This system is formed by combining Electrical and Mechanical concepts. The purpose of introducing this system is to achieve efficient braking and reduce the frequency of automobile accidents as well as the maintenance of this braking system is less as compared to conventional braking systems. This dissertation concentrates on supplying electricity to the coil so the magnetic field can be developed across the armature. The current flowing across the coil results in attraction of armature towards the coil which develops the torque and the vehicle come to rest.

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DEPARTMENT OF MECHANICAL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT:

MECHANICAL ANALYSIS OF ALUMINIUM 6065 WITH SILICON CARBIDE AND FLYASH

PRINCIPAL INVIGILATOR: R.Mohanraj

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ABSTRACT

A composite is a fusion of two or more different material chemically and unsolvable phases; its properties and structural concert are greater the ingredients performing homogeneous phases. ceramics and Metals, as well, can be implanted with particles, to advances their property; these mixtures are known as MMCs. Aluminum alloy compose a significant engineering material generally engaged in the aerospace industries for the production of dissimilar parts and equipments. It is due to its more strength to density fraction that it a sought after MMCs. A variety of processing technique and mechanical properties testing's available for manufacturing the Aluminium matrix composites. The mutual reinforcement's effect on Aluminium Metal Matrix composites with individual and multiple particulate reinforcements like Hybrid Metal matrix composites are finding better applications in aerospace industries, automobile industries, underwater, and transportation. In the current situation, a bunch of research activities were on pipe line. This review particularly directs the engineers and researchers towards right reinforcement materials selection especially hybrid composites by their properties in the appropriate field and diverse technique involved in production of metal matrix composites.

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DEPARTMENT OF MECHANICAL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT:

PERFORMANCE STUDY OF MICRO ECM PROCESS TO DRILL MICRO HOLES

PRINCIPAL INVIGILATOR: V.Subburam

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ABSTRACT

The increasing demand for compactness and more number of functional features in every products these days have made producers to attempt for newer machining techniques. Different types of micro-machining techniques are used for producing miniature parts and components. Micro machining refers to material removal from 1 μm to 999μm. Electrochemical machining is capable of machining a wide range of electrically conductive materials including tough and difficult-to-machine materials. This non-contact micro-fabrication process does not induce residual stress or cause tool wear. When applied to produce micro-features, it is referred as electrochemical micro-machining(EMM). In this attempt experiments have been conducted to investigate the influence of voltage on material removal rate and shape accuracy of EMM process. Micro-holes were drilled on stainless steel-304 plate and a strip of composite material using stainless steel electrode of diameter 380μm with insulated walls as tool. The experiments were conducted varying the voltage while keeping the current, pulse on/off time, electrolyte and electrolyte concentration at a constant level. The results were studied

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RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT:

DESIGN AND FABRICATION OF AUTOMATED TROLLEY

PRINCIPAL INVIGILATOR: T.Thangavel

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ABSTRACT

This project aims at developing a mechanism for straightforward transportation of masses over stairs. The requirement for such a system arises from regular necessities in our society. Devices like hand trolleys (single or double wheel trolley) square measure used to relieve the stress of lifting whereas on flat ground. However, these devices sometimes fail once it involves carrying the load over the steps. Keeping this concept in mind, the project tries to design a stair rising hand cart which may carry objects (up to 150kg) up the steps with less effort compared to carrying them manually by hand. It's conjointly a sincere plan to study the utility and importance of such a product. Many styles were envisioned that might enable a non industrial hand trolley to travel over stairs, curbs or uneven terrain whereas reducing the strain on the user.

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DEPARTMENT OF MECHANICAL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT:

EXPERIMENTAL INVESTIGATION AND FIBER LOADING ON MECHANICAL PROPERTIES OF CFF/WOOD DUST REINFORCED COMPOSITES

PRINCIPAL INVIGILATOR: V.Elango

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ABSTRACT

In this experimental investigation, the mechanical characterization and microstructure study of chicken feather fiber (CFF) and crumb rubber filled epoxy resin hybrid composite has been done. The surface of the fibers was treated with sodium hydroxide to improve the interphase bonding. Chicken feathers were taken in different weight percentages of 1, 3, 5 and 7. A composite was fabricated with epoxy resin using the hand lay-up technique. After conducting various mechanical tests in accordance with the ASTM standards, it was observed that 5 wt% of CFF recorded the optimum results. Hybrid composites were then fabricated with 5 wt% CFF and varying weight percentages of crumb rubber, i.e. 0, 0.5, 1, 1.5, 2 and 2.5. On the basis of mechanical testing conducted on hybrid composite, tensile strength, flexural strength and impact strength showed a significant improvement. The justification of trend was given through the microstructural tests, which were a scanning electron microscopy (SEM) and X-ray diffraction analysis. It was concluded that 1 wt% of crumb rubber with 5 wt% CFF hybrid composites showed the optimum results amongst various combinations. Thus, properties showed significant improvement in the case of hybrid composite as compared to pure fiber-based composite.

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RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT:

PERFORMANCE STUDY OF MICRO ECM PROCESS TO DRILL MICRO HOLES

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ABSTRACT

The increasing demand for compactness and more number of functional features in every products these days have made producers to attempt for newer machining techniques. Different types of micro-machining techniques are used for producing miniature parts and components. Micro machining refers to material removal from 1 μm to 999μm. Electrochemical machining is capable of machining a wide range of electrically conductive materials including tough and difficult-to-machine materials. This non-contact micro-fabrication process does not induce residual stress or cause tool wear. When applied to produce micro-features, it is referred as electrochemical micro-machining(EMM). In this attempt experiments have been conducted to investigate the influence of voltage on material removal rate and shape accuracy of EMM process. Micro-holes were drilled on stainless steel-304 plate and a strip of composite material using stainless steel electrode of diameter 380μm with insulated walls as tool. The experiments were conducted varying the voltage while keeping the current, pulse on/off time, electrolyte and electrolyte concentration at a constant level. The results were studied

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DEPARTMENT OF MECHANICAL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT:

EVALUATION OF MECHANICAL PROPERTIES FOR JUTE, COIR AND GLASS FIBRE REINFORCED WITH POLYMER MATRIX COMPOSITE

PRINCIPAL INVIGILATOR: K.Anand

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ABSTRACT

The demand of environmental friendly structural materials of high strength, less weight and low cost is increasing now-a- days. The main objective of present work is to develop such material in composites. The coir- jute-glass fibres reinforced polypropylene hybrid composites at different weight fractions (15%, 20% and 25%) are fabricated according to ASTM standards using injection moulding technique. The fabricated composites are tested for Tensile, Flexural and Impact properties using tensometer and impact testing machine. The final result of the various composite specimens is compared.

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DEPARTMENT OF MECHANICAL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT:

SOLAR POWERED CONVERSION OF SALT WATER INTO PURIFIED WATER

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ABSTRACT

The availability of drinking water is essential for the survival all of mankind. Adequate amount of water resources are available on our planet but very few of them can be used for the purpose of drinking. A number of water purification methods have been put forth by researchers to purify brackish water and sea water. As water purification processes require some sort of energy source, and with the advent of renewable sources of energy utilization in various fields, a thorough review of solar powered purification setups is essential. An effort has been made to review all the available research and technology for water distillation using solar energy in this research paper. It is found from the literature survey that, a number of research setups and devices are available but are currently not being used due to high initial setup costs and limited technological awareness in the society.

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RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT:

FUEL LESS HEAT ENERGY

PRINCIPAL INVIGILATOR: A.Natarajan

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ABSTRACT

Electricity is the soul of todays modern world, but generation of this energy has a cost. We the people of earth are paying the price of this energy by our deposits of fossil fuel. The major power generation technique is thermal power plant. The fuel utilized in warm force plant is coal. It is cheap and easily available, but this is the problem due to it's the problem due to its easy availability it is used at a very mass level worldwide. This is making the coal and other fossil fuel go extinct. According to research conducted by business standard .com, the fossil fuel such as coal will be depilated in 110 to 120 years. One of the most important sources of green energy is geothermal energy, but the problem while harnessing the geothermal energy is reaching at a proper depth in ground. Hence, we are presenting this paper on harnessing the geothermal energy from volcanos. We are trying to harness heat energy from lava and then generating electricity from that thermal energy. Our motto to develop this project is for social welfare.

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RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT:

DESIGN AND FABRICATION OF SOLAR ENERGY TRACKING SYSTEM

PRINCIPAL INVIGILATOR: M.Prasad

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ABSTRACT

This project encompasses the optimum utilization of solar energy through the use of a dynamic tracking system for different solar energy devices and application. The methodology of this project is the use of dynamic mechanism that electro mechanically controls the motion of the solar array with respect to the sun. The mechanical means of ensuring that the relative angular difference and speed between the solar module and sun position with respect to time is reduce to zero in value in no time so as to ensure optimum utilization of equivalent sun hour. The mechanical tracking and focusing system make use of a low speed electric motor, the design of a gear reduction system and an electronic program timer powered from the direct current generated from the solar panel.

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RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT:

DESIGN OF AUTOMATIC DRAIN GARBAGE CLEANER AND RECYCLING

PRINCIPAL INVIGILATOR: K.Ramachandran

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ABSTRACT

Now-a-days almost all the processes are being automatized but the drainage cleaning system in our country isstill completely manual. The proposed concept in this paper isto automatize the existingmanual drainage cleaning system that is existing in our country. The "Automatic Drainage Cleaning System" is intended to be used in the drains and sewer lines which are clogged by the plastic and floating debris. The solution proposed in this paper is to design a vehicle which is capable of collecting the plastic and floating wastes. This vehicle is based on concept of 'Mr. Trash Wheel'. The system consists of raspberry pi which acts as the brain by controlsthe entire process and wastes will be collected using a conveyor mechanism. Two motors will be used for the motion of system and for conveyor mechanism. The vehicle moves along drains in water collecting the wastesinto a bin and this bin will be monitored continuously using an ultrasonic sensor.

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RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT:

DESIGN OF AIR COMPRESSOR USING SLOTTED LINK MECHANISM

PRINCIPAL INVIGILATOR: S.A.Venkatesh

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ABSTRACT

The goal of this examination is to explore the kinematics movement of a Crank and Slotted Lever Quick Return system. The examination is to demonstrate that it is to be sure a speedy return component and to assess the expansion in proficiency this would offer if connected to a mechanical device. A component is a disentangled model, generally as a line chart, which is utilized to imitate the movement happening in a machine. The motivation behind this proliferation is to empower the idea of the machine. The reason for this proliferation is to empower the idea of the movement to be explored without the encumbrance of the different strong bodies which shape the machine components The different parts of the system are called connections or components.

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RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT:

FABRICATION OF FOUR WHEEL STEERING WITH THREE MODES CONTROL SYSTEM

PRINCIPAL INVIGILATOR: P.Mohanraj

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ABSTRACT

The most conventional and general steering arrangement is to turn the front wheels using a hand–operated steering wheel which is positioned in front of the driver. The four wheel three mode steering system is a modification for the present steering which is used for the improvement of easiness for vehicle handling. The four wheel three mode steering system assists driver by controlling the steering angle of vehicle's four wheels as the requirement of driver, for making the parking and handling at congested areas easier. For meeting the application the rear wheels steer in the opposite direction or in the same direction of the front wheels, allowing reduced turning radius or sliding of vehicle to sideways. .if we are able to transmit the motion that is given on steering wheel to the rear wheels and able to control like front wheels as our requirements, which is the basic idea of our project four wheel three mode In convertible four wheel steering with three mode operation three steering modes can be changed as needed which assists in parking at heavy traffic conditions, when negotiating areas where short turning radius is needed and in off road Driving.

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RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT:

DESIGN AND FABRICATION OF SOFT FLOW DYEING MACHINE

PRINCIPAL INVIGILATOR: T.Sathees

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ABSTRACT

Air flow dyeing machines resemble soft flow dyeing machines, with the difference being that the fabrics are circulated using an air stream instead of the water or dye liquor used in the case of soft flow dyeing, thereby reducing the water consumption. The principle of the air flow dyeing machine is based on the aerodynamic principle instead of hydraulics. Air technology is used to transport the fabric during dyeing, washing, and even in unloading. Multinozzle air flow dyeing machines offer higher productivity and drastically reduce the material to liquor ratio to 1:2.

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RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT:

FOLDABLE SLIDING GATE USING SENSOR

PRINCIPAL INVIGILATOR: S.Maniraj

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ABSTRACT

In this research work, an Automatic sliding door System using an infrared sensor was developed. It uses a sensor, a control unit & drive unit to open and close doors at the entrance of a public building. The primary aim of this research work is to learn in details about how the automatic door system works and to understand the concepts involved. The secondary aim is to fabricate a simple circuit model to show how the system works. The main activities involved in this work are the research done on how the automatic door works, sketching a detailed circuit & then fabricating a simple model.

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DEPARTMENT OF MECHANICAL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT:

HAND OPERATED CAN CRUSHER

PRINCIPAL INVIGILATOR: G.Sureshkumar

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ABSTRACT

This Paper consists of designing and fabrication of manually operated aluminium tin can crusher. A can crusher can be defined as “A device used for crushing aluminium cans for achieving 65% volume reduction and reduces transportation costs”. Generally, crusher is made up of steel. [11] The main aim of a can crusher is to smash an empty aluminium can into the smallest unit possible. Anyone who drinks a couple of sodas a week may never see the need to compact the cans, but others who are heavy drinkers may find these devices very helpful. Canteens, restaurants, bars, catering halls, cinema halls and recycling plants are places where a can crusher is pretty much a must. Can crusher are the most efficient, convenient, space saving and easy way to reduce your aluminium waste while fulfilling recycling duty. They are convenient, fun, easy to use and friends of the environment. Crush the can and save the space, time and energy.

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DEPARTMENT OF MECHANICAL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT:

DESIGN AND ANALYSIS OF SQUARE HOLE DRILLING MACHINE

PRINCIPAL INVIGILATOR: P.Sathish Kumar

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ABSTRACT

This paper discusses the mechanical design and simulation of a square hole producing tool based on Reuleaux Triangle. The main aim of this paper is to investigate how a circular motion can be converted into a square motion by purely a mechanical linkage; an application of which is to construct a special tool that drills exact square holes. A geometrical construction that fulfills the laid objective is Reuleaux Triangle. Additionally, for this geometry to work from a rotating drive (such as a drill press) one must force the Reuleaux triangle to rotate inside a square, and that requires a square template to constrain the Reuleaux triangle as well as a special coupling to address the fact that the center of rotation also moves. The practical importance of this enhancement is that the driving end can be placed in a standard drill press; the other end, when restricted to stay inside the ambient square, will yield a perfectly square locus and this can be turned into a working square-hole drill. The developed design had a success rate of 98.7% i.e it removed approximately 98.7% area of the desired square. The fabrication of the developed design in this paper has been done on Steel (EN8) that is ideal for soft surfaces but if harder materials are used, hard surfaces application is also possible.

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RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT:

DESIGN AND FABRICATION OF LADDER ELEVATOR

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ABSTRACT

Our project mainly intends to fabricate an electrically operated mechanical ladder actuated by electrical cum mechanical systems. Conventional method of using rope, scaffold lift etc., in getting to a height encounter a lot of limitations like time, energy consumption, portability, storage, cost-effectiveness etc. The electro mechanical scissor lift ladder overcomes these shortcomings. It will be an important tool which can probably be used in different kinds of job such as changing of electrical fittings like fans & lights, painting walls etc. The device is limited to an average load of 120 kg and will have maximum lift of around 6-7 meters and must be operated on a flat surface. But however we are planning to fabricate a scaled version prototype of the proposal. Our project model consists of components such as a rigid base, working platform, scissor lift mechanism, and electro mechanical actuation system. The rigid base forms the base of the system, fixed arm of scissor lift is connected firmly to one end of the base, while the other movable arm of the scissor, slides through the shaft link in base provided on of the nut meshed with lead screw. In order to obtain the desired motion electro mechanical actuation system (i.e. a lead screw passing through the middle of the base has its external threads in communication with the internally threaded nut affixed to the movable arm) is used. Thus by Screw Jack principle, rotary motion of screw is converted to linear motion of movable arm. As the lead screw is rotated in first angular direction scissor lift mechanism vertically extends towards the expanded condition whereas reverse angular direction vertically contracts towards the retracted condition and thereby causes movement of the work platform towards the lowered position. The semi-automation feature enables the person working on the platform to easily move the entire ladder to left or right by operating a gear wheel wiper motor in mesh with the gear mounted on the wheel shaft by appropriate electrical systems which can drag the ladder over a flat surface

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RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT:

DESIGN AND FABRICATION OF HYBRID VEHICLES

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ABSTRACT

The traditional internal combustion engine made economic sense when oil was cheap and plentiful and the effects of burning fossil fuels and pollution were not understood. The environmental damage from internal combustion engine is compounded by the problem of air pollution. As well as carbon dioxide emissions, cars also produce dangerous chemicals such as nitrogen oxides (NOX), sulphur oxide (SOX) and carbon monoxide emissions. The problem of lost energy, as well as the need to reduce carbon emissions and dangerous pollutants, has spawned the industry to attempt to meet these challenges, whilst sticking to the traditional petrol and diesel run engine. Indeed a lot of these technologies, whether it be turbo chargers to improve fuel efficiency, catalytic converters that can remove dangerous gases or drive train technologies that addresses problems of wasted energy.

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RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT:

EXPERIMENTAL STUDY ON THE VIBRATION CHARACTERISTICS ON THE CRYOGENIC TREATED AND NON TREATED ALUMINIUM

PRINCIPAL INVIGILATOR: R.Duraisamy

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ABSTRACT

Aluminum Metal Matrix Composites (AMMCs) are widely used in many industries for its high strength as well as stiffness ratio with low weight characteristics. There are various advanced manufacturing process is available for machining these types of composites. Among these processes Electric Discharge Machining (EDM) is a unique machining process for machining of composite materials. In this study, the effect of EDM process parameters such as pulse on-time, pulse off-time, discharge current and gap voltage has been investigated on MMC (AA6063-12%SiC-5%Gr) by using cryogenic treated brass electrode. Experiments are conducted using three types of electrode namely untreated brass electrode, 12 hours cryogenic treated brass electrode and 24 hours cryogenic treated brass electrode. The machining characteristics namely, Delamination Factor (D.F), TWR and MRR were studied. Experiments were conducted by using one-parameter varying approach. Based on the conducted experiments the cryogenic treated brass electrode produces more D.F. 24 hour's cryogenic treated brass electrode produces higher MRR compared to other electrodes. The TWR was found to be lesser for 24 hours cryogenic treated brass electrode.

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RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT:

FABRICATION OF MULTI OPERATION MACHINE

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ABSTRACT

"Multi Operational Mechanical Machine "This work was mainly carried for manufacturing and fabrication industries. The machine which is used to produce the product with high accuracy and quality and produce the goods in an economical manner. It makes the inventory cost less. The multipurpose machine has performed different operations simultaneously with high possibility. The scotch yoke mechanism which is attached with the main drive shaft directly attached then it is used for different operation. Number of operations has been performed by a single drive system. The main focus of the work is to reduce power usage and increase the productivity reduced floor space. Portability is an important quality in any machine in today's world; every field of science and engineering has got portability as one of its most important advancements. Therefore, the machine we have designed satisfies this principle with respect to the manufacturing industry.

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DEPARTMENT OF MECHATRONICS

RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT:

FABRICATION OF AIR OPERATED TWO WHEELER

PRINCIPAL INVIGILATOR: Mr.C.Surshkumar

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ABSTRACT

This project work deals with the air engine is a pneumatic actuator that creates useful work by expanding compressed air. Many air engines improve their performance by heating the incoming air, or the engine itself. There is currently some interest in developing air engine. Our engines have been proposed for eco-friendly and more economical. A compressed-air vehicle is powered by an air engine, using compressed air, which is stored in a tank. Instead of mixing fuel with air and burning it in the engine to drive pistons with hot expanding gases, compressed air vehicles (CAV) use the expansion of compressed air to drive their pistons. Compressed air engine is a type of motor which does mechanical work by expanding compressed air. Pneumatic motors generally convert the compressed air energy to mechanical work through either linear or rotary motion. Linear motion can come from either a diaphragm or piston actuator, while rotary motion is supplied by either a vane type air motor, piston air motor, air turbine or gear type motor. Compressed air propulsion may also be incorporated in hybrid systems, e.g., battery electric propulsion and fuel tanks to recharge the batteries. This kind of system is called hybrid-pneumatic electric propulsion.

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RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT:

AMORPHOUS PERSONAL TRANSPORTER

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ABSTRACT

The "**Amorphous Personal Transporter**" is two wheels parallelly placed self-balancing robot that is mainly used for transportation purposes. A self-balancing two wheeled electrically powered personal transporter based on inverted pendulum dynamics is to be designed in order to reduce the pollution and the space occupied by the conventional vehicles, with an additional feature of wireless control through Bluetooth module.

As the device starts functioning, it initially starts finding the tilt angle of the transporter from the IMU. Then the mode of operation is selected either as drive mode or autonomous mode. In drive mode, the directions are provided by manually by the person riding it. Autonomous mode is predefined using specific coordinates and when this mode is selected, the transporter traces that path.

The concept of creating a personal transporter was developed from the thought that spacing would become a greater issue in the future. These kinds of two wheeled electric powered personal transporters were proposed due to the concern on environment and constantly increasing population around the globe. Since these transporters are electrically powered there is no pollution while using these kinds of vehicles. Also, they are small and occupy lesser space when compared to conventional fossil fuel powered vehicles. Due to their small height and compact design they can be parked/stacked one above the other, thereby reducing the parking space for the vehicles.

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RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT:

AUTOMATIC LOADING AND PACKING SYSTEM IN ROTARY KILN DIVISION

PRINCIPAL INVIGILATOR: Mr.S.vijayakumar

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ABSTRACT

The calcination of raw magnesite is done in rotary kiln division. The material moves from primary crusher zone to burring zone and then to cooling zone from where it is discharged in wheel borrows. During heating raw magnesite losses all the carbon dioxide and becomes magnesium oxide which is light in weight. The product in size 0 to 40mm lumps is packed in new gunny bags of 400kg s. Each DBM is crushed into 200 mesh power by pulveriser based on the customer's requirements packed in HDPE bags. The raw magnesite receipt from mines, the hopper is created after they filled the raw magnesite in hopper. The bucket elevator fully rolling system, they rotate dead burn magnesite filled and landed to rotary kiln division in raw magnesite. They had number of horizontal kiln has attached by conveyor. The conveyor has easily landed in raw magnesite to kiln. As usual the shaft kiln process has run, it improves reduce of human labour physical work, output is high. While in packaging section we implement the automatic packing system. In the packing system consist of sensors.

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RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT:

AUTOMATIC TYRE INFLATION SYSTEM

PRINCIPAL INVIGILATOR: S.Vinoth

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ABSTRACT

Driven by studies that show that a drop in tyre pressure by just a few PSI can result in the reduction of gas mileage, tyre life, safety, and vehicle performance, we have developed an automatic, self-inflating tyre system that ensures that tyres are properly inflated at all the times. Our design proposes and successfully implements the use of a portable compressor that will supply air to all four tyres via hoses and a rotary joint fixed between the wheel spindle and wheel hub at each wheel. The rotary joints efficiently allow air to be channelled to the tyres without tangling of hoses. With the recent oil price hikes and growing concern of environmental issues, this system addresses a potential improvement in gas mileage; tyre wear reduction; and an increase in handling and tyre performance in diverse conditions. Proper tyre inflation pressure improves fuel economy, reduces braking distances, improves handling, and increases tyre life, while under inflation creates overheating and can lead to accidents. Approximately 3/4 of all automobiles operate with at least one underinflated tyre. The main causes of under inflation are natural leakage, temperature changes, and road hazards. Drivers typically do not check tyre pressure unless they notice unusual vehicle performance. Visual checks are often insufficient to determine under inflation. So we used a led display to indicate the current pressure in the tyres. It is also used to change the tyre pressure to the desired level.

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RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT:

AUTOMATIC SYNCHRONIZATION OF 210 MW GENERATORS TO 230 KV TRANSMISSION LINE

PRINCIPAL INVIGILATOR: V.K. Gobinath

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ABSTRACT

Automatic synchronizers are widely employed to connect more than one synchronous generator. The main task of a synchronizer is to capture the voltage, frequency and phase differences between the generators accurately and rapidly. One of them is called the circuit control breaker, it is responsible for closing the circuit breaker between the generators. The other two modules are assigned to capture the voltage, frequency and phase differences for each generator due to a reference signals, and control the governor of the generators to much the acceptable limits. The probability of false synchronization decision is minimized which is the main contribution of the project, therefore, the reliability of the synchronization is improved. The developed automatic synchronization unit is fast, cost effective, reliable and precise to be used for monitoring, measuring and parallel operations of the synchronous generators. This paper describes a smart automatic synchronizing system that can connect multiple generators in an industrial power system during islanded and utility -connected modes via six different bus - tie and utility tie breakers.

The real -time digital simulation of the model power system allowed for a better understanding of system functionality and provided a valid test in terms of meeting the specification of the design, which reduced the amount of labor and expense during commissioning of the system.

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RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT: FREE HAND CNC PLOTTER ROBOT

PRINCIPAL INVIGILATOR: S.Mohankumar

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ABSTRACT

Due to the rapid growth of technology the usage and utilization of CNC machine in industries are increased. The fabrication of low cost CNC machine is used to reduce cost and complexity of machine. This paper deals with the design of automatic mini CNC plotter machine for drawing and writing. The Idea behind our project is to design based on low cost CNC system the lower cost is achieved by incorporating features of PC with ATMEGA 328 controller in an arduino. We have use an G code for whole system operation. G code is nothing but a language in which people tell computerized machine tools 'How to make something'. The How is defined by instructions on where to move & how fast to move.This setup of hardware with a combination of G-code gives better accuracy and reduces the work load.

Keywords: CNC, Arduino microcontroller, part program, interpolator.

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RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT:

DESIGN OF MARINE ROBOT FOR REMOVING OIL FROM SEA WATER

PRINCIPAL INVIGILATOR: Ms.M.Gokila

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ABSTRACT

This project involves in collecting the waste oil and scraps present in the surface of the ocean. Now a days the pollution in the ocean is comparatively high and the aquatic life in the ocean is highly disturbed by emitting the waste oils and scraps in the ocean which in turn pollutes the ocean ecology in order to prevent the pollution of ocean and save the life of aquatic organism this robot is designed. The robot consist of a rotating collector which in turn collects the oil and stores in the oil sump. The robot can be controlled through Bluetooth. It is can be interfaced with any android system. The device is monitored and controlled by using Arduino.

The robot is partially submerged in the surface of the water. Since the robot is controlled by Arduino the accuracy is efficient and can be controlled easily. The robot is powered by using 12V battery so the robot can be easily taken to place to place. The robot uses tow pole electric motor so the accuracy is high comapritively. The robot is balanced by the air which is present in the two sides which makes the robot to be partially submerged on the surface of the water. As the rotator placed surface of the water the oil and scarps are sufficiently collected. By using this robot the aquatic life can be saved and the environment is protected. Since, the robot is portable it can be taken the place where deposition of the oil is high as the robot is motored by Arduino the accuracy is high oil. The robot does not need any expert assistance and the parts of the robot can be replaced easily.

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RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT:

PLC CONTROLLED WASTAGE SEGREGATOR USING CAM SENSOR

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ABSTRACT

PLC controlled wastage segregator uses individual sensors like capacitive, proximity for detecting the waste. Instead of using a number of sensors we have used a single camera sensor. Today the amount of economic waste that is generated is so large that if it is not treated properly before dumping it will cause damage to the environment, humans and animals drastically on the whole. Economic wastes can be classified into several types. Some of the wastes like plastic, metal, glass can be reused and recycled. The wastes need to be separated based on certain criteria. In earlier days the wastes were segregated manually. Manual segregation was time consuming and it was not as accurate. But in recent years automatic segregation of waste is carried out that does all the separation processes accurately and in a faster manner.

PLC based waste segregator detects and segregates the waste automatically. Various sensors have been used till date for detecting various wastes like proximity, capacitive and inductive. In our project we are using a single camera sensor that detects the waste and segregates them accordingly. A camera sensor is a sensor that detects and conveys the information that constitutes an image. Image processing is carried out by the sensor. Image processing can be done by two methods. They are MATLAB and Python. We have used MATLAB programming for image recognition. The camera sensor detects the wastes on the conveyor belt and start the rotation of the conveyor belt, then the wastes are separated using a PLC.

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RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT: POWER DRIVE ASCENDER

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ABSTRACT

Power Drive Ascender which is capable of high speed and energy efficient Vehicle. We consider as practical, because of its high stability which comes from the large supporting leg polygon and the low centre of gravity. However, in previous researches, the speed and the energy efficiency is lower than a mammal-type quadruped robot. Since cost of transport (COT) can be reduced by increase of walking velocity, we decided to design a fast ascender. For a lightweight and compact leg, the right-angle type servo driven mechanism is adopted to the robot. To confirm its performance, several experiments were carried out and the robot walking was achieved. Finally, we compared the performance of this robot with other quadruped robots, and confirm that its performance is almost same level as mammal-type quadruped robots.

Power Drive Ascender use the ATmega328 Microcontroller for the operation of the entire device. This microcontroller includes Atmel's ATmega328 Microcontroller with 8kb flash memory working at 16MIPS, On-board LCD interface (it can also be used for any other general purpose application), On-board Motor Driver for connecting 12 Servo motors, On-board 5v regulated power supply, 12 MHz external crystal, Exposed all 21 I/O pins, Exposed 6 channel I/O pins for ADC with 5V/1A power supply, Exposed 8 I/O channels for sensors and other peripherals with 5V/1A power supply, One tact switch for external input and one tact switch for reset, Four test LEDs for status and debugging purpose, Two supply indicator LEDs, Dual power supply through DC source (6V to 16V) or USB powered, On board USB programmer, Exposed ISP pins for programming, Separate power supply option for microcontroller and motor driver.

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RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT:
SECURITY BASED BUS AND STUDENTS

PRINCIPAL INVIGILATOR: R. Arunbabu

CO-PRINCIPAL INVIGILATOR: V.K. Gobinath

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ABSTRACT

Now days, the amount of crime over kids is increasing day by day, the implementation of College Security System(CSS) via RFID to avoid crime, outlaw activates by students and scale back worries among folks. The projected system created smart use of a preferred technology that mixes a Smartphone application with a controller. This may be straightforward to form and cheap compared to others. The project is that the combination of latest Technology victimization RFID, GPS, GSM and Android mobile. The device is embedded within a vehicle whose position is to be determined and half-tracked in time period. A controller is employed to manage the GPS and GSM/GPRS modules. The vehicle trailing system uses the GPS module to urge geographic coordinates at regular time intervals. By victimization RFID technology its straightforward track the scholar therefore enhances the protection and safety in designated zone. It also sends the pick-up and drop-off location of the scholar to their parents. Therefore the GPS/GSM system mechanically sends information (SMS / Phone Call) to their folks. That the scholar arrived to Bus/Campus safely.

Keywords –Vehicle trailing, Controller, RFID technology, GSM, GPS and SMS.

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RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT:
SPACE DETECTION FOR PARKING YARDS

PRINCIPAL INVIGILATOR: S.Rajeshraja

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ABSTRACT

In now a days problem faced in major metropolitan areas, is the search for parking space. In this paper, we proposed a novel way for automatic parking lots detection looking for automatic parking system but it more expensive so we works smart reduce cost of the parking system. Normally we can see in the multiplexes,cinema halls,large industries,and function halls there is a problem they have to go and search which line is empty and which line having a place to park the vehicle.so we provide a RADIO FREQUENCY SIGNAL in parking area through transmitter and receiver.Implementation issues including parking detection,reservation guarantee and vehicle to infrastructure or infrastructure to vehicle communication are resolved. Automatic parking is an autonomous car-maneuvering system that moves a vehicle from a traffic lane into a parking spot to perform parallel, perpendicular or angle parking. The automatic parking system aim to enhance the comfort and safety of driving in constrained environments where much attention and experience is required to steer the car. The parking maneuver is achieved by means of coordinated control of the steering angle and speed which takes into account the actual situation in the environment to ensure collision-free motion within the available space. The car is an example of a nonholonomic system where the number of control commands available is less than the number of coordinates that represent its position and orientation.One of the first assistance systems for car parking was manual. It used four jacks with wheels to raise the car and then move it sideways into the available parking space.The main purpose of doing the project is to reduce human interface on vehicle parking. Thus avoiding the human errors on parking

Keywords: RF transmitter, RF receiver,Object detection sensor, Arduino

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DEPARTMENT OF INFORMATION TECHNOLOGY

RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT

CLIENT BASED ADAPTIVE LOAD BALANCE IN WEB SERVER

PRINCIPAL INVIGILATOR: MRS.S.LAVANYA

CO-PRINCIPAL INVIGILATOR: MR.B.VENKATESAN

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ABSTRACT

The growth of Internet services during the past few years has increased the demand for scalable distributed computing systems. Ecommerce systems concurrently serve many clients that transmit a large, number of requests. An increasingly popular and cost effective technique to improve server performance is load balancing, where hardware and or software mechanisms decide which server will execute the client request. Load balancing mechanisms distribute client workload among server nodes to improve overall system responsiveness. Load balancers have emerged as a powerful new technology to solve this. This paper focuses on a new generation of adaptive/intelligent dynamic load balancing technique, which based on technology and can be practical in application servers. The paper discusses in detail both the theoretical model of load balancing and its practical realization. The effectiveness of the new balancing method will be demonstrated through exact measurement results compared with former traditional non-adaptive methods.

Keywords: Distributed systems, OpenFlow based Networks, Adaptive Load Balancing, Application server,

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DEPARTMENT OF INFORMATION TECHNOLOGY

RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

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CLIENT BASED ADAPTIVE LOAD BALANCE IN WEB SERVER

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ABSTRACT

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DEPARTMENT OF INFORMATION TECHNOLOGY

RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT

LIFE TIME AND ENERGY HOLE EVOLUTION ANALYSIS IN DATA GATHERING WIRELESS SENSOR NETWORK

PRINCIPAL INVIGILATOR: MR.R.JAYAVADIVEL

CO-PRINCIPAL INVIGILATOR: MR.N.SIVAN

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ABSTRACT

Network lifetime is a crucial performance metric to evaluate data-gathering wireless sensor networks (WSNs) where battery-powered sensor nodes periodically sense the environment and forward collected samples to a sink node. In this project, an analytic model is proposed to estimate the entire network lifetime from network initialization until it is completely disabled, and determine the boundary of energy hole in a data-gathering WSN.

Specifically, the traffic load is theoretically estimate, energy consumption, and lifetime of sensor nodes during the entire network lifetime. Furthermore, the temporal and spatial evolution of energy hole were investigate, and apply an analytical results to WSN routing in order to balance the energy consumption and improve the network lifetime.

Extensive simulation results are provided to demonstrate the validity of the proposed analytic model in estimating the network lifetime and energy hole evolution process. The keywords are Wireless Sensor Network, Network Lifetime, Energy Hole, Energy Efficiency and Routing.

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DEPARTMENT OF INFORMATION TECHNOLOGY

RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT

LIFE TIME AND ENERGY HOLE EVOLUTION ANALYSIS IN DATA GATHERING WIRELESS SENSOR NETWORK

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ABSTRACT

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DEPARTMENT OF INFORMATION TECHNOLOGY

RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT

IOT BASED AGRICULTURE MONITORING SYSTEM USING WI-FI ESP8266 MODULE

PRINCIPAL INVIGILATOR: MRS.N.HEMALATHA

CO-PRINCIPAL INVIGILATOR: MRS.J.SINDHUJA

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ABSTRACT

In today's era, technology can enhance human life. Technology is evolving decade by decade. Automation was a science fiction earlier but not today. By combining latest technology with our farm field, we can build extraordinary agriculture system. The main intention is to develop an automation to supply water for home gardening and irrigation system in farm fields. It is done with the help of soil moisture sensor, temperature sensor, humidity sensor and methane sensor which are fixed at root area of the plants. The values detected by these sensors are transmitted to base station. The key aim of base station is to collect data from field station and upload those values in internet by using Wi-Fi technology also notify user about any peculiar circumstances like low moisture and high temperature. This irrigation system has been approved under different climates with various levels of moisture contents especially the red chilly weeds. Hence the home gardening is the hobby of many people and also same work for the irrigation system in the agriculture fields.

KEYWORDS: IoT, Arduino, Wi-Fi Module ESP 8266, Sensors.

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DEPARTMENT OF INFORMATION TECHNOLOGY

RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT

IOT BASED AGRICULTURE MONITORING SYSTEM USING WI-FI ESP8266 MODULE

PRINCIPAL INVIGILATOR: MRS.J.SINDHUJA

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ABSTRACT

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DEPARTMENT OF INFORMATION TECHNOLOGY

RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT

ACHIEVING SHOULDER SURFING RESISTANT GRAPHICAL AUTHENTICATION

PRINCIPAL INVIGILATOR: MRS.N.HEMALATHA

CO-PRINCIPAL INVIGILATOR: MRS.M.PUSHPALATHA

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ABSTRACT

The usual text password methods are exposed to shoulder surfing, so many shoulder surfing resistant graphical password methods have been deployed. However, most of the users are feeling more comfort with textual passwords over pure graphical passwords. Unfortunately, all the existing text-based shoulder surfing resistant graphical password schemes are not secure and efficient enough. So in this shoulder surfing method is an improved graphical password scheme for shoulder surfing resistant authentication by using colors in various sectors. In the scheme, the user can able to login to an application in very simple and effective manner. Here these method analyze the security and usability of the proposed graphical scheme, and prove the resistance of the scheme to accidental login and shoulder surfing.

Authentication based on passwords is used largely in applications for computer security and privacy. With web applications and mobile apps piling up, people can access these applications anytime and anywhere with various devices. This evolution brings great convenience but also increases the probability of exposing passwords to shoulder surfing attacks. Attackers can observe directly or use external recording devices to collect users' credentials. With a one-time valid login indicator and circulative horizontal and vertical bars covering the entire scope of pass-images, PassMatrix offers no hint for attackers to figure out or narrow down the password even they conduct multiple camera-based attacks.

KEYWORDS: Shoulder Surfing Attack, Graphical Authentication, Registration, Login, Password

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DEPARTMENT OF INFORMATION TECHNOLOGY

RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT

ACHIEVING SHOULDER SURFING RESISTANT GRAPHICAL AUTHENTICATION

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CO-PRINCIPAL INVIGILATOR: MRS.N.HEMALATHA

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DEPARTMENT OF INFORMATION TECHNOLOGY

RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT

MOBILE LOCATION ALARM USING ANDROID

PRINCIPAL INVIGILATOR: MR.V.SARAVANABHAVAN

CO-PRINCIPAL INVIGILATOR: MR.S.SARAVANA KUMAR

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ABSTRACT

In current system. alarms are set for particular time. Many times there are situations where the alarm/reminder is based on your current location and not based on time. The Mobile application installed on the mobile can give an alarm based on a particular location. Additionally. the application would help user to find out how far the user is away from particular reminder location on the map. Location based services are essential components of many location-based applications.

Location based alarm represent an emerging location-aware. which can propagate information of location to the right users at the right time and the right place. It reminds the user about the location when the user enters some predefined location of interest in the future. All the user needs to have is the mobile phone with android platform. and then the user can select the destination and find the destination on the Google map. The user can even choose from preselected major locations or recently selected locations.

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DEPARTMENT OF INFORMATION TECHNOLOGY

RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT

MOBILE LOCATION ALARM USING ANDROID

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DEPARTMENT OF INFORMATION TECHNOLOGY

RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT

RFID BASED ATTENDANCE AND INTRUSION IDENTIFICATION SYSTEM

PRINCIPAL INVIGILATOR: MR.B.PRABUSHANKAR

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ABSTRACT

Educational institutions are worried about the regularity of the students. Attendance plays a major role in Student's overall academic performance. The old fashioned traditional method of taking attendance by asking to raise their hands, calling their names and signing on the piece of paper is very time consuming and also it is less efficient. Radio Frequency Identification (RFID) Based attendance and Intrusion Detection System is a remedy to address and also solve the problem. A system that can work in an automated way and capture student's attendance by showing the student card at the RFID Tag Reader and save all the upcoming troubles. The application of RFID enables student attendance monitoring and maintenance as developed and deployed in this study is capable of trashing the time which is wasted during manual entry of attendance and an opportunity for the educational administrators to capture classroom statistics for allocating of appropriate attendance data entry and for further managerial decisions.

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DEPARTMENT OF INFORMATION TECHNOLOGY

RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT

AUTOMATED ELECTRICITY BOARD READING AND BUILDING SYSTEMS

PRINCIPAL INVIGILATOR: MR.B.PRABUSHANKAR

CO-PRINCIPAL INVIGILATOR: MRS.R.SANTHIYA

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ABSTRACT

In today's competitive electric utility marketplace, reliable and real-time information becomethe key factor for reliable delivery of power to the end-users, profitability of the electric utility and customer satisfaction.Power Billing System is an Executive Information System that determines the consumed power per unit time and performs its computation based on the sale rate of power per unit time and other parameters. The importance of Power Billing System cannot be over emphasized because its calculation reflects the exact power consumption for the prospective consumers, and in monitoring the billing details of the electricity consumers. It provides an environment to maintain the consumer details starting from getting new connection, receiving bill, payments etc; access to performance information by the management. It functions on Internet domain and ensure timely availability of status parameters.

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DEPARTMENT OF INFORMATION TECHNOLOGY

RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT

AUTOMATED ELECTRICITY BOARD READING AND BUILDING SYSTEMS

PRINCIPAL INVIGILATOR: MRS.R.SANTHIYA

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ABSTRACT

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DEPARTMENT OF INFORMATION TECHNOLOGY

RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT

CLASSIFICATION OF SKIN CANCER USING GRAY LEVEL CO-OCCURRENCE MATRIX BASED FEATURE EXTRACTION

PRINCIPAL INVIGILATOR: MRS.R.SANTHIYA

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ABSTRACT

Skin cancer is the deadliest form of cancers in humans. Skin cancer is commonly known as Melanoma. Skin Cancers are of two types- Benign and Malignant Melanoma. Melanoma can be cured completely if it is detected early. Both benign and malignant melanoma appears similar hence it is very difficult to differentiate both using fuzzy inference system. This is a main problem with the early skin cancer detection. Only an expert dermatologist can classify which one is benign and malignant. The proposed scheme uses Artificial Neural Network (ANN) classifier approach for Skin Cancer detection. The extraction of texture features has been achieved by using Gray Level Co-occurrence Matrix (GLCM).These features are given as the input to the Artificial Neural Network Classifier. The experimental shows whether the given data set is cancerous or non-cancerous.

Keywords: Gray Level Co-Occurence Matrix, Angular Second Moment, Artifical Neural Network

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DEPARTMENT OF INFORMATION TECHNOLOGY

RESEARCH PROJECT

ACADEMIC YEAR: 2016-2017

TITLE OF THE PROJECT

OPPORTUNISTIC VOID AVOIDANCE ROUTING PROTOCOL FOR UNDERWATER SENSOR NETWORKS

PRINCIPAL INVIGILATOR: MRS.S.SINDHUBALA

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Abstract:

An Underwater Sensor Network (UWSN) has many unique features that makes it different from terrestrial network. This includes lower bandwidth, longer propagation delay, dynamic topology, high error rate, and energy constraint. To overcome the limitations of such an environment, opportunistic routing has recently attracted much attention due to its ability to improve the performance of UWSNs in terms of packet delivery ratio and energy saving. With the aid of opportunistic data routing, underwater sensors can collaboratively route a packet towards the destination which is a more adequate approach for sparse and lossy channels. In this paper, we propose a new routing protocol, called Opportunistic Void Avoidance Routing (OVAR), to address the void problem and high bit error rate without relying on any positioning system. OVAR is able to efficiently bypass all kinds of void areas with the lowest possible cost (including energy and delay) while prioritising the group of candidate nodes with the highest packet advancement. Given the density of neighbours (sparse or dense), each forwarding node is able to hold a trade-off between packet advancement and energy consumption by adjusting the number of nodes in its forwarding set. OVAR is also able to select the forwarding set in any direction from the sender without including any hidden node. The results of our extensive simulation study show that OVAR outperforms other protocols in terms of packet delivery ratio, energy consumption, and average end-to-end delay.

Academic Year 2015-2016

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DEPARTMENT OF CIVIL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR; 2015-2016

TITLE OF THE PROJECT: PLANNING, ANALYSIS, DESIGN OF AN SCHOOL BUILDING

PRINCIPAL INVIGILATOR: P.KALIMUTHU

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1 ABSTRACT

Buildings are the important indicator of social progress of the county. Daily new techniques are being developed for the construction of houses economically, quickly and fulfilling the requirements of the community engineers and architects to do the design work, planning and layout, etc, of the buildings.

Multi-story buildings aim to increase the floor area of the building without increasing the area of the land the building is built on, hence saving land and, in most cases, money (depending on material used and land prices in the area).

Multi-storey construction comprises a number of different elements. Columns transfer the vertical loads down through the structure to the foundations. Primary beams will be located on the standard grid and transfer the floor loading directly to the columns. Secondary beams are often used intermediate to the primary beams to reduce the span and therefore the construction depth of the chosen floor system.

And I have undergone training on the study of construction of the Multi-storied building.

Commercial cum Residential complex is constructed over an area.

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DEPARTMENT OF CIVIL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR; 2015-2016

TITLE OF THE PROJECT: PLANNING, ANALYSIS, DESIGN OF A REGISTRAR OFFICE BUILDING

PRINCIPAL INVIGILATOR: P.KALIMUTHU

CO-PRINCIPAL INVIGILATOR: Dr.S.PRABAHARAN

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ABSTRACT

The report is to accompany the "PLANNING ANALYSIS AND DESIGNING OF A REGISTRAR OFFICE BUILDING". This building is having ground floor area of 150 sq.m and it is located at Namakkal City.

The facilities available in office building are Registrar room, safety locker, lunch room, stationary room, computer room, record room, visitor hall, storage room, air conditioning and rest room.

For detailing and drafting Auto-CAD software is used and analysis of structures done by manually.

Live load & dead load are considered. The code books used are IS 456:2000, IS 875(Part I & II) for column design use SP16 code book.

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DEPARTMENT OF CIVIL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR; 2015-2016

TITLE OF THE PROJECT: PLANNING, ANALYSIS, DESIGN OF MULTISTORIED RESIDENTIAL BUILDING

PRINCIPAL INVIGILATOR: P.KALIMUTHU

CO-PRINCIPAL INVIGILATOR: R.SATHIYARAJ

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ABSTRACT

This report discusses on the design of **a multistoried building**. This mainly includes the analysis and design of the building. The load conditions as per IS875. The structure's such as column, slab and beam are designed for bending, shear and deflection limit.

The Plan, Elevation and Section are drawn using Auto CAD. Design is carried out manually using Limit state method based on IS456 -2000. And detailing was done for structural elements as per SP13.

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DEPARTMENT OF CIVIL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR; 2015-2016

TITLE OF THE PROJECT: PLANNING, ANALYSIS, DESIGN OF AN RESIDENTIAL BUILDING

PRINCIPAL INVIGILATOR: P.KALIMUTHU

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ABSTRACT

The report is to accompany the "**PLANNING, ANALYSIS AND DESIGN OF RESIDENTIAL BUILDING**". This building is having plinth area of 270m². The building is a framed structure with flat roof of 120mm thick.

The building is consisting square R.C.C column of 300mm x 300mm size with square type footing. The size of footing is 2000mm x 2000mm with 400mm uniform thickness. Below the footing, a 100 mm thick P.C.C 1:5:10 is provided as base concrete. The total depth of foundation is 1800mm below ground level. The wall thickness is 230mm with Ist class bricks. The height of ceiling is 3.5m from floor level.

In this plan portico,bed room, living hall, dining room, kitchen, wash room, pooja room, toilets, bath, staircase are provided.

Necessary Roof beams and lintel beams are provided as per design, two-way slab is provided for a thickness of 150mm. The overall depth of beams is 500mm as per the design.

The floor is finished with C.M 1:3mm thick over a base course of P.C.C 1:5:10, 130mm thick. Wooden doors and windows are provided with two coats of painting. Two coats of white washing are applied over one priming coat over the plastered surface of brick work.

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DEPARTMENT OF CIVIL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR; 2015-2016

TITLE OF THE PROJECT: EXPERIMENTAL INVESTIGATION ON PARTIAL REPLACEMENT OF CEMENT BY GROUND GRANULATED BLAST FURNACE SLAG AND FULLY REPLACEMENT OF SAND BY QUARRY DUST

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ABSTRACT

Concrete is a widely used material in the world. Based on global usage, it is placed at second position after water. Fine aggregate is an essential component of concrete. The most commonly used fine aggregate is natural river (or) pit sand.

The global consumption of natural sand is very high due to the extensive use of concrete. In such situation quarry waste fine aggregate could be an alternative of natural sand Ground granulated blast furnace slag (GGBFS) as partial replacement of cement in concrete improves the properties of fresh and hardened concrete. GGBS is used to make durable concrete structures in combination with OPC and or pozzolanic materials In this project experimental investigation has been undertaken to investigate the strength of quarry dust replaced to the Sand of used in concrete along with various percentages of GGBS The GGBS were replaced upto 50% & quarry dust has been replaced of 100% in sand material Test will conducted on cubes, cylinder and beam to study compressive, split tensile, flexural strengthof concrete made of quarry dust and GGBS

PAAVAI ENGINEERING COLLEGE,

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DEPARTMENT OF CIVIL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR; 2015-2016

TITLE OF THE PROJECT: ENHANCEMENT OF PROPERTIES OF CONCRETE BY OPTIMIZING THE PROPERTIES OF HYBRID MINERAL ADMIXTURE

PRINCIPAL INVIGILATOR: K.ELAIYARAJA

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ABSTRACT

Concrete is the most widely used construction material in India with annual consumption exceeding 100 million cubic meters. It is well known that conventional concrete designed on the basis of compressive strength does not meet many functional requirements such as impermeability, resistance to frost, thermal cracking adequately.

The production of the Portland cement as a main constituent of concrete has basically led to the dangerous impacts on our environment by releasing substantive amount of CO_2. Production of one ton of Portland cement emits one ton of CO_2 and other greenhouse gases. Hence the cement must be effectively replaced by some other cementations materials without compromising the desired properties of concrete.

The coal based power plant generates a huge amount of fly ash which is collected from electrostatic precipitator and Silica fume is a by-product of producing silicon metal or ferrosilicon alloys in smelters using electric arc furnaces. Disposal of these wastes may require huge land surface or any water bodies which in turn affects the environment, so recycling of these waste is indeed required.

The purpose of this study is to find the suitability of Fly Ash and Silica Fume as hybrid admixture replacement materials for cement without compromising the strength & durability of conventional cement based hybrid concrete. Replacement of cement partially by Fly Ash and Silica Fume also reduces the supply demand on cement and may also reduce the emission of CO_2 in to atmosphere.

The physical and chemical properties of Fly Ash and Silica Fume has been studied and both the industrial wastes are used to replace the cement at 25%F.A-5%S.F, 20%F.A- 10%S.F,15%F.A-15%S.F and 10%F.A-20%S.F. These specimens will be tested for its mechanical properties such as compressive strength, split tensile strength and flexural strength on 7 & 28 days.

After determining the properties of the concrete mixes, the optimum percentage of replacement levels of Fly Ash and Silica Fume will be found out for the optimized concrete Mix.

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DEPARTMENT OF CIVIL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR; 2015-2016

TITLE OF THE PROJECT: EXPERIMENTAL STRENGTHENING OF RCC BEAM BY GFRP WRAPPING INVESTIGATION

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ABSTRACT

Deterioration in reinforced concrete structures is a major issue faced by the infrastructures and bridge industries all over the world. One of the suitable solutions is to modify and to improve the performance of the structure by introducing a new technique called "Strengthening".

Previously a steel plate was used as external reinforcement but in last fifteen years. FRP sheets have been used to replace steel because of their superior properties. These materials are an excellent option for use as external wrapping, because of their light weight, resistant to corrosion and high strength.

The main aim of this study is to investigate the flexural characteristic of RC beams using GFRP sheets. It is not only cost effective but also helps in improving the service life of structures. To strengthen deficient RC structures beams are wrapped with single, double, and triple GFRP sheets.

Test specimens were prepared for flexural strength. The grade of the concrete used for this investigation is M25.The strength properties of these beam are found at 28 days respectively.

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DEPARTMENT OF CIVIL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR; 2015-2016

TITLE OF THE PROJECT: REMOVAL OF HEAVY METALS BY USING ACTIVATED CARBON IN WASTE WATER

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Heavy metals are one of the most toxic materials to the environment. Adsorption is the process which is used for the removal of heavy metals from wastewater. Many researches have been conducted to remove heavy metals using different materials. Various adsorbents have been used to remove different type of heavy metal ions from wastewater especially those that are harmful to mankind. Activated carbons, plant or lingo cellulosic wastes, clays and biopolymers are the most common adsorbents used. For this research, Activated carbon was used as a adsorbent to remove copper and zinc and nickel from wastewater. The synthetic wastewater was prepared in the laboratory to conduct the experiments. Batch experiments were conducted to obtain the optimum conditions for copper and zinc. Effect of parameter like pH, adsorbent dose, contact time, temperature and initial metal ion concentration were also determined.

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DEPARTMENT OF CIVIL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR; 2015-2016

TITLE OF THE PROJECT: SEISMIC UPGRADATION OF A STEEL FRAMED STRUCTURE BY BRACING SYSTEMS

PRINCIPAL INVIGILATOR: K.SHARMILA DEVI

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ABSTRACT

This thesis deals with the aspect of design and performance of various types of bracings for a steel moment resisting framed structure. Structures are generally vulnerable to lateral loads such as seismic loads. Along with gravity load structures will also be subjected to lateral loads, thus developing high stresses on members. When a tall building is subjected to seismic loads, the resulting oscillatory movement will induce a wide range of responses in the building's occupants. As a result, lateral stiffness becomes a major consideration in the design of tall buildings. A typical 20 storeyed steel frame building is analyzed for performance under seismic conditions. This building is located in seismic Zone IV. The structure is designed for static loading conditions and seismic analysis is performed by linear time history analysis method. The critical members are identified and bracings are used to provide lateral stiffness. Bracing is highly efficient and economical method of resisting lateral forces in a framed structure because the diagonals work in axial stress and therefore call for minimum member sizes in providing the stiffness and strength against horizontal shear. In this study, three types of bracing configurations namely X, K and Diagonal bracings are adopted and the most feasible type of bracings is recommended for the chosen building.

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DEPARTMENT OF CIVIL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR; 2015-2016

TITLE OF THE PROJECT: PLANNING, ANALYSIS AND DESIGN OF COMMERCIAL BUILDING

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ABSTRACT

Our project **"PLANNING, ANALYSING AND DESIGN OF A COMMERCIAL BUILDING"** has improved our basic knowledge about framed structure.

This project work deals with the planning, analysis, design and drawing of a commercial building.Beams, columns,stair case and footings are designed by limit state methodby using STADD Pro software .The Plan ,elevation and section are carried out using Auto CAD software.

Types of construction	:	Framed structure.
Method of drafting	:	Auto CAD.
Method of Design	:	Limit State of Design.
Code books Referred	:	IS 456:2000,IS 800-2007 ,NBC

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RESEARCH PROJECT

ACADEMIC YEAR; 2015-2016

TITLE OF THE PROJECT: FLEXURAL BEHAVIOUR OF BASALT FIBER IN PPC CONCRETE

PRINCIPAL INVIGILATOR: K.VIVEK

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ABSTRACT

Some experiment investigations of concrete in compress, split tensile and flexure strength. Beam, cylinder and cubes are made in M-30 concrete. Concrete is the third largest material consumed by human beings after food and water as per WHO. Concrete play a vital role in the design and construction of the nation's infrastructure. The objective of present investigation are to investigate the development of normal strength concrete using nature sand as fine aggregate examine the effect of basalt fiber incorporation with discrete percentages such 0%,0.25%, 0.40%, and 0.55% by weight of cement for the grade of M-30 concrete.

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DEPARTMENT OF CIVIL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT: EXPERIMENTAL INVESTIGATION ON FLEXURAL BEHAVIOR OF SELF-COMPACTING AND SELF CURING MODIFIED CONCRETE BY USING FOUNDRY SAND

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ABSTRACT

Self - compacting concrete (SCC) is a high – performance concrete that can flow under its own weight to completely fill the form work and self-consolidates without any mechanical vibration. This present study aims to utilize the waste sand (foundry sand) in self compacting concrete under both internal and external curing. Fine aggregate was replaced by various proportions of foundry sand from 0% to 40% at 10% interval. Self compacting concrete under internal curing was carried by using self curing agent (PEG 400). The properties of self compacting concrete with foundry sand in fresh and hardened state were determined to assess the feasibility of the work. SCC without foundry sand are prepared as control mix and the mechanical properties such as compressive strength of cube, and flexural strength of beam with reinforcement are compared with control mixes .The Mix Design for SCC is done as per Japanese method and European guidelines. The fresh concrete workability tests of SCC are followed by EFNARC (European Federation for National Association for procedure and applicators specialist building concrete). The test results indicate that SCC with 30% foundry sand achieved more strength in all the hardened concrete tests than other combinations at the age of 28days.

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RESEARCH PROJECT

ACADEMIC YEAR; 2015-2016

TITLE OF THE PROJECT: EXPERIMENTAL STUDY ON THE BEHAVIOUR OF HIGH PERFORMANCE CONCRETE USING GGBS AND POND ASH

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ABSTRACT

Concrete is the most widely used construction material in India with annual consumption exceeding 100 million cubic metres. It is well known that conventional concrete designed on the basis of compressive strength does not meet many functional requirements such as impermeability, resistance to frost, thermal cracking adequately.

High Performance Concrete (HPC) is an engineered concrete possessing the most desirable properties during fresh as well as hardened concrete stages. HPC is far superior to conventional cement concrete as the ingredients of HPC contribute most optimally and efficiently to achieve various mechanical and durability requirements of concrete.

The production of the Portland cement as a main constituent of concrete has basically led to the dangerous impacts on our environment by releasing substantive amount of CO_2. Production of one ton of Portland cement emits one ton of CO_2 and other greenhouse gases. Hence the cement must be effectively replaced by some other cementitious materials without compromising the desired properties of concrete.

The coal based power plant generates a huge amount of fly ash which is collected from electrostatic precipitator and the bottom ashes are disposed in a slurry form in large ponds and dykes. Pond Ash requires huge area, water and energy to dispose off, so recycling of the pond ash is indeed required.

The purpose of this study is to find the suitability of GGBS as a replacement material for cement and pond fly ash as a replacement material for fine aggregate without compromising the strength & durability of conventional cement based HPC. Replacement of cement partially by GGBS also reduces the supply demand on cement and may also reduce the emission of CO_2 in to atmosphere.

The physical and chemical properties of GGBS and pond ash has been studied and both the industrial wastes are used to replace the cement and fine aggregate up to 50% in concrete. The specimens will be tested for its mechanical properties such as compressive strength, split tensile strength and flexural strength on 7, 28, 56 & 90 days and durability properties like water permeability and chloride permeability.

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DEPARTMENT OF CIVIL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT: BLACK SPOT IDENTIFICATION AND RECTIFACTION OF NH44 SALEM TO NAMAKKAL STRETCH OF 62KM

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ABSTRACT

Accidents in India are attributed to a number of reasons including inadequate road infrastructure, heterogeneity of vehicles, poor road surface conditions, over speeding and lack of traffic education. A major challenge to highway engineers is to plan and operate highways for safe and efficient moment of traffic reducing travel time and accidents. The serious economic loss caused by ro`ad accidents demand urgent attention and appropriate measures to reduce the accident rate. Identification of black spots and implementation of remedial measures is one of the road safety measures to bring down traffic accidents. In the present study the National Highway 44 Salem to Namakkal Tamil Nadu, was selected for identifying black spots. Traffic surveys were carried out and road inventory data including pavement surface condition were collected to ascertain the causes of frequent accidents. The remedial measures have been suggested. The remedial measures when incorporated will bring down accident rates and make the road stretch safer for traffic moment and pedestrians.

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DEPARTMENT OF CIVIL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR; 2015-2016

TITLE OF THE PROJECT: RETROFITTING OF RC BEAM WITH SIMCON LAMINATES

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ABSTRACT

The project presents the results of experimental studies concerning the flexural strengthening of RC beams using externally bonded **S**lurry **I**nfiltrated **M**at Concrete **(SIMCON)** laminates. A total of four reinforced concrete beams were cast and tested in the laboratory over an effective span of 1500 mm. Three beams were strengthened with bonded **SIMCON** laminate at the bottom under virgin condition and tested until failure the remaining one beam was used to compare the strength. Static responses of all the beams were evaluated in terms of strength, stiffness, deflection of beam, compositeness between laminate and concrete, and the associated failure modes. The results show that the strengthened beams exhibit increased flexural strength, enhanced flexural stiffness, and composite action until failure.

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RESEARCH PROJECT

ACADEMIC YEAR; 2015-2016

TITLE OF THE PROJECT: AN EXPERIMENTAL STUDY OF PARTIAL REPLACEMENT OF FINE AGGREGATE WITH STEEL POWDER

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ABSTRACT

This paper systematically investigates the characteristics of concrete containing fine crushed steel during its process, the best ratio of fine crushed steel which leads to higher strength of concrete in order to produce concrete blocks, and the effect of waste steel replacement on the expansion caused by Alkali-silica reaction (ASR). The slump, unit weight, compressive strength, splitting tensile strength, flexural strength, modulus of elasticity, ultrasonic pulse velocity, dry density, water absorption and Alkali-silica reaction (ASR) were analyzed in terms of waste steel content (0%, 5%, 15% and 20%) under different curing age of 7, 14 and 28 days. It was found that the slump of concrete containing waste steel as fine aggregate replacement decreased with increases in the waste steel content but without loss of workability. The compressive strength of concrete with 15% waste steel content increased by 29.30 %, 35.02% and 8.92% respectively at 28 days. There was a clear decrease in the water absorption with an increase of waste steel aggregate ratio, and a clear reduction in the expansion of the waste steel concrete, showing an alkali–silica reaction in concrete which occurred between the active silica of waste steel and alkali of cement paste.

Index Terms— Waste steel; Concrete; Properties; Alkali-silica reaction.

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DEPARTMENT OF CIVIL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR; 2015-2016

TITLE OF THE PROJECT: EXPERIMENT ON CADMIUM REMOVAL BY ACTIVATED CARBON PREPARED FROM WASTE MATERIAL

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ABSTRACT

Now-a-days pollution has been a major challenging issues to the environmental engineer's today due to the contaminants from natural and anthropogenic origins that are hazardous to human health. Over the few decades, adsorption has gained importance for purification, separation recovery process. Among various adsorbents used, activated carbon was well known for its high adsorption capacity due to large surface area and pores volume.

Now-a-days, immense research has been focused towards converting the waste materials into activated carbon, since this technology not only solves the problem of waste disposal but also convert wastes into a valuable product, that can be used as an adsorbent for various treatments. Researchers have studied the production of activated carbon from various material using physical and chemical process.

Tamarind seed is selected as the precursor for the preparation of activated carbon in the present investigation Development of activated carbon was influenced by carbonization temperature, agitation speed, amount of dosage, contact time. From the present investigation, it can be seen that the, Adsorption of cadmium was conducted onto the Granular Activated Carbon (GAC) prepared from tamarind seed.

The prepared activated carbon was oven dried for 4 hours at 105°C. After that the activated prepared from seed is taken into acid treatment and muffle furnace burn for 1hours at 400°C for further enhancement of surface activation. The maximum removal was observed at an adsorbent dosage of 8 g/L.

It was concluded from the experimental results that the adsorption capacity was reduced when there was an increase in pH and optimum pH was found to be around 6. The Cd ion adsorption increased with increase in time.

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DEPARTMENT OF CIVIL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR; 2015-2016

TITLE OF THE PROJECT: EXPERIMENTAL BEHAVIOUR STUDY ON GEOPOLYMER CONCRETE USING MANUFACTURED SAND

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ABSTRACT

Geopolymer concrete (GPC) is composed of fly-ash, fine aggregate, coarse aggregate and alkaline solution. Constructability and long term performances are influenced by the physical properties of the aggregates used. Common river sand, which is the most commonly used fine aggregate, is expensive due to excessive cost of transportation from natural sources. Also large scale depletion of these resources creates environmental problems.

Economy and sustainability objectives are better served, if locally available durable aggregates can be used-even if some of individual aggregate sizes do not meet grading of other physical properties normally specified. This will help minimize cost. In such a situation the manufactured sand (MS) can be an economic alternative to the river sand in concrete.

The scope of this project is to study the properties of GPC by using manufactured sand as fine aggregate in various proportions.

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DEPARTMENT OF CIVIL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR; 2015-2016

TITLE OF THE PROJECT: COMPARATIVE STUDY ON STRENGTH ENHANCEMENT OF STEEL FIBRE CONCRETE USING MAGNETIC AND NORMAL WATER

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ABSTRACT

The most important challenge for concrete technologists is to improve the properties of concrete. In the last two decades, in Russia and China, a new technology, called magnetic water technology, has been used in the concrete industry. In this technology, by passing water through a magnetic field, some of its physical properties change and, as a result of such changes, the number of molecules in the water cluster decrease from 13 to 5 or 6, which causes a decrease in the water surface tension. Using magnetized water in concrete mixtures causes an improvement in the workability and strength of concrete.

Magnetic treatment of water increases the ion solubility in the water, and pH. Magnetic treatment changes the mode of calcium carbonate precipitation such that circular disc-shaped particles are formed rather than the dendritic (branching or tree-like) particles observed in non treated water. This technique is mostly used for the softening of water and, for the first time in this research, it has been used by the scientists for the production of concrete. Some researchers hypothesize that magnetic treatment affects the nature of hydrogen bonds between water molecules.

Concrete made with magnetic water has higher slump values. Also in some cases, the compressive strength of the magnetic concrete samples was higher than that of the control concrete samples. The cement content can be reduced by 28% in the case of magnetic concrete.

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RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT: PLANNING, ANALYSIS, DESIGN OF AN RESIDENTIAL BUILDING

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ABSTRACT

In this project, planning, analysis, and structural design has been made for a residential building based on all relevant Indian Standard code of practice. Detail drawings pertaining to the structural design of residential building are presented.. All the structural members like slabs, beams, columns and footings are designed using Indian Standard Code IS 456-2000, and design aid SP-16.

The structural components are designed by limit state method. Materials were used as specified by National Building Code. Concrete M_{20} grade and Fe 415 steel bars were considered for all the design. Dog-legged staircase is used in this residential building. Footing is designed as isolated and the detailing drawings of reinforcement are enclosed in this report. All the dimensions are given in metric units.

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DEPARTMENT OF CIVIL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR; 2015-2016

TITLE OF THE PROJECT: FLEXURAL STUDY ON POTASSIUM BASED GEOPOLYMER CONCRETE

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ABSTRACT

The global usage of cement occupies the second position next to water. As the development of country and infrastructure, their materials needed get increased. Meanwhile for the development of the infrastructure concrete plays the major role. In concrete the major material or ingredient is ordinary Portland cement (OPC). OPC creates two major problems at the time of production; the emission of CO2 due to calcination of limestone and the usage of extensive amount of energy. On the other hand, fly ash is the material which is emitted from the power plants at the time of electricity production which has similar and superior properties of cement. If fly ash is mixed with any kind of hydroxide and silicate it forms as the binder, which is termed as geopolymer. We used the Potassium Hydroxide and Potassium Silicate as the combination of the alkaline solution. The specimens was casted on 150x150x150mm cubes, 150x300mm cylinders, 500x100x100mm beams. The specimens was cured with heat and ambient and the tests were conducted at the age of 7th and 28th days. Then the high strength mix will be identified and with that mix reinforced concrete beams will be casted and tested to study the flexural behavior of geopolymer concrete.

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DEPARTMENT OF CIVIL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR; 2015-2016

TITLE OF THE PROJECT: EXPERIMENTAL INVESTIGATION ON STRENGTHENING OF BEAM BY GFRP WRAPPING

PRINCIPAL INVIGILATOR: V.NAGENDRAN

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ABSTRACT

Deterioration in reinforced concrete structures is a major issue faced by the infrastructures and bridge industries all over the world. One of the suitable solutions is to modify and to improve the performance of the structure by introducing a new technique called "Strengthening". Previously steel plates was used as external reinforcement but in last fifteen years, FRP sheets have been used to replace steel because of their superior properties .These materials are an excellent option for use as external wrapping, because of their light weight, resistant to corrosion and high strength .The main aim of this study is to investigate the flexural characteristic of RC beams using GFRP sheets .

It is not only cost effective but also helps in improving the service life of structures. To strengthen deficient RC structures. beams are wrapped with single, double, and triple GFRP sheets.Test specimens were prepared for flexural strength. The grade of the concrete used for this investigation is M25.The strength properties of these beam are found at 7 days, 21 days and 28 days respectively.

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DEPARTMENT OF CIVIL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT: FLEXURAL RESPONSE OF ECC STRENGTHENED REINFORCED CONCRETE BEAMS

PRINCIPAL INVIGILATOR: V.NAGENDRAN

CO-PRINCIPAL INVIGILATOR: Dr.G.S.VENKATASUBRAMANI

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ABSTRACT

In this project we are experimentally testing the flexural behavior of steel reinforced concrete beams partially strengthened with Engineered Cementitious composites (ECC). The specimens were made with different layer thickness of ECC in tension zone of reinforced concrete beams, different length ECC in plastic hinge zone in reinforced concrete beams and control specimens for comparing the strength. Along with the beams the cylinders and cubes were also tested for compression failures. The testing of the specimens is done using Universal Testing Machine (UTM).

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DEPARTMENT OF CIVIL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR; 2015-2016

TITLE OF THE PROJECT: EXPERIMENTAL INVESTIGATION ON BEAMS REINFORCED WITH FRP BARS

PRINCIPAL INVIGILATOR: S.SUBATHRA

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ABSTRACT

The FRP bars used internally as reinforcement bars (rebar) replacing conventional steel reinforcement in reinforced concrete (RC) structures due to its advantages, such as, corrosion resistance, non-conductivity, high strength-to-weight ratio and light weight. The durability may be defined as the capacity of a material or a structure corresponding to the initial performance and is kept constant during time. As is known, FRP bars present high values of the transverse coefficient of the thermal expansion (CTE) with respect to concrete; as a consequence, when temperature increases, tensile stresses take place within the concrete that may produce splitting cracks affecting the bond performance.

The objective of the present project was to study the behaviour of FRP reinforced concrete beams under flexure. The study involved experimental work and theoretical work. All the beams reinforced with FRP were tested under 2-point bending load. The ultimate load, deflection and failure pattern will be studied. Finally results were interpreted.

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RESEARCH PROJECT

ACADEMIC YEAR; 2015-2016

TITLE OF THE PROJECT: EXPERIMENTAL INVESTIGATION OF BOTTOM ASH AS A PARTIAL REPLACEMENT OF FINE AGGREGATE WITH ADDITION OF HUMIC ACID

PRINCIPAL INVIGILATOR: B.KARTHIGA

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ABSTRACT

Concrete is the most important engineering material and the addition of some other materials may change the properties of concrete. Studies have been carried out to investigate the possibility of utilizing a broad range of materials as partial replacement materials for cement and aggregate in the production of concrete. The present experimental study was conceived following the general purpose of testing new sustainable building processes and modern production systems, aims not only at saving natural raw materials and reducing energy consumption, but also to recycle industrial by-products.

Bottom ash is a hazardous by-product from coal based thermal power plants and it produced from Neyvelilignite corporation. The objectives of this study was to investigate the effect of use of coal bottom ash as partial replacement of fine aggregates in various percentages (0–30%) and with addition of humic acid (1-2%) obtained from organic matter its main aim is to increases the strength.i will use M25 grade of concrete and PPC is used for making concrete.

The purpose of this study is to compare the strength of conventional concrete with replaced aggregate concrete and various strength properties like compressive strength, split tensile strength and flexural strength will found to increase its strength.

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RESEARCH PROJECT

ACADEMIC YEAR; 2015-2016

TITLE OF THE PROJECT: ANALYSIS AND DESIGN OF MULTI LEVEL CAR PARKING BUILDING

PRINCIPAL INVIGILATOR: S.BALAMURUGAN

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ABSTRACT

The main necessity of this project is to get knowledge and an experience in the field of design by using IS codes, software and applying the design principles in a practical way.

This report discusses on the Design of A Multi level Car Parking building. This project mainly includes the analysis and design of the building. The load conditions as per code **IS 875(PART 2)1987** were considered. The slab and beams are designed for bending, shear and deflection limit.

In this paper, the basic multi-level car parking system with three floors were analyzed and designed. The parking lots have an elevator to carry cars to different floors according to the vacancies. The elevator is controlled by a Programmable logic controller (PLC) along with the help of some sensors. The Plan and Reinforcement details are drawn in AutoCAD. The analysis made in STAAD pro. Designs are made manually by using IS 456:2000.For the designing of slabs, beams, column, column footings the limit state method of design has been adopted.

Concrete grade of M20 and HYSD bars of grade Fe415 are used. Plan and detailing are enclosed in this project.

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT:Secure Privacy Assisstance Content For Protecting Location Based Queries Using Symmetric Key

PRINCIPAL INVIGILATOR: N.Magendiran

PI/CoPI

HoD

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ABSTRACT

ABE-based framework for patient-centric secure sharing of PHRs in cloud computing environments, under the multi-owner settings. To address the key management challenges, conceptually divide the users in the system into two types of domains, namely public and personal domains. In particular, the majority professional users are managed distributive by attribute authorities in the former, while each owner only needs to manage the keys of a small number of users in her personal domain. In the public domain, use multi-authority ABE (MA-ABE) to improve the security and avoid key escrow problem. Each attribute authority (AA) in it governs a disjoint subset of user role attributes, while none of them alone is able to control the security of the whole system. Mechanisms for key distribution and encryption so that PHR owners can specify personalized fine-grained role-based access policies during file encryption. In the personal domain, owners directly assign access privileges for personal users and encrypt a PHR file under its data attributes.

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT: Botnet Detection Using Firecol

PRINCIPAL INVIGILATOR:M.Sivaganesh

CO-PRINCIPAL INVIGILATOR: Dr.K.Saravanan

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ABSTRACT

A botnet is a network of compromised computers under the control of a malicious actor. Each individual device in a botnet is referred to as a bot. A bot is formed when a computer gets infected with malware that enables third-party control. The proposed work is detecting the botnet using FireCol algorithm over a multiple network. The IPSs which is form the virtual protection ring to transit the data without any attack.The IPSs used to secure the data when attackers tried to attack the data in the transit process. The evaluation of FireCol using extensive simulations and a real dataset is presented, showing FireCol effectiveness and low overhead (Bandwidth), as well as its support for incremental deployment in real networks.

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT: A Novel Real-Time Big Data Analytical Architecture

PRINCIPAL INVIGILATOR:P.Renukadevi

CO-PRINCIPAL INVIGILATOR: Dr.G.Mahalakshmi

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ABSTRACT

Digital images are easily subjected to forgeries due to the availability of powerful image processing tools. Now-a-days it is possible to add or remove essential features in an image without leaving any clues in an image. As digital cameras and video camera's replace their analog counterparts, the need for authenticating digital images and their contents detecting forgeries will only increase. In particular, aiming for detecting a special type of digital forgery called copy-move attack in which part of the image is copied and pasted somewhere else in the same image with the intent to cover an important image feature. In this project it investigate the problem of detecting the copy-move forgery in which portion of the image is copied and pasted on the same image somewhere else, with the intent to cover an important image feature. The project will investigate the problem of detecting the copy-move forgery by using wavelet based forensic method. The copy-move method will successfully detect the forged part even when the copied area is enhanced / re-altered to merge it with the background. Then the forged image will be saved in a lossy format such as joint photographic experts group.

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RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT: Secure Privacy Assistance Content For Protecting Location Based Queries Using Symmetric Key

PRINCIPAL INVIGILATOR: N.Magendiran

CO-PRINCIPAL INVIGILATOR: Dr.S.Vijayaragavan

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ABSTRACT

ABE-based framework for patient-centric secure sharing of PHRs in cloud computing environments, under the multi-owner settings. To address the key management challenges, conceptually divide the users in the system into two types of domains, namely public and personal domains. In particular, the majority professional users are managed distributive by attribute authorities in the former, while each owner only needs to manage the keys of a small number of users in her personal domain. In the public domain, use multi-authority ABE (MA-ABE) to improve the security and avoid key escrow problem. Each attribute authority (AA) in it governs a disjoint subset of user role attributes, while none of them alone is able to control the security of the whole system. Mechanisms for key distribution and encryption so that PHR owners can specify personalized fine-grained role-based access policies during file encryption. In the personal domain, owners directly assign access privileges for personal users and encrypt a PHR file under its data attributes.

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT: Find Pretend Biometric Mistreatment Image Distortion Analysis For Spoofing Detection

PRINCIPAL INVIGILATOR: P.Manikandan

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ABSTRACT

User authentication is an important step to protect information, and in this context, face biometrics is potentially advantageous. Face biometrics is natural, intuitive, easy to use, and less human-invasive. Unfortunately, recent work has revealed that face biometrics is vulnerable to spoofing attacks using cheap low-tech equipment. Current face biometric systems are vulnerable to spoofing attacks.

A spoofing attack occurs when a person tries to masquerade as someone else by falsifying data and thereby gaining illegitimate access.Inspired by image quality assessment, characterization of printing artifacts, and differences in light reflection, this propose to approach the problem of spoofing detection from texture analysis point of view. Hence, this present a novel approach based on analyzing facial image quality or detecting whether there is a live person in front of the camera or a face print.

The proposed approach analyzes four different features (specular reflection, blurriness, chromatic moment, and color diversity) are extracted to form the IDA feature vector. An ensemble classifier, consisting of multiple SVM classifiers trained for different face spoof attacks. This provides a unique feature space for coupling spoofing detection and face recognition. Extensive experimental analysis on a publicly available database showed excellent results compared to existing works.

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT: Secure Neighbour Discovery And Neighbour Position Verification In Mobile Ad-Hoc Neywork

PRINCIPAL INVIGILATOR: S.Sakthivel

CO-PRINCIPAL INVIGILATOR: J. Nashreen Begum

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ABSTRACT

In mobile ad hoc network, pervasive infrastructure is not present so the routes may be misuse or disrupt the services. These adversarial nodes affect the performance in network, so it is more important to identify the neighbor nodes in MANET. The neighbor node should be always a priori trusted nodes for communication. In absence of a priori trusted nodes, the discovery and verification of neighbor position presents challenges. To minimize adversaries attacks the mobile nodes required to learn the discovery and neighbor position verification which is more challenging in mobile ad hoc networks. To overcome this problem, the Zone based Neighbor Position Verification (ZNPV) protocol is proposed and it is robust against colluding adversaries. ZNPV protocol can prevent maximum number of adversaries attack. There are multiple verifiers, so it decreases the false positive and false negative rates.

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RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT: DETECT AND ELIMINATE THE SYBIL ATTACK IN WIRELESS NETWORKS WITHOUT USING TRUSTED AUTHORITIES

PRINCIPAL INVIGILATOR: R.SANTHIYA

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ABSTRACT

The Sybil attack is the most one of the problem of wireless networks. Thus the Sybil attackers cannot to be easily eliminating the entire network. But, easily identified and secure the transaction or communication in the DTNs (Delay tolerant networks) network. Delay tolerant networks (DTNs) are a special type of wireless networks. The connections between nodes should be established by using relay nodes. DTN routing algorithms favor the "multi-hop forwarding" fashion where a message can be forwarded by multiple relay nodes in the hope that one of the employed relay nodes can deliver the message to the destination node. Delivery efficiency does not solely rely on the number of relay nodes employed by each message. When the number of relay nodes is limited, only few intermediate nodes are utilized to transmit messages. But the Sybil attacker has to be entering into the network and create the problem of the network communication. Unsecure the entire the data transaction. Thus attacker can be identified using the some methodologies.

The communication between the source node to the destination node using the intermediate nodes and the Sybil node act as the intermediate node thus time the data is loosed. In this time identify the Sybil node and transmit the data from source node to the destination node. The Sybil attacker can be modifies the data or destroys the message. Then transit the sample data to check the secure transaction or not. If the transaction of sample data is secure then transmit the original data. Otherwise select the another shortest path and test the secure transaction or not using sample data. If the transaction is secure and transmit the original data. The data has to be received to the destination and send the acknowledgment to the source node.

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RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT: Secure Privacy Assistance Content For Protecting Location Based Queries Using Symmetric Key

PRINCIPAL INVIGILATOR: N.Magendiran

CO-PRINCIPAL INVIGILATOR: Dr.S.Vijayaragavan

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ABSTRACT

ABE-based framework for patient-centric secure sharing of PHRs in cloud computing environments, under the multi-owner settings. To address the key management challenges, conceptually divide the users in the system into two types of domains, namely public and personal domains. In particular, the majority professional users are managed distributive by attribute authorities in the former, while each owner only needs to manage the keys of a small number of users in her personal domain. In the public domain, use multi-authority ABE (MA-ABE) to improve the security and avoid key escrow problem. Each attribute authority (AA) in it governs a disjoint subset of user role attributes, while none of them alone is able to control the security of the whole system. Mechanisms for key distribution and encryption so that PHR owners can specify personalized fine-grained role-based access policies during file encryption. In the personal domain, owners directly assign access privileges for personal users and encrypt a PHR file under its data attributes.

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RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT: Detect And Eleminate The Sybil Attacks In Wireless Networks Without Using Trusted Authorities

PRINCIPAL INVIGILATOR: R.Santhiya

CO-PRINCIPAL INVIGILATOR: M.I.Thariq Hussan

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ABSTRACT

The Sybil attack is the most one of the problem of wireless networks. Thus the Sybil attackers cannot to be easily eliminating the entire network. But, easily identified and secure the transaction or communication in the DTNs (Delay tolerant networks) network. Delay tolerant networks (DTNs) are a special type of wireless networks. The connections between nodes should be established by using relay nodes. DTN routing algorithms favor the "multi-hop forwarding" fashion where a message can be forwarded by multiple relay nodes in the hope that one of the employed relay nodes can deliver the message to the destination node. Delivery efficiency does not solely rely on the number of relay nodes employed by each message. When the number of relay nodes is limited, only few intermediate nodes are utilized to transmit messages. But the Sybil attacker has to be entering into the network and create the problem of the network communication. Unsecure the entire the data transaction. Thus attacker can be identified using the some methodologies.

The communication between the source node to the destination node using the intermediate nodes and the Sybil node act as the intermediate node thus time the data is loosed. In this time identify the Sybil node and transmit the data from source node to the destination node. The Sybil attacker can be modifies the data or destroys the message. Then transit the sample data to check the secure transaction or not. If the transaction of sample data is secure then transmit the original data. Otherwise select the another shortest path and test the secure transaction or not using sample data. If the transaction is secure and transmit the original data. The data has to be received to the destination and send the acknowledgment to the source node.

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT: Implementation of Classification Technique To Enhance Data Mining With Big Data

PRINCIPAL INVIGILATOR: D.Banumathy

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ABSTRACT

Any large unstructured data that are difficult to process by ordinary database management tools is called bigdata. This bigdata also pose a hectic challenge for extracting knowledge from bigdata. The existing three tier architecture intakes the data from various resources which is integrated and fed to the bigdata repository. On applying HACE theorem, knowledge with pattern is obtained. The proposed system uses classification algorithm on the knowledge extracted using local learning patterns and helps in obtaining a better quantitation pattern that support business analysis. The existing mining system produces only an approximate result. To improve the data retrieval performance, Tier-IV is implemented to extract the accurate result. Tier-IV is obtained by using classification algorithm, to extract the relevant information from the global knowledge. Decision maker provides the better decision after analysing the knowledge.

Keywords: Bigdata, mining challenges, HACE theorem, Classification algorithm, Local learning pattern.

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT: Enhancing The Security Measure Of The System Administaǒors In Laboratory To Prevent Illegal Access And Data Leakage

PRINCIPAL INVIGILATOR: S.Sivaraman

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ABSTRACT

Security is the main term that is needed to everyone in order to secure valuable things. In computer technology, security refer to the techniques for ensuring that the data stored in a computer cannot be read or compromised by any individuals without an authorization. The objective of the application is to control the students from the access of the various features and files that are available in the operating system, internal and external storage of a computer without the intention of the administrator. This manages outputs from application systems by handling private data to ensure that contains only the information relevant to the user and this is dictated by administrator or power user. Moreover the access to sensitive data is restricted and hence ensuring data security. This application was instaXed in the computer system and allowed to run before the desktop ('userinit.exe') opens. This application was very useful in the computer laboratory.

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT: Find Pretend Biometric Mistreatement Image Distortion Analysis For Spoofing Detection

PRINCIPAL INVIGILATOR: P.Manikandan

CO-PRINCIPAL INVIGILATOR: S.Rajesh

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ABSTRACT

User authentication is an important step to protect information, and in this context, face biometrics is potentially advantageous. Face biometrics is natural, intuitive, easy to use, and less human-invasive. Unfortunately, recent work has revealed that face biometrics is vulnerable to spoofing attacks using cheap low-tech equipment. Current face biometric systems are vulnerable to spoofing attacks.

A spoofing attack occurs when a person tries to masquerade as someone else by falsifying data and thereby gaining illegitimate access.Inspired by image quality assessment, characterization of printing artifacts, and differences in light reflection, this propose to approach the problem of spoofing detection from texture analysis point of view. Hence, this present a novel approach based on analyzing facial image quality or detecting whether there is a live person in front of the camera or a face print.

The proposed approach analyzes four different features (specular reflection, blurriness, chromatic moment, and color diversity) are extracted to form the IDA feature vector. An ensemble classifier, consisting of multiple SVM classifiers trained for different face spoof attacks. This provides a unique feature space for coupling spoofing detection and face recognition. Extensive experimental analysis on a publicly available database showed excellent results compared to existing works.

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT: Enhancing the Security Measures of System Administrators In Laboratory To Prevent Illegal Access And Data Leakage

PRINCIPAL INVIGILATOR: S.Sivaraman

CO-PRINCIPAL INVIGILATOR: V. Ravindra Krishna Chandar

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ABSTRACT

Security is the main term that is needed to everyone in order to secure valuable things. In computer technology, security refer to the techniques for ensuring that the data stored in a computer cannot be read or compromised by any individuals without an authorization. The objective of the application is to control the students from the access of the various features and files that are available in the operating system, internal and external storage of a computer without the intention of the administrator. This manages outputs from application systems by handling private data to ensure that contains only the information relevant to the user and this is dictated by administrator or power user. Moreover the access to sensitive data is restricted and hence ensuring data security. This application was installed in the computer system and allowed to run before the desktop ('userinit.exe') opens. This application was very useful in the computer laboratory.

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT: Categorization of Drugs Based On Polarity Analysis of Twitter Data

PRINCIPAL INVIGILATOR: Dr.A.Suphalakshimi

CO-PRINCIPAL INVIGILATOR: S.Sakthivel

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ABSTRACT:

Image segmentation is the fundamental approaches of digital image processing. During past few years, brain tumour segmentation in Magnetic Resonance Imaging (MRI) has become a popular research area in the field of medical imaging system. Extracting or grouping of pixels in an image based on intensity values is called segmentation. Image segmentation can be achieved in different ways those are thresholding, region growing, water sheds and contours. Image segmentation refers to the process of partitioning an image into mutually exclusive regions. To extract information regarding tumour at first in the pre-processing level, the extra parts which are outside the skull and don't have any helpful information are removed and then anisotropic diffusion filter is applied to the MRI images to remove noise. By applying the Fast Bounding Box (FBB) algorithm, the tumour area is displayed on the MRI image with a bounding box and the central part is selected as sample points for training of a Relevance Vector Machine (RVM). Then RVM classifies the boundary and extracts the tumour. This method can be implemented by MATLAB.

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RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT: Optical Character Recognition For Scene Text Detection, Mining And Recognition

PRINCIPAL INVIGILATOR: S.Lavanya

CO-PRINCIPAL INVIGILATOR: M.Sangeetha

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ABSTRACT

Text detection in scene images is an important prerequisite for many content-based image analysis tasks. The accurate and robust method for detecting texts in scene images. A fast and effective pruning algorithm is designed to extract multi oriented text from an image. Unlike many other approaches which assume that text is horizontally-oriented to handle text of arbitrary orientation. The input image is first filtered with connected component approach. Connected component clustering is then used to identify candidate text regions based on the maximum difference.

The skeleton of each connected component helps to separate the different text strings from each other. Then normalize candidate word regions and determine whether each region contains text or not. The scale, skew, and color of each candidate can be estimated from CCs, to develop a text/non text classifier for normalized images. This techniques not only detect text, it also extracts from the image and recognizes the text in terms of storing the recognized words into a separate file by incorporating several key improvements over traditional existing methods to propose a novel CC clustering based scene text detection method, which finally leads to significant performance improvement over the other competitive methods.

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RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT: Avoiding the Packet Dropping Attacks In Wireless Adhoc Networks Using HLA

PRINCIPAL INVIGILATOR: V.Maheskumar

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ABSTRACT

Privacy threat is one of the critical issues in multi-hop wireless networks, where attacks such as traffic analysis and flow tracing can be easily launched by a malicious adversary due to the open wireless medium. Network coding has the potential to attacks the coding/mixing operation is encouraged at intermediate nodes. The simple deployment of network coding cannot achieve the goal once enough packets are collected by the adversaries. On the other hand, the coding/mixing nature precludes the feasibility of employing the existing privacy-preserving techniques, such as Onion Routing. A novel network coding based privacy-preserving scheme against traffic analysis in multi-hop wireless networks. The link weight management component of the protocol maintains a weight list for links discovered by the fault detection algorithm. With homomorphic encryption, the scheme offers two significant privacy-preserving features, packet flow untraceability and message content confidentiality, for efficiently the traffic analysis attacks, the proposed scheme keeps the random coding feature. Theoretical analysis and simulative evaluation demonstrate the validity and efficiency of the proposed scheme. On demand route discovery protocol that finds a least weight path to the destination. Protocol bounds the amount of damage that an attacker or a group of colluding attackers can cause to the network.

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RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT: Brain Tumor Segmentation Using Relevance Vector Machine Classifier

PRINCIPAL INVIGILATOR: Dr.J.Yogapriya

CO-PRINCIPAL INVIGILATOR: G.Shanmugavadivu

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ABSTRACT:

Image segmentation is the fundamental approaches of digital image processing. During past few years, brain tumour segmentation in Magnetic Resonance Imaging (MRI) has become a popular research area in the field of medical imaging system. Extracting or grouping of pixels in an image based on intensity values is called segmentation. Image segmentation can be achieved in different ways those are thresholding, region growing, water sheds and contours. Image segmentation refers to the process of partitioning an image into mutually exclusive regions. To extract information regarding tumour at first in the pre-processing level, the extra parts which are outside the skull and don't have any helpful information are removed and then anisotropic diffusion filter is applied to the MRI images to remove noise. By applying the Fast Bounding Box (FBB) algorithm, the tumour area is displayed on the MRI image with a bounding box and the central part is selected as sample points for training of a Relevance Vector Machine (RVM). Then RVM classifies the boundary and extracts the tumour. This method can be implemented by MATLAB.

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RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT: Cdrp Pattern Matcher Algorithm Using Exact Fingerprint Matching

PRINCIPAL INVIGILATOR: M.Revathi

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ABSTRACT

Biometrics is a technology that has been used for human verification and validation purpose. In fingerprint recognition, CDRP is used to improve the security in which it is able to appropriately verify or identify input fingerprints. CDRP (Curriculum Design and Review Process)-Pattern matcher algorithm to find the Exact Minutiae points. When query Fingerprint has been given the sensor scans the user's Fingerprint and converts it into a digital image. After aligning the fingerprints, the matcher determines the number of pairs of matching minutiae, two Minutia points that have similar location and directions. The System determines the user's identity by comparing the match score to a threshold set by the administrator. This algorithm is used for considering the core, delta, ridge bifurcation, ridge ending and pore parameters as well. The minutiae extractor is able to identify the specific details known as minutiae points in fingerprint image that is used to distinguish different users and also will be able to reduce the FRR ratio than the existing one.

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RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT: Enhancing Network Security In Cloud Computing Using Cipher Cloud Mechanism

PRINCIPAL INVIGILATOR: V. Ravindra Krishna Chandar

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ABSTRACT

Any large unstructured data sets with sizes beyond the ability of the software tools to manage and process within a tolerable elapsed time is rightly observed as bigdata. Cloud computing is delivery of on demand computing resources from application to data center over internet. Combining these two strong reliable platforms helps in tackling extra venous real time problems and obtaining solutions for it. Cloud embedded bigdata supports inexpensive reliable storage and tools for analyzing structured, unstructured, semi streaming, click streaming and various types of data. But the existing system lacks performance in handling heterogeneous clusters and becomes inelastic. It pulls back the efficiency of the system. The proposed system addresses the issues that affect the performance of bigdata with cloud and some guidelines for adoption of cloud, virtual cloud technique, cloud deployment delivery models and Subordinate Virtual Cloud mechanism to overcome the addressed bottle neck.

Keywords: Bigdata, cloud computing, heterogeneous cluster, datasets, cloud deployment model, Map-reduce, Subordinate Virtual Cloud.

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RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT: Brain Tumor Segmentation Using Relevance Vector Machine Classifier

PRINCIPAL INVIGILATOR: Dr.J.Yogapriya

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ABSTRACT:

Image segmentation is the fundamental approaches of digital image processing. During past few years, brain tumour segmentation in Magnetic Resonance Imaging (MRI) has become a popular research area in the field of medical imaging system. Extracting or grouping of pixels in an image based on intensity values is called segmentation. Image segmentation can be achieved in different ways those are thresholding, region growing, water sheds and contours. Image segmentation refers to the process of partitioning an image into mutually exclusive regions. To extract information regarding tumour at first in the pre-processing level, the extra parts which are outside the skull and don't have any helpful information are removed and then anisotropic diffusion filter is applied to the MRI images to remove noise. By applying the Fast Bounding Box (FBB) algorithm, the tumour area is displayed on the MRI image with a bounding box and the central part is selected as sample points for training of a Relevance Vector Machine (RVM). Then RVM classifies the boundary and extracts the tumour. This method can be implemented by MATLAB.

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RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT: Medical System Enhancement Using Data Mining Techniques In Soft Computing Framework

PRINCIPAL INVIGILATOR: P.Santhiya

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ABSTRACT

Medical records have traditionally been compiled and stored as Personal Health Records (PHR) that are maintained by patients themselves as separate files. This often results in data loss or incorrect data. It can be made efficient and effective by the way of using Soft Computing. Furthermore, different data mining techniques and cloud computing features are used to enhance this model. In last two decades, the applications of Soft Computing methods in Biomedicine (which is a highly multidisciplinary area connecting medicine, computer science, statistics and many others) became a popular and important issue. The medical industry requires new engineering technologies, to assess information objectively. While recent developments in medical engineering have been achieved by state-of-the-art of intelligent computing techniques including computer-aided diagnosis, computer-aided radiography, developments in computational techniques including Soft Computing (SC), Information Processing and Data Mining holds new premises in this field. Soft Computing methods are becoming an indispensable tool to support modern medical practices. Soft Computing includes Fuzzy Logic (FL) and Genetic Algorithm (GA) methodologies.

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RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT: Classification Of Neuro Surgery Using Fast Boundary Analysis By Multifeature Classification

PRINCIPAL INVIGILATOR: Dr.P.Santhi

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ABSTRACT

Medical image processing is the most challenging and emerging field to detect, diagnosis and evaluation of neurosurgery. MRI is the current technology which enables the detection, diagnosis and evaluation of brain tumor. The medical problems are severe if tumor is detected at the later stage. Hence diagnosis is necessary at the earliest. The Classification involves labeling the images into normal and abnormal (tumor detected). In the existing system a novel algorithm is used for registration of 3D volumetric ultrasound (US) and MR using Robust Patch based correlation Ratio (RAPTOR). RAPTOR computes local correlation ratio (CR) values on small patches and adds the CR values to form a global cost function and also proposes a novel outlier suppression technique based on the orientations of the RAPTOR gradients. The deformation is modeled with free-form cubic B-spleens. This proposed work consists of various stages in their diagnosis processing such as preprocessing, anisotropic diffusion, feature extraction and SVM classification. The fast boundary box segments relates to the co-occurrence features, gray level are extracted and these features are trained and classified using Support vector machine classifier. Features are extracted based on texture, fractal and histogram features. Finally the classification is done by using the Support vector machine approach. This experiment shows accurate part of tumor.

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RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT: SPATIO TEMPORAL DATA TRAFFIC PREDICATION IN BIG DATA USING DIRECTIONAL ROUTE

PRINCIPAL INVIGILATOR: M.SIVA GANESH

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ABSTRACT

As mining utilities observing information route analysis from big data as well continue to increase their emphasis on safety with advanced traffic control centre-assistance systems (ADASs), To route emphasis finder is not only already in abundance but portable enough as well to be one of the most effective multipurpose devices that are able to analyze and advise on safety conditions. To propose a time-dependext landmark graph to model the dynamic traffic pattern MASP as well as the intelligence of experienced route so as to provide a user with the practically fastest route to a given destination at a given departure time. To identify the numerous semantic relations that exist in traffic, with a CADS (Collaborative Adaptive Data Sharing platform), which is an "annotate-as-you create" infrastructure that facilitates fielded data annotation based novel pattern extraction algorithm and a pattern clustering algorithm. Then, a Variance-Entropy-Based Clustering approach is devised to estimate the distribution of travel time between two landmarks in different time slots. Based on this graph, we design a two-stage routing algorithm to compute the practically fastest and customized route for end users Based on traffic condition automatic analysis information are given to traffic controls signals are equipped with numerous sensors that can help to aid in safety enhancements for traffic control centers on the road and also enhance the emergency control to traffic conditions . The direction of lane change on time providence and traffic density on traffic measures, as well as safe acceleration, compared with sudden acceleration, was easily distinguishable. Using a multiple-axis classification method for classification accuracy, resulting in a better road anomaly detection system.

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RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT: DETECTION MALICIOUS NODE ATTACK I
MANETS USING BLOOM FILTER APPROACH

PRINCIPAL INVIGILATOR: P.RENUKADEVI

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ABSTRACT

Provenance management for sensor networks introduces several challenging requirements, such as low energy and bandwidth consumption, efficient storage and secure transmission. The proposed system consists of a novel lightweight scheme to securely transmit provenance for sensor data. The proposed technique relies on in-packet Bloom filters to encode provenance. In addition, the secure provenance scheme is extended with functionality to detect packet drop attacks staged by malicious data forwarding nodes. The effectiveness of the proposed technique is evaluated both analytically and empirically, and the results prove the efficiency of the lightweight secure provenance scheme in detecting packet forgery and loss attacks.

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RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT: PROMOTING TELEMEDICINE DATA BASE TO FACILITATE HEALTH CARE MEDICAL UPDATION

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ABSTRACT

Healthcare and medical emergency are essential systems in human life; so that many countries work toward having it. The transfer of the medical care services to the patient, rather than the transport of the patient to the medical services providers are aim of the project. The focus of the project will be on database management with application scenarios in dynamic telemedicine systems to increase care admissions and decrease care difficulties such as distance, travel, and time limitations. Three-fold approach based on data fragmentation, database websites clustering and intelligent data distribution is being proposed. This approach reduces the amount of data migrated between websites during applications execution; achieves cost effective communications during applications processing and improves applications response time and throughput. The proposed approach is validated internally by measuring the impact of using the computing services techniques on various performance features like communications cost, response time, and throughput. The external validation is achieved by comparing the performance of the approach to that of other techniques in the literature. The results show that the proposed integrated approach significantly improves the performance of web database systems and outperforms its counterparts whenever there will be any updation to new disease or any new medicine then an automated message will be sent to both patient and doctor.

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RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT: A FINANCE GAIN SCHEME WITH GUARANTEED QUALITY OF SERVICE IN CLOUD COMPUTING

PRINCIPAL INVIGILATOR: N.R.VIKRAM

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ABSTRACT

As an effective and efficient way to provide computing resources and services to customers on demand, cloud computing has become more and more popular. From cloud service providers' perspective, finance is one of the most important considerations, and it is mainly determined by the configuration of a cloud service platform under given market demand. However, a single long-term renting scheme is usually adopted to configure a cloud platform, which cannot guarantee the service quality but leads to serious resource waste. A double resource renting scheme is designed firstly in which short-term renting and long-term renting are combined aiming at the existing issues. This novel double renting scheme can effectively guarantee the quality of service of all requests and reduce the resource waste greatly. Secondly, a service system is considered as a queuing model and the performance indicators that affect the finance gain of a novel double renting scheme are analyzed. Thirdly, a finance gain problem is formulated for the novel double renting scheme and the optimized configuration of a cloud platform is obtained by solving the finance gain problem. Finally, a series of calculations are conducted to compare the profit of our proposed scheme with that of the single renting scheme. The results show that our scheme can not only guarantee the service quality of all requests, but also obtain more profit than the latter.

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RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT: CLUSTERING IN BANKING MANAGEMENT SYSTEM USING EFFICIENT K-MEANS ALGORITHM

PRINCIPAL INVIGILATOR: D.BANUMATHY

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ABSTRACT

Clustering analysis is one of the most commonly used data processing algorithms. Over half a century, K-means remains the most popular clustering algorithm because of its simplicity. Recently, as data volume continues to rise, some researchers turn to Optimizing concepts to get high performance. However, K-means clustering is suitable for iterated algorithms owing to repeated times of restarting jobs, data reading and shuffling. In project, address the problems of processing large-scale data using K-means clustering algorithm and propose a novel processing model to eliminate the iteration dependence and obtain high performance. We analyse and implement our idea. Extensive experiments on our cluster demonstrate that our proposed methods are efficient, robust and scalable.

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RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT: Image Super Resolution Using Gradient Profile Sharpness Gps

PRINCIPAL INVIGILATOR: M.Revathi

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ABSTRACT

The Super-Resolution (SR) image reconstruction has proved to be useful in many practical cases where multiple frames of the same scene can be obtained, including medical imaging, satellite imaging, and video applications. SR reconstruction could break the inherent spatial resolution limit of detectors in optical imaging systems by signal processing techniques. Usually it is a numerically ill-posed problem and requires complex computation .To solve this ill-posed problem, regularization is applied. In other words, prior information is combined in the reconstruction to make the problem well-posed. A variety of priors have been proposed, such as smooth prior, total variation prior, and edge statistics prior. In the existing System a new image domain prior term for regularizing the super-resolution reconstruction algorithm. This term encourages preserving the local ramp structure around edges, in the reconstruction algorithm. Ramp at a pixel is defined as the steepest sequence of monotonically increasing (or decreasing) pixels among all feasible directions around the pixel. In the Proposed System a novel image super resolution algorithm is proposed based on GPS (Gradient Profile Sharpness). Based on the estimated GPS transformation relationship, two gradient profile transformation models are proposed for two profile description models, which can keep profile shape and profile gradient magnitude sum consistent during profile transformation. Finally, the target gradient field of HR (high resolution) image is generated from the transformed gradient profiles, which is added as the image prior in HR image reconstruction model.

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RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT: An Efficient Mining Of Lossless High Utility Item Set From Large Data Set By Using Pattern Utility Incremental Algorithm

PRINCIPAL INVIGILATOR: R.Bala Murugan

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ABSTRACT

Data mining is an increasingly important technology for extracting useful knowledge hidden in large collections of data. However, negative social perceptions about data mining among which potential privacy invasion and potential discrimination. It consists of unfairly treating data on the basis of their belonging to a specific group of data from the dataset. Automated data collection and data mining techniques such as classification rule mining have paved the way to making automated various computations like banking, showroom, online shopping etc. They lead datasets degrades the mining performance in terms of execution time and space requirement. The situation may become worse when the database contains lots of long transactions or long high utility item sets. To propose pattern utility incremental algorithm for continuous discovering the complete set of frequent patterns in time series databases estimating the number of refresh item sets and to build a query cost model which can be used to estimate the number of datasets specified incoherency bound. Performance results using real-world traces shows that cost based query planning leads to queries being executed using less than one third the number of messages required by existing schemes and to follow the rank prediction methodology.

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RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT: Dynamic Weighted Majority Concept Drift Detection In Bayesian Filtering To Detect Spam Mail

PRINCIPAL INVIGILATOR: N.Magendiran

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ABSTRACT

E-mail spam is the very recent problem for every individual. The e-mail spam is nothing it's an advertisement of any company/product or any kind of virus which is receiving by the email client mailbox without any notification. To solve this problem the different spam filtering technique is used. Spammers are send spam for their Economical needs this spam wastes the server spaces of ISP and user time. The spam filtering techniques are used to protect our mailbox for spam mails. Filtering techniques Such as content based filtering/Rule based filtering are most efficiently used techniques to detect Spam mail detection. Both the filter perform operation in a similar manner. Content based filtering Analysis the content and shown Rule technique needs Administration rights to update Filter techniques. Dynamic weighted Majority Detects sudden and gradual Changes and Concept Drift Detection finds the Address of the drift occurs in filtering techniques in a combined form of an Algorithm called DWM-CDD. The proposed Approach Presents a windows technique, which is suitable to make Spam mail Detection. It uses general Mail samples. The samples are processed for Feature Extraction. The extracted features of samples are subjected to match the Algorithm to check whether they are Spam or Non Spam. Reconstructed samples is a significant problem in Email Spam Detection,fulfills the requirements for access control of secured areas.

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT: Data Transfer Based On Multiple Channels Usi
Dtsr In Tele Communication For Content Delivery Network

PRINCIPAL INVIGILATOR: N.R.Vikram

PI/CoPI

HoD

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ABSTRACT

Internet service provider(ISP) had deployed to content delivery network(CDN) within their network infrastructure, CDN is an emerging technology with a potential application such as environment monitoring ,earthquake detection, etc., The previous work addressed the problem of overlay construction and bandwidth allocation for delivery of video channels from the entry point of the Telco-CDN to edge servers using MANETs. In this project ,The correct relay node and sink node for data transmission is located using DTSR(Distributed Time Sequence Routing) To reduce the energy cost, nodes are active only during the data transmission and the intersection of node creates a larger merged node. Then it recognize a particular set of content delivery network applications which is to be flexible to this scalability limit, also improving the DTSR roaming with both network size and node density. The Diffie-Hellman Key Exchange is one of the more popular and interesting methods of key distribution whose sole purpose is for distributing keys, whereby it is used to exchange a single piece of information, and where the value obtained is normally used as a session key for a private-key scheme. Enabling those sensor nodes can communicate each other securely. The key distribution to sensor nodes is done by means of two layer process. This project proposes a key distribution scheme, based on intrusion detection method for using a data transmission from source to destination on the network. This is based on high level security and more energy efficient data transmission on their network.

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT: Semi Superivised Based Spatial Em Frame Work For Microarray Analysis

PRINCIPAL INVIGILATOR: Dr.P.Santhi

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ABSTRACT

Microarray technology is one of the important biotechnological means that allows recording the expression levels of thousands of genes simultaneously within a number of different samples. An important application of microarray gene expression data in functional genomics is to classify samples according to their gene expression profiles. One of the major tasks with the gene expression data is to find groups of co-regulated genes whose collective expression is strongly associated with the sample categories or response variables. So implement feature subset selection approach to reduce dimensionality, removing irrelevant data and increase diagnosis accuracy and presents learning method which is able to group genes based on their interdependence so as to mine meaningful patterns from the gene expression data using Spatial EM algorithm. It can be used to calculate spatial mean and rank based scatter matrix to extract relevant patterns and further implement KNN (K- nearest neighbor classification) approach to diagnosis the diseases with severity levels. In existing method the diagnosis of diseases is not efficient and there is no classification to diagnosis the diseases. An important finding is that the proposed semi supervised clustering algorithm is shown to be effective for identifying biologically significant gene clusters with excellent predictive capability. The experimental results prove that Spatial EM based classification approach provides improved accuracy rate in disease diagnosis.

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT: Face Recognition Using Principle Component Analysis Algorithm

PRINCIPAL INVIGILATOR: S.Lavanya

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ABSTRACT

Face recognition system is an automatic process of face detection in images captured by the cameras in the artificial intelligence systems. The number of thefts and identity fraud has become a serious issue. To overcome the thefts and identity fraud, a face recognition system must be established. The scope is to develop a security access control application based on face recognition. The two primary face recognition tasks are face identification and face verification.In the identification task, an image of unknown person is matched to a Microsoft access database. In verification, the task is to accept or deny the identity client by a visitor. If the visitor at the door is recognized, the door will unlock. If the visitor is not an authorized user, the door will not be opened. If there is a need to add the visitor, images can be added to the database. PCA(Principal Component Analysis) algorithm is used for face recognition.

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT: GAIT BASED RECOGNITION USING ANW

PRINCIPAL INVIGILATOR : Mrs.K.THENDRAL

CO-PRINCIPAL INVIGILATOR: Mrs.K.THENDRAL

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ABSTRACT

Gait recognition is a useful biometric trait for person authentication because it is usable even with low image resolution. One challenge is robustness to a view change. view transformation models (VTMs) have been proposed to solve this. The VTMs work well if the target views are the same as their discrete training views. However, the gait traits are observed from an arbitrary view in a real situation. Thus, the target views may not coincide with discrete training views, resulting in recognition accuracy degradation. We propose an arbitrary VTM (AVTM) that accurately matches a pair of gait traits from an arbitrary view. To realize an ANN, we first construct 3D gait volume sequences of training subjects, disjoint from the test subjects in the target scene. We then generate 2D gait silhouette sequences of the training subjects by projecting the 3D gait volume sequences onto the same views as the target views, and train the ANN with gait features extracted from the 2D sequences. In addition, we extend our ANN by incorporating a part-dependent view selection scheme (ANN PDVS), which divides the gait feature into several parts, and sets part-dependent destination views for transformation. Experiments using data sets collected in different settings show that the ANN improves the accuracy of cross-view matching and that the ANN PDVS further improves the accuracy in many cases, in particular, verification scenarios.

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT: HIGH SECURED PASSWORD DOOR ACCESSING SYSTEM USING TOUCH PANEL

PRINCIPAL INVIGILATOR : Mr.V.SAKTHIVEL

CO-PRINCIPAL INVIGILATOR: Mr.S.PARTHIBAN

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ABSTRACT

Digital door lock security system provides security and safety to house or office owners, belongings, assets from being damaged by external agent or undesired strangers. The ARM PROCESSOR based digital door lock security system is an access control system that allows only authorized persons to access restricted area. If that password is correct the device will operate and the door will be open. But if someone enter wrong password an alarm signal will be shown .The multi password can be used for more security. The system consists of an ARM processor, which is interfaced with the input and output module, the processor acts as an intermediate medium between both of them. So the processor

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT: AUTOMATIC CT IMAGE SEGMENTATION OF THE LUNGS WITH SVM ALGORITHM

PRINCIPAL INVIGILATOR : Ms.C.VANAJA

CO-PRINCIPAL INVIGILATOR: Mr.R.GOPAL

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ABSTRACT

Lung nodule or lung lobe is a small growth in the lung that may occur usually smaller than 3cms. If the nodule growth exceeds 3cm, it may lead to higher chance of being cancerous. In recent days, diagnosis using image processing techniques has become worthwhile. The identification of the lobar fissures in CT images is very difficult even for the experienced surgeons because of its variable shape and appearance. In existing method, only the detection of presence or absence of the nodule using SVM with MR-8 classifier was carried out. This shows a novel recognition method of pulmonary nodule but the detection of intersection and overlapping in a pulmonary nodule is performed based on the concept of multilevel dapple, which partitions the image into an order less collection of small patches. This classification is carried out using neural network with MR-16 filters which provides a clear description of patches. In this project, lung segmentation technique with adaptive fissure is applied to segment the lobe, then detection level is carried out to detect the accurate location and then the classifier is used. This method aims at reducing the redundancy in image processing, in order to store and transmit the image in an efficient form. The main contribution of this project is to find lobar fissures with high accuracy and high percentage of detection rate.

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RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT: MIMO BASED SECURITY SYSTEM

PRINCIPAL INVIGILATOR : Mrs.B.JOTHI

CO-PRINCIPAL INVIGILATOR: Ms.N.JEEVITHA

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ABSTRACT

The use of multiple antennas at both transmitter and receiver to form multiple input and multiple output (MIMO) channels currently hold the potential to drastically improve wireless links spectrum efficiency or robustness, increasing capacity and the ability to increase the transmission speed in future wireless communications system. For broadband communications, OFDM turns a frequency selective channel into a set of parallel flat channels which significantly reduces the receiver complexity. In this paper, we expand the idea of spreading the transmitted symbols in OFDM systems by applying Space-Time Coded Multiple-Input Multiple-Output OFDM (STC/MRCMIMO- OFDM) systems. In the proposed systems, a multidimensional diversity, including time, frequency, space and modulation diversities, can be used, resulting in better bit error performance in AWGN channel for with and without padding as well as for with and without convolution coding. The experimental results have been verified using the MATLAB simulation; the results of simulation have been verified with the various works being carried out in this area and the results confer red to be correct. Finally, the paper addresses the current questions regarding the integration of STC/MRC-MIMO-OFDM system in practical wireless systems and standards.

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RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT: SMART PHONE BASED SURVEILLANCE SYSTEM

PRINCIPAL INVIGILATOR : Dr.M.ANAND

CO-PRINCIPAL INVIGILATOR: Ms.N.GAYATHIRI

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ABSTRACT

The Surveillance plays a crucial role in day to day life. A typical surveillance system continuously monitors its vicinity and stores the surveillance data locally. This may end up in lots of memory and energy wastage. Moreover the surveillance records are under security threat, when the surveillance system is seized or damaged by the intruders. A new design for surveillance using web camera along with the PIR (Passive Infra-Red) sensor and the MCU (Micro Controller Unit) is proposed. The PIR sensor is attached to the web camera through the MCU to detect motion. The image is captured only when the motion is detected. The proposed Intelligent Surveillance system offers cost effective, storage effective, energy efficient and secured solution as it uses the computation and communication capabilities of the web camera and the storage capabilities of local Machine.

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT: SMART PHONE BASED SURVEILLANCE SYSTEM

PRINCIPAL INVIGILATOR : Dr.R.ARANGASAMY

CO-PRINCIPAL INVIGILATOR: Mr.S.TAMILARASU

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ABSTRACT

The Surveillance plays a crucial role in day to day life. A typical surveillance system continuously monitors its vicinity and stores the surveillance data locally. This may end up in lots of memory and energy wastage. Moreover the surveillance records are under security threat, when the surveillance system is seized or damaged by the intruders. A new design for surveillance using web camera along with the PIR (Passive Infra-Red) sensor and the MCU (Micro Controller Unit) is proposed. The PIR sensor is attached to the web camera through the MCU to detect motion. The image is captured only when the motion is detected. The proposed Intelligent Surveillance system offers cost effective, storage effective, energy efficient and secured solution as it uses the computation and communication capabilities of the web camera and the storage capabilities of local Machine.

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT: VIDEO DATA ENHANCEMENT

PRINCIPAL INVIGILATOR : Dr.A.S.KANDASAMY

CO-PRINCIPAL INVIGILATOR: Mr.G.NAVEEN

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ABSTRACT

This project deals with video streaming from a source to multiple receivers in wireless networks. The video is streamed with the help of intermediate users who forward the video to others. Two main challenges affect user satisfaction in this network. The users usually have (i) different willingness to contribute (forwarding the video) (ii) different preferences regarding the video quality. To overcome the challenges, we propose a framework based on an incentive/taxation mechanism in which the forwarding users, depending on their spent energy, are paid by their corresponding receivers. The video is layered such that the more video layers are received, the higher the quality-of-experience (QoE) and the higher the price. Using a decentralized Network Coding Scheme, we define a user-specific utility function whose maximization determines the number of video layers a user wishes to receive. The utility function captures the user's preferences including the importance of the video quality to her and her willingness to contribute. Our model supports the multicast transmission by which the receivers can use a common forwarder and share the cost. Simulation results show that the proposed model not only provides a higher QoE for the users compared to the preference-agnostic models but also improves the network social-welfare.

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT: VIDEO DATA ENHANCEMENT

PRINCIPAL INVIGILATOR : Mrs.A.SAMUNDEESWARI

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ABSTRACT

This project deals with video streaming from a source to multiple receivers in wireless networks. The video is streamed with the help of intermediate users who forward the video to others. Two main challenges affect user satisfaction in this network. The users usually have (i) different willingness to contribute (forwarding the video) (ii) different preferences regarding the video quality. To overcome the challenges, we propose a framework based on an incentive/taxation mechanism in which the forwarding users, depending on their spent energy, are paid by their corresponding receivers. The video is layered such that the more video layers are received, the higher the quality-of-experience (QoE) and the higher the price. Using a decentralized Network Coding Scheme, we define a user-specific utility function whose maximization determines the number of video layers a user wishes to receive. The utility function captures the user's preferences including the importance of the video quality to her and her willingness to contribute. Our model supports the multicast transmission by which the receivers can use a common forwarder and share the cost. Simulation results show that the proposed model not only provides a higher QoE for the users compared to the preference-agnostic models but also improves the network social-welfare.

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT: ONLINE MONITORING OF GEO LOGICAL CO2 STORAGE & LEAKAGE BASED ON WSN

PRINCIPAL INVIGILATOR : Mr.A.KUMARAVEL

CO-PRINCIPAL INVIGILATOR: Ms.S.ASWINI

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ABSTRACT

In olden days, there are so many industries emitting the harmful gases which affect the human beings. The most harmful gases among all of them are CO2, methane gas, NO2, etc. As per World Health Organization assessment of the burden of disease, as a result of pollution more than 2 million premature deaths annually will be attributed to the results of urban out of doors pollution and indoor pollution So it is necessary to monitor these gases that leaks from industries through GSM. This system is developed to monitor the harmful gas leakage such as CO2, NO2 , temperature and fuel amount from industries by its corresponding sensors interfaced with the Arduino controller. LM35 temperature sensor is used. LED is used to indicate the emission level.MQ6 gas sensor is used. GSM is used to communicate with the server to convey the emission level. The monitoring GSM clients are developed using a embedded programming language. The system based on AVR Single Chip(AT mega 168) microcontroller and wireless sensor networks is developed. The system has advantages of low power consumption, good robustness and extended flexible. The Analog output from the sensor is monitored through the Arduino software.

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT: TOUCH SCREEN BASED INDUSTRIAL CRANE CONTROLLING USING ARM PROCESSOR

PRINCIPAL INVIGILATOR : Mrs.E.SANGEETHA

CO-PRINCIPAL INVIGILATOR: Mr.G.NANDHAKUMAR

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ABSTRACT

The crane control with the help of touch screen sensor and a graphical LCD to provide a user-friendly environment. There is no need of a person to do it manually. The type of control operation will be displayed automatically on the touch screen and we can directly choose the desired function with the help of touch screen. Touch screens provides fast access to any all types of digital media, with no text-bound interface getting in the way, fast input can control with better service. Using a touch interface effectively increase operator accuracy, reduce training time, and improve overall operational efficiencies. Owners familiar with the icon system appreciate touch screens that make automation systems user friendly. The system consists of an ARM processor, which is interfaced with the input and output module, the processor acts as an intermediate medium between both of them. So the processor can be termed as a control unit. The input module is nothing but a touch screen sensor which is placed on GLCD to have graphical image display, which takes the input from the user and provide the same to the processor. The output module is RF module which makes the communication between user and crane. The processor also takes the responsibility to display the list of control operations on the graphical LCD at the receiving end, the selected operation will be displayed on GLCD.

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT: FPGA IMPLEMENTATION OF AREA EFFICIENT AND HIGH SPEED FIR FILTER

PRINCIPAL INVIGILATOR : Ms.R.KARTHIKA

CO-PRINCIPAL INVIGILATOR: Mr.G.THIRUPATHI

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ABSTRACT

Linear phase Finite Impulse Response (FIR) filter are widely used in digital signal applications such as speech coding, image processing, multi rate systems. The complexity of an FIR filter is dominated by the multiplication of a large number of filter coefficients by the filter input. Over the years, many high-level synthesis algorithms and filter architectures have been introduced in order to design FIR filters efficiently. Where the filter has two commonly used structures are considered. First is a direct form which has the structure the multiplication block followed by the time shifted form. Second is transposed form which has the input is common to the all multiplier blocks. After multiplying with the coefficient, the time shifting operation is performed. This paper address the concept of Multiplierless multiplication on the FIR filter structure for reduces the area and power. Here we use two techniques to eliminate the common multiplier. For each structure, Direct form of FIR filter – Constant Array Vector Multiplication (CAVM). Transposed form of FIR filter – Multiple Constant Multiplication (MCM).

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT: HIGH SPEED ARCHITECTURE FOR FINDING FIVE MINIMUM VALUES

PRINCIPAL INVIGILATOR : Ms.P.PADMALOSHANI

CO-PRINCIPAL INVIGILATOR: Mr.G.DHANASEKARAN

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ABSTRACT

This project work presents an area-efficient tree architecture for finding the first two minima as well as the index of the first minimum, which is essential in the design of a low-density parity check decoder based on the min–sum algorithm. The proposed architecture reduces the number of comparators by reusing the intermediate comparison results computed for the first minimum in order to collect the candidates of the second minimum. As a result, the proposed tree architecture improves the area–time complexity remarkably.

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RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT: ENHANCED BEE SWARM OPTIMIZATION ALGORITHM FOR DYNAMIC ECONOMIC DISPATCH

PRINCIPAL INVESTIGATOR: K. K.POONGODI

CO-PRINCIPAL INVESTIGATOR: R. ELAKIYA

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ABSTRACT

Enhanced bee swarm optimization method to solve the dynamic economic dispatch problem of thermal units considering the valve-point effects, ramp-rate limits, and the transmission power losses. The bee swarm optimization algorithm unlike most of the population based algorithms employs different moving patterns to search the feasible solution space. This property makes an effective balance between exploration and exploitation. Different modifications in moving patterns of the bee swarm optimization method are proposed to search the feasible space more effectively.

The efficiency of the method is validated using three test systems with 10, 30, and 60 units, including 240, 720, and 1440 design variables. The latter can be considered as a large-scale power system. The results are compared with other reported works in this area and found to be superior. Index Terms Dynamic economic dispatch (DED), enhanced bee swarm optimization (EBSO), ramp-rate limits, valve-point effects.

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT: INTELLIGENT SYSTEM USING PIR AND WEIGHT SENSOR TO AVOID ACCIDENT

PRINCIPAL INVESTIGATOR: Dr.B.MURALI BABU

CO-PRINCIPAL INVESTIGATOR: S.GOVINDA SAMY

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ABSTRACT

Now days India is a developing country and safety of road is still in a premature stage. Accident severity is increasing in order due to increasing in vehicle population. This is one of the new method to reduce accident by using PIR sensors and load cell sensortechnology. Pyro electric infrared (PIR) sensors are widely used as a presence trigger, but the analog output of PIR sensors depends on several other aspects, including the distance of the body from the PIR sensor, the direction and speed of movement, the body shape and gait.

The load cell sensor is used to measure the weight of human and it transfer the analog signal to digital signal form Arduino board. The objective of this project is to improve the technology to avoid the accidents at night time on highways and hills stations. The human weight is detecting by load cell sensor. Weight are detected then switched to turn on the PIR sensor that sensor observe theinfrared radiation of human being.

In this project mainly to save human man life. Microcontroller continuously monitors the output from the sensor module.Were PIR sensor programed to order glow the LED lights and laser lights. That lights are worked in different whether conditions. Normal day night led lights are glow on road area at the same time fog condition laser are produce a danger gate single for that stage Total kit under controlled by solar battery system. Because it could be taken this kit place to place easy. And it installed easily and low cost

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT: SMART OBSTACLE DETECTOR FOR BLIND PERSONS

PRINCIPAL INVESTIGATOR: K. K.POONGODI

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ABSTRACT

Obstacle Detector for blind person is one of the new emerging automation technology, which helps the visually impaired people during their mobility. Normally, blind peoples use a traditional cane as a tool for directing them from one place to another. It is an latest technology developed to avoid the traditional cane and it can be replaced with gloves.

By using this method , it is possible to extend the support for the people with visually impaired can able to move from one place to another like the normal peoples. Smart Obstacle Detector helps blind person in moving and allowing them to perform their work easily and comfortably.

Ultrasonic Sensor is used to sense the objects and help the blind people to move freely and also to find dugs in ground . 3-axial gyroscope accelerometer is used which will give them balance and remain them in a stable position.

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT: ECOFRIENDLY DATA TRANSMISSION IN VISIBLE LIGHT COMMUNION

PRINCIPAL INVESTIGATOR: G.UMA MAHESWARI

CO-PRINCIPAL INVESTIGATOR: V.SATHIYAPRIYA

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ABSTRACT

In recent years, there is a rapid development in the solid state light-emitting diode (LED) materials which gave way for the next generation data communication known as visible light communication. VLC has a promising future and it acts as a complement to the present RF communication by achieving larger bandwidth and high data rate. Visible Light Communication is an optical wireless communication technology which uses spectrum of wavelength from 380 nm to 750 nm and is standardized by Institute of Electrical and Electronics Engineers (IEEE). VLC using LEDs is a promising technology to supplement the existing RF communication. LED has properties such as energy efficient, low cost, high brightness and long life time. Hence, in VLC, the conventional lightings such as incandescent lamps and fluorescent lamps are replaced by the LEDs.

VLC offers secure communication between the rooms because it can be easily blocked by walls. These days LEDs are used in many places such as traffic lights, automobiles, indoor and outdoor lightning. On-off transient time of LED is short which offers high data rate transmission in VLC. At present, the day to day activities use lot of LED based lights for illumination, which can also be used for communication because of the advantages like fast switching, high power efficiency and safe to human vision. Hence, this paper presents about eco friendly data communication through visible light which consists of the white LEDs that transmit audio signals to the receiver. The receiver circuit consists of solar panel connected with the amplifier and speakers to recover back the amplified version of original input signal.

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT: OPTIMAL POWER FLOW IN MICROGRIDS WITH ENERGY STORAGE

PRINCIPAL INVESTIGATOR: A.UDHAYA KUMARI

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ABSTACT

Energy storage may improve power management in microgrids that include renewable energy sources. The storage devices match energy generation to consumption, facilitating a smooth and robust energy balance within the microgrid. This paper addresses the optimal control of the micro grid's energy storage devices. Stored energy is controlled to balance power generation of renewable sources to optimize overall power consumption at the microgrid point of common coupling. Recent works emphasize constraints imposed by the storage device itself, such as limited capacity and internal losses.

However, these works assume flat, highly simplified network models, which overlook the physical connectivity. This work proposes an optimal power flow solution that considers the entire system. The storage device limits, voltages limits, currents limits, and power limits. The power network may be arbitrarily complex, and the proposed solver obtains a globally optimal solution.

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT: VERTICAL AXIS WIND ENERGY BY USING TURBINE

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ABSTRACT

A type of wind turbine here the main rotor shaft is set transverse to the wind (but not necessarily vertically) while the main components are located at the base of the turbine. This arrangement allows the generator and gearbox to be located close to the ground, facilitating service and repair. VAWTs do not need to be pointed into the wind which removes the need for wind-sensing and orientation mechanisms. Major drawbacks for the early designs (Savonius, Darrieus, and giro mill) included the significant torque variation ripple during each revolution, and the large bending moments on the blades. Later designs addressed the torque ripple issue by sweeping the blades helically.

A VAWT tipped sideways, with the axis perpendicular to the wind streamlines, functions similarly. A more general term that includes this option is "transverse axis wind turbine" or "cross-flow wind turbine.

Renewable energy options have many people around the world talking as they desire to reduce their costs of energy while also doing their part to protect the world. Rising sea levels and escalating pollution levels has generated worldwide interest and has given rise to new wind turbine.

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RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT: ENHANCEMENT ON AMMONIA SENSING PROPERTY BY SPRAYING ZNOTHROUGH DOUBLE DOPING FOR SOLAR CELL APPLICATION

PRINCIPAL INVESTIGATOR: Dr.B.MURALI BABU

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ABSTRACT

The preparation and characterization of highly selective room temperature ammonia sensor and solar cell applications using Nano structured undoped ZnO, ZnO:Cu, ZnO:Al, Cu:Al:ZnO thin films were fabricated by nebulizer spray technique. Morphology and structure of the undoped and doped films were analyzed by field emission scanning electron microscopy (SEM) and X-ray diffractometer (XRD) characterization techniques.

The presence of zinc, copper, aluminium and oxygen in the sample was confirmed with Fourier Transform Infrared spectroscopy (FTIR). All the films exhibited average optical transmittance of 90 % in the visible region, suitable for transparent electrode applications. The overall quality of the fabricated films was confirmed from photoluminescence (PL) studies.

The PL and surface morphological studies along with the elemental analysis showed the increase of Cu and Al diffusion into the ZnO lattice which was consistent with the concentration of in the starting solution. The results of the analysis of physical properties of simultaneously doped ZnO films proved that these films might be considered as promising candidates for sensor, solar cells and other opto- electronic applications.

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RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT: SELF POWERED RUNWAY ENERGY GENERATION

PRINCIPAL INVESTIGATOR: A.RATHINAM

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ABSTRACT

This project is based on load management system. Normally electric power is generated from power plants such as thermal power plants, wind power plants, solar power plants, tidal power plants, biomass power plants and etc. The power system consists of generator, transmission lines and distribution. The generator is used for generating the power and this power is distributed through the transmission line to the substations. This distributed power utilized in agriculture, industries, factories, commercial purpose and domestic purpose

The generated power cannot be stored. So it is utilized by consumers regularly. Due to the utilization of power, power demand is created. Mainly urban areas, it depends on increase of the population. Sometimes power demand is also created due to seasonal and damage of the equipments such as boilers, transformer in power plants and also short circuits. This above problem can be solved by using load management system by wireless control technique.

The load sharing system is mainly used in domestic purpose. By using this technique the load sharing is separated as per the particular amps i.e. 2.5A, 5A these are connected with the relays. When the demand is created, the load value is changed with the help of relay depends upon the demand. By using the low power, the power is supplied continuously without disconnecting the electric supply. This whole process is controlled by wireless system. This method is applicable only for low power application. This project will be developed by proto type model.

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT: LOAD MANAGEMENT SYSTEM USING WIRELESS CONTROL

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ABSTRACT

This project is based on load management system. Normally electric power is generated from power plants such as thermal power plants, wind power plants, solar power plants, tidal power plants, biomass power plants and etc. The power system consists of generator, transmission lines and distribution. The generator is used for generating the power and this power is distributed through the transmission line to the substations. This distributed power utilized in agriculture, industries, factories, commercial purpose and domestic purpose

The generated power cannot be stored. So it is utilized by consumers regularly. Due to the utilization of power, power demand is created. Mainly urban areas, it depends on increase of the population. Sometimes power demand is also created due to seasonal and damage of the equipments such as boilers, transformer in power plants and also short circuits. This above problem can be solved by using load management system by wireless control technique.

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT: SPEED CONTROL OF PMDC MOTOR USING DIRECT DRIVE(TNPL)

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ABSTRACT

The objective of this project is to control the speed of the Permanent magnet DC motor through microcontroller with help of fuzzy logic. The scope of this project is to make the industry automation the equipment and machineries should be controlled automatically. In this project we control the PMDC motor automatically through microcontroller with help of fuzzy logic. So we can control the machineries which involving this motor accurately. By making the industrial automation we can increase the production rate. In this project microcontroller is interfaced with fuzzy logic. The desired speed is entered to microcontroller through key board. Then microcontroller sends the corresponding digital signal to SCR control unit.

The control unit is constructed with DAC and SCR control circuit. DAC converts digital to analog signal, it receives the digital signal from the PC and converts the corresponding analog signal. Then the converted analog signal is given to SCR control circuit. Depending on the analog signal SCR firing angle is varied. Through this motor supply voltage is varied.

The motor speed is monitored by U-SLOT sensor. U-SLOT sensor is the type of transducer which generates voltage pulse whenever it senses the metal. In this project U-SLOT sensor is fixed in the motor shaft. When motor is rotating, the U-SLOT sensor senses the metal and generates the voltage pulse. Then the voltage pulse is given to signal conditioning unit in which the voltage pulse are converted into digital signal and given to microcontroller. In microcontroller we have already programmed, it receives measured speed signal and compared with desired entry speed, then compared error signal is given to control unit. Through this way PMDC motor is controlled to our desired set speed.

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT: HYBRID POWER GENERATION SOLAR AND WIND

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ABSTRACT

This report represents the results of solar and wind hybrid model system. The solar and wind system was used as two different sources. The energy generated was divided into two primary and secondary. Primary source was used to supply the demand in the power station. Secondary source was used to backup the primary source supply. It requires the additional circuits to maintain the constant and stable output source. The solar system is mostly used as secondary source and wind power generation is used as primary source of supply. In this hybrid system the efficiency of energy delivered is very low. The solar system is not used to his total power generation. So, the power generated by wind system is only used for reduction of power demand. By using this hybrid system we can use only wind system to reach a good efficiency.

This system is modified and rectified all the demerits of solar and wind hybrid system. The efficiency of the system is improved and produce the maximum amount of electrical energy. One of the primary needs for the humans is the electricity supply to fulfill his day to day works. The electrical energy can be generated by Conventional and Non-Conventional energy sources.

In future the Renewable energy source is used in the maximum demand due to shortage of raw material. So, the major renewable sources are Solar and Wind. In this project hybrid Solar -Wind Power system is used to generate the power supply. Here, electric DC energies produced from photovoltaic and wind turbine systems are given to the battery to store energy. The hybrid solar and wind were generating through the separate two system to support the major generating system. In this model the solar and wind system are combined power generating system. The solar system is fully built in the body of wind system. The solar panel is also placed at rotating blades. This method will help in solar panel cooling process. The wind mill can rotate to the position of the wind flow direction. It will increase the electrical energy production. The

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RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT: AGRICULTURAL ELECTRICAL MOTOR SAFETY

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ABSTRACT

This project provides an easy and efficient technique to water the fields whenever the farmer wishes to, without going to the field or to the pump set. This system is entirely an automated product. The set up consists of microcontroller, GSM serves as an important part as it is responsible for controlling the irrigation on field and sends to the receiver through coded signals.

The GSM modem performs the task of calling or receiving the call to/from the predefined number and intimates that the power is available to the motor. Now, the user, after receiving the call, can press the predefined number to start the motor so as to pump water to the field. This number will be received by the GSM modem and this data is passed to the processor for further processing. The 3-ϕ detector circuit is used in this project to check whether the 3-ϕ power is available for the motor or not.

In case, if it not available, the 3-ϕ detector circuit identifies this and immediately switches OFF the motor and sends a predefined message to the user mobile number as an indication. Similarly the microcontroller continuously monitoring the temperature of the motor, soil moisture, and water level of the well. Based on this information microcontroller controls the motor and it will send the message to the user. The microcontroller, after receiving the input from the user through GSM modem, switches on/off the motor as per the user requirement.

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RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT: DESIGN OF TRANSFORMER LESS SINGLE PHASE PHOTOVOLTAIC INVERTER WITHOUT BATTERY FOR DOMESTIC APPLICATION

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ABSTRACT

A main objective of this project designing a transformer less single phase photo voltaic inverter without battery for low power application, for the purpose of reducing a cost of the solar electrical system. There also used MPPT system for maintained an output of solar penal at constant. A DC-DC converter nothing but step-up converter is a power converter with an output dc voltage greater than its input dc voltage. The solar radiation never remains constant. It keeps on varying throughout the day.

The need of the hour is to deliver a constant voltage to the grid irrespective of the variation in temperatures and solar irradiation. We have designed a circuit such that it delivers constant and stepped up dc voltage to the load. So we coupled the PV array with maximum power point trackers (MPPTs) play an important role in photovoltaic (PV) power systems because they maximize the power output from a PV system for a given set of conditions, and therefore maximize the array efficiency.

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RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT: FABRICATION AND CHARACTERIZATION OF ZINC OXIDE NANOSTRUCTURES FOR GAS SENSORS AND SOLAR CELL APPLICATIONS

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ABSTRACT

ZnO nanoparticles as gas sensors have a property of changing the electrical conductivity of the sensing elements on exposure to gas atmosphere. The numeric density and size distribution of the particle plays a key role in gas sensing application. The gas sensing mechanism mainly depends upon the morphology, ion occupancy and operating temperature, which helps in absorbing the OH-groups on the surface of the oxide materials.

The methane sensing measurements was carried on the ZnO pellet with silver pasted electrodes on the both the ends. The changes in the electrical resistance was used to measure the methane response at the different temperature in the range of 25 degree to 45 degree Celsius at an interval of 5 degree Celsius under an ethanol concentration of 25.02, 50.05, 75.08, 100.11 and 150.17 ppm.

These results showed that he indium zinc oxide film based methane sensor has high response such as quick recovery time and selectivity to the methane.

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RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT: SPACE VECTOR PULSE WIDTH MODULATION BASED MODIFIED MULTILEVEL INVERTER TOPOLOGY

PRINCIPAL INVESTIGATOR: A.RATHINAM

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ABSTRACT

The project provides a brief overview of two different types of Cascaded Multilevel Inverter with completely new topologies. Multilevel voltage source inverter is recognized as an important alternative to the normal two level voltage source inverter especially in high voltage application. Using these modified multilevel techniques, the amplitude of the voltage is increased, stress in the switching devices is reduced and the overall harmonics profile is improved. Application of multilevel inverters for higher power purposes in industries has become more popular.

This is partly because of high-quality output waveform of multilevel inverters in comparison with two-level inverters. Here, initially a new topology for Cascaded Multilevel inverter is proposed. The single dc sources are used for the operation of multilevel inverter. The proposed multilevel inverter uses reduced number of switching devices. It uses only 4 switches. Special attention has been paid to obtain PWM gate signals and to obtain optimal structures regarding different criteria such as number of switches, standing voltage on the switches; number of dc voltage sources, etc.

The proposed multilevel inverter has been analyzed in both symmetric and asymmetric conditions. The simulation results of a 5-level output signal are obtained based on the proposed multilevel inverter have been presented. In this project new topology is proposed, by using MATLAB SIMULINK programs. The major problem associated with existing configurations of multilevel inverter is that it uses 6-8 switches for generating 5-level output in the inverter. It increases the complexities in gate driver circuitry, increased switching operation and losses. This model overcomes the shortcomings of existing models.

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RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT: VEHICLE POLLUTION AND STATUS MONITORING WITH ACCIDENT DETECTION USING RFID

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ABSTRACT

The proliferation of technology paves way to new kind of devices that can communicate with other devices to produce output mostly on wireless communication. Degradation of air quality in cities is the result of a complex interaction between natural and anthropogenic environmental conditions. With the increase in urbanization and industrialization and due to poor control on emissions and little use of catalytic converters, a great amount of Particulate and toxic gases are produced.

In order to monitor air pollution on roads and track vehicles which cause pollution over a specified limit. Increasing number of automobiles is a serious problem that has been around for a very long time. In the vehicle unit periodic monitoring of the sensor values are noted and send to the laptop via server. Along with the sensor values, vehicle Fitness Certificate(FC) details, insurance details, periodic service details are viewed on the laptop. If any increase in the sensor readings/date expired of any insurance/ FC/ service, an alert will be send to the owner. By using this technology we can periodically monitorthe persons with vehicle FC details, insurance details, periodic service details, etc. along with this carbon monoxide(CO) content is also inspected in order to reduce CO emission in all vehicles.

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT: SPEED CONTROL AND TORQUE MONITORING OF INDUCTION MOTOR BY USING ARDUINO KIT

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ABSTRACT

The speed of the single phase induction motor is controlled with the help of GSM technology. This is convenient method for control the speed of the single phase induction motor in the industrial application .The speed of the single phase motor can be controlled from anywhere through SMS. This project designed with Microcontroller, GSM technology, arduino board, PWM, MOSFET and Single phase Induction motor.

GSM modem is always interfaced with the microcontroller. To send the SMS like "*" with our desired speed, for an example "*1000" to the GSM that's connected in the microcontroller. GSM sends this information to microcontroller. The Arduino microcontroller is the flash type reprogrammable microcontroller which receives the signal and the corresponding information is displayed on the LCD display. In microcontroller incoming signal is compared with actual speed value, and then the error signal is given to PWM.

The PWM signal is given to the control circuit. The control circuit output is connected single phase induction motor. The motor speed is measured by the proximity sensor. The proximity sensor is the one type of transducer. It detects the metals and generates the voltage pulse. The metal plate fixed in the motor shaft. So whenever the metal plate is crossed, the proximity sensor generates the pulse. The corresponding pulse signal is given to microcontroller. Now the microcontroller controls the pulse rate and the LCD display monitors the speed of the motor.

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RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT: WIRELESS LIVE BROADCASTING USING QUAD COPTER

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ABSTRACT

This research focused on develops a remotely operated Quad copter system. Quad copter is also called Quad rotor Helicopter or Quad rotor, it is a Multi rotor helicopter that is lifted and propelled by Four rotors. In early days of flight, quad copter were seen as possible solutions to some of the persistent problem in vertical flight; torque-induced control issues can be eliminated by counter-rotation and the relatively short blades are much easier to construct this vehicle were, the first successful heavier than air vertical take of and landing(VTOL) vehicles. Quad copters differ from convectional helicopters which use rotors which are able to vary the pitch of the blades dynamically as they move around the rotor hub. The Quad copter is controlled through graphical user interface (GUI). Communication between GUI and Quad copter is done by using wireless communication system. This quad copter generally use two pairs of identical fixed pitched propellers, two clockwise(CW) and two counter-clockwise(CCW).The Quad copter balancing condition is sensed by FY90 controller and IMU 5DOF sensor. For smooth landing, Quad copter is equipped with ultrasonic sensor. All signals from sensors are processed by KK2.0 controller board. Output from KK2.0 controller board used to control Quad copter propellers. GUI is designed using Visual Basic 2008 Express as interface between control base and Quad copter. It is Independent of variation of the speed, each rotor to achieve control.

The experiment shows that Quad copter can hover with maintain it balancing and stability. Quad copter can accept load disturbance up to 250g during it hover condition. Maximum operated time of Quad copter is six minutes using 2200mAh Lipo battery and operate time can be increase by using largest battery capacity.

In the late 2000s, advances in electronics allowed the production of cheap lightweight flight controllers, accelerometers(IMU),global positioning system and cameras. The flight controller system has the specification of cameras and gyro sensor.

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RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT: TRACKING POSITION AND HEALTH MONITORING OF SOLDIERS

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ABSTRACT

In today's world the security of the nation is depends up on the enemies' warfare and so the safety of the soldiers is considered as vital role in it. Concerning the soldiers safety there are many instruments to view their health status as well as ammunitions on the soldiers. In the same way for soldier's security system, position-sensor helps to monitor the soldier's position based up on their angles.

For health monitoring the transmission modules and processing capabilities, can facilitate low-cost wearable unobtrusive solutions for health monitoring. GPS used to log the longitude and latitude so that direction can be known easily. These devices are being added into soldier's vests and uniforms so that field commanders can track their soldier's movements and position in real time. GSM module can be used for effective range of high-speed transmission .So by using these equipment's we are trying to implement the basic lifeguarding system for soldier in low cost with high reliability.

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RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT: CONTROLLING OF DC MOTOR SYSTEM USING VOICE COMMAND

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ABSTRACT

To design and develop the Motor control system based on Voice using embedded plat form. Now a day wireless technology has rapid growth in wide areas and same in the automation technology. Motor is operate with help of voice command through android phone. The communication between the voice and the controller is takes place with the help of Bluetooth USART communication. The receiver side controller generates a control signal for the driver circuit to drive the motor. Arduino Uno microcontroller is used here to implement the project.

This introduces a new approach to control and drive the DC motor, using speech recognition. The speech signal can be provided through microphone that is connected to computer. A DC motor connected through microcontroller can be driven in forward or reverse direction at different speeds, as well as it can be stopped by giving speech command.

Voice is the most popular and easy tool for communication and simple tool for man machine interface, as it is user friendly and wireless. In this study the hardware of voice controlled prosthetic arm was designed and implemented. For man machine interface through speech a voice recognition module was used, which was initially trained for five voice commands to control the movements of hand. This prosthetic hand having two degrees of freedom was designed with the help of geared DC motor, which has the ability of simply picking up and placing the objects.

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RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT: PID BASED AUTOMATIC FURNANCE CONTROL

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ABSTRACT

To confront these challenges successfully, the industry must go beyond safety protocols, training and protective equipment. While these are necessary, companies should strive to develop a pervading culture of safety based on a commitment to safety excellence that improves safety performance, operational effectiveness and business performance. In any modern structure or building of the world, safety has the highest priority and therefore fire detection system is one of the basic components of the structure.

Flames, smoke, gas emissions, heat – fire have many facets. All signals converge in the fire alarm control panel, which warns people at risk and the fire department and reliably provides all relevant information to the competent bodies. The sensitivity of the heat and smoke sensor can be increased and decreased manually here by making the fire alarm system more or less sensitive. In addition, the fire detection technology controls and monitors in many cases all fire protection systems in the object and electrically triggers the extinguishing systems.

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RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT: GSM BASED MESSAGE SCROLLING LED DISPLAY

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ABSTRACT

Wireless communication has announced its arrival on big stage and the world is going mobile. We want to control everything and without moving an inch. This remote control of appliances is possible through Embedded Systems. The use of "Embedded System in Communication" has given rise to many interesting applications that ensures comfort and safety to human life.

The main aim of the project will be to design a SMS driven automatic display toolkit which can replace the currently used programmable electronic display. It is proposed to design receive cum display toolkit which can be programmed from an authorized mobile phone. The message to be displayed is sent through a SMS from an authorized transmitter.And also we have included message saving feature which can able to save up to three messages.

If the second message arrives during the display time of the second message then both the messages will be scrolled at a time and likewise the third message also.so we can able to display three messages at a time and the message overflow will also be controlled by this. And we also included message replacing features.Looking into current trend of information transfer in the campus, it is seen that important notice take time to be displayed in the notice boards. It is proposed to implement this project at the institute level. The electronics displays which are currently used are programmable displays which need to be reprogrammed each time.

This makes it inefficient for immediate information transfer, and thus the display board looses its importance. The display board programs itself with the help of the incoming SMS with proper validation. Such a system proves to be helpful for immediate information transfer.

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT: LIGHTING MANAGEMENT SYSTEM

PRINCIPAL INVESTIGATOR: S.RAMACHANDRAN

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ABSTRACT

Our project is entitled as " LIGHTING MANAGEMENT SYSTEM". The system is designed and constructed to manage total roof light circuit, the system implemented for savings the power by proper utilization of roof lights& all roof lights in each bay are controlled from one place. It's a fully programmed system. This project mainly used in the large scale industries because metal halide lamp used, it consumes 400 watts power. On working period, all lights are switched on, but after working period minimum number of lights can be used to reduce the power usage. This project operates in two modes ,namely auto mode and manual mode and also CFL lights had been used foe emergency purposes. In holidays only CFL lights are glow to utilize minimum power.

All lighting controls had been given to the security officer. so that they can also control the lighting system in any case of emergencies. Power saving in week days by switching off the majority roof lights after 1 clock. Selected lights(ONLY 18%) remaining ON for NDT& other operations. In day time the light intensity inside the bay was monitor continuously, lux level reduced, lighting will switched ON either partial or full light depends on lux level. Day light Savings included in program, its used to vary the ON & OFF time setting for Roof lighting as per atmospheric condition. In the time of supper partial lighting was switched off in all bays(optional).

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT: OPTIMAL PROTECTION CO-ORDINATION FOR MICROGRIDS WITH GRID CONNECTED AND ISLANDED CAPACITY

PRINCIPAL INVESTIGATOR: Dr.A.AMSAVALLI

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ABSTRACT

Micro grids are maturing technically as well as commercially over the past few years. Micro grids have inherent capability of surviving the grid failure to ensure the availability which results in very high fault current with grid connected operation and very small fault current in islanded operation. Most of the renewable source present in the micro grids are inverter based and hence their contribution to fault current depends on controllers. Contribution of fault current from the Storage devices – Depends on the storage device opted which results in fault current ranges from very small value about the full load current to the maximum fault current close to equipment short time rating.

Detecting and isolating the fault in micro grid is essential to maintain the reliability and availability. Prolonged faults not only damage the equipments but also results in stability problems. An idea is proposed in this thesis to detect and isolate the faults in microgrids with various grid topologies utilizing modern numerical relay features.Recent developments in relays make it possible to have good communication, measurements, multiple group settings etc., Many of the features of the modern numerical features are too costly for the owners which does not add any value for conventional power system.

At present Relay settings are done as offline studies and there is no automated approach in most of the commercial available power system simulation software ex. Easy Power, ETAP, SKM, CYME, Power World etc., few softwares like MicroPower attempted for automation but fails to provide satisfactory results under various Grid Topologies. All optimization attempted academically treat only PSM & TDS as optimization parameters.Proposed methodology solves all the issues related to the maloperation of a real time micro grid system.

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RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT: IMPLEMENTATION OF MULTI-DIRECTIONAL OMNI WHEELED WHEEL CHAIR BY USING JOYSTICK

PRINCIPAL INVESTIGATOR: G.UMA MAHESWARI

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ABSTRACT

The development of multi directional 4 omni wheeled wheel chair is proposed for emphasizing the mobility movement design. In existing system the wheelchair was improved manually but in the proposed system it will be activated by the help of joystick. Here it does not need man power for its movement. The vehicle uses four Omni-wheel to facilitate movement in all directions including sideways. This is used for physically challenged persons.

The wheelchair takes input from the user usually in the form of a small joystick and translates that motion to the wheels to move the person in the desired direction. The wheel chair is undertaken to assess the actual user conditions, aspirations and medical requirements. Its application is found in the programming of arduino mega 2560 to control the wheel chair movement by joystick.

The movement of wheel chair can be controlled in all directions such as forward, reverse, left, right and random. An obstacle blocks the user commanded way in situations of sudden variations in translational and rotational velocity. The benefits from the results of newly developed driving assistance module is provided.

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RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT: AUTO METRO TRAIN SHUTTLE BETWEEN STATIONS

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ABSTRACT

This project deals with autonomous metro train proposed system, by using AT89C51 microcontroller. In this system the arrival of the train in particular station is obtained by the RF transmitter and receiver section. Whenever the train arrives a station RF receiver in the train gets the station's RF value and the trains get stopped automatically. After the train stops the door gets open and closed after particular time.

In the door section counting system is assembled to check whether the passenger entering or leaving in a train, after that the door gets closed automatically. Passengers count and the station details are displayed in the LCD. The movement of a train is done by a DC motor which is interfaced with the controller. The train incorporates a buzzer to alert the passengers about opening and closing of the door.

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RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT: WIRELESS CONTROL QUAD COPTER WITH SOLAR PANEL

PRINCIPAL INVESTIGATOR: A.RATHINAM

CO-PRINCIPAL INVESTIGATOR: S.RATHINAVEL

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ABSTRACT

This research focused on develops a remotely operated Quad copter system. Quad copter is also called Quad rotor Helicopter or Quad rotor, it is a Multi rotor helicopter that is lifted and propelled by Four rotors. In early days of flight, quad copter were seen as possible solutions to some of the persistent problem in vertical flight; torque-induced control issues can be eliminated by counter-rotation and the relatively short blades are much easier to construct this vehicle were, the first successful heavier than air vertical take of and landing(VTOL) vehicles. Quad copters differ from convectional helicopters which use rotors which are able to vary the pitch of the blades dynamically as they move around the rotor hub. The Quad copter is controlled through graphical user interface (GUI). Communication between GUI and Quad copter is done by using wireless communication system. This quad copter generally use two pairs of identical fixed pitched propellers, two clockwise(CW) and two counter-clockwise(CCW).

The Quad copter balancing condition is sensed by FY90 controller and IMU 5DOF sensor. For smooth landing, Quad copter is equipped with ultrasonic sensor. All signals from sensors are processed by KK2.0 controller board. Output from KK2.0 controller board used to control Quad copter propellers. GUI is designed using Visual Basic 2008 Express as interface between control base and Quad copter. It is Independent of variation of the speed, each rotor to achieve control. The experiment shows that Quad copter can hover with maintain it balancing and stability. Quad copter can accept load disturbance up to 250g during it hover condition.

Maximum operated time of Quad copter is six minutes using 2200mAh Lipo battery and operate time can be increase by using largest battery capacity. In the late 2000s,advances in electronics allowed the production of cheap lightweight flight controllers, accelerometers(IMU),global positioning system and cameras. The flight controller system has the specification of cameras and gyro sensor.

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT: RAILWAY TRACK CRACK SECURITY BY GSM WITH IMAGE PROCESSING

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ABSTRACT

The main objective of this project is to design a railway track security system, which is used to detect the cracks on the railway track at any moment and to send that information to a nearby station by using GSM technology through SMS.

This system uses a ATMEGA 2560 of the arduino family and a rectified power supply. Here the GSM modem is connected to the controller through a level shifter for sending the data. The railway track and GSM modem status are displayed on the LCD display, which is interfaced to the microcontroller.

This system is based on a prototype of a railway track which is used this for demonstration purpose only. The image processing is used from the MATLAB. The image segmentation process is made to analyse the crack in track.

Whenever there is a variation in the predefined data with the cracked track, and the information pertaining to the fault is sent to the controller through transistor logic. The ATMEGA 2560 compares this data with the predefined data and if it finds the data matching, then, it sends the corresponding information via SMS to the nearby station through a GSM modem.

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RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT: HUMAN HEALTH MONITORING MOBILE APPLICATIONS USING WIRELESS SENSOR BASED EMBEDDED SYSTEM

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ABSTRACT

For the medical professionals it becomes important to continuously monitor the conditions of a patient. In a large setup like a hospital or clinical center where a single doctor attends many patients, it becomes difficult to keep informed about the critical conditions developed in each of the patients. This project provides a device which will continuously monitor the vital parameters to be monitored for a patient and do data logging continuously. If any critical situation arises in a patient, this unit also raises an alarm and also communicates to the GSM.

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT: LOW VOLTAGE MOTOR DESIGN AND APPLICATION

PRINCIPAL INVESTIGATOR: K. K.POONGODI

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ABSTRACT

Electrical energy is the back bone of our country. The demand in electrical power proves it. More recently arrival of new power plants cannot results in producing electrical energy as per our country's requirement. Conserving electrical energy is mandatory at this present situation. Conserving electricity serves the double purpose of helping stop global warming and saving a lot of money over time. Power cuts, consumer tariff and lots were changed in recent years based on electricity. But wasting electricity has never. Electrical motors, pumps, household appliances, electronic appliances consuming high electrical power is the main reason behind this.

In some hill stations and some vast areas around our country, electrical voltage supplied by Electricity Board is reduced by losses. So, the consumer gets 160V – 180V in some hill stations and vast area instead of getting 220V – 240V. Here the electrical motor used consuming more electrical energy an wastage not only through electricity and also money for the consumer. In case, 1HP motor is enough for pumping water for the consumer's requirement under normal single phase voltage 220V – 240V is not existing there. So the consumer will look for higher HP motor than the required HP motor.

So here is going to design a single phase 24 slot, 2 pole 0.5 HP (0.375 kw) motor-pump which operates on 100V - 180V as its rated voltage and the performance, efficiency and all the electrical parameter values are same as the motor operated on 220V – 240V. For that only changing the winding design in the stator (No. of turns and SWG). The stampings are used in AL3, 55mm core length, Class B insulation, 23SWG for starting and running windings and die cast body.

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RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT: SAFE DEPOSIT BOX WITH TWO FACTOR AUTHENTICATION

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ABSTRACT

Securing your digital life with two-factor authentication (2FA) is pretty common nowadays. A password alone just doesn't hack it. Typically, 2FA on the web requires a one-time code, sent to your phone, as well as your password to log in. The Internet of Things is mostly about bringing Things to The Internet, but it's also about bringing The Internet to Things. Two-Factor Authentication (2FA) has been offered by mission critical services websites like bank accounts or Bitcoin wallets for some time now, providing an additional layer of security beyond just a password. Since resin.io is all about crossing the gap between the internet and the real world we decided to put this concept into action by building a safe-deposit box that requires 2FA to open. By combining resin.io with Twilio's Authy, we got to do this with a very simple deployment system git push resin master and a very easy way to add the 2FA mechanism.

Safes and lockers are usually opened by a key or by tapping in a code on a numeric keypad. We've come up with an alternative approach that combines a numeric code with an SMS sent via Authy to the user's phone, which means that opening the safe involves having both the code and the mobile phone

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RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT: AUTOMATIC POLLUTION CONTROL USING ESP

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ABSTRACT

Degradation of air quality in cities is the result of a complex interaction between natural and anthropogenic environmental conditions. With the increase in urbanization and industrialization and due to poor control on emissions and little use of catalytic convertors, a great amount of particulate and toxic gases are produced.

In order to monitor air pollution on roads and track vehicles which cause pollution over a specified limit. Increasing number of automobiles is a serious problem that has been around for a very long time.

Conventionally silencer are used to reduce the bike exhaust output pollution, by filtering out the toxic gases in the process heat is generated. The life time of these devices are low since due to heat the components in the silencer degrades and need to be replaced after few years of operation.

This proposed project utilizes the power of electrical energy to reduce pollution by implementing an ESP to reduce pollution. ESP are typically used in power plants to reduce the carbon emissions. This project is a miniature version of the same. Where the carbon content in the exhaust smoke is removed by electrostatic force. The electrostatic force is created by using the bikes internal battery, voltage multiplier and wire mesh arrangement.

This system multiplies the internal battery voltage to multiple times and connected to the wire mesh, the carbon particles in the exhaust gas are attracted to this mesh and can be removed later. This method improves the existing system by providing better design structure and reducing the weight and size parameters, which would lead to better design and functionality in automobile indust

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RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT: ELECTRIC ENERGY EXCHANGE AND APPLICATIONS OF SMES DEVICE

PRINCIPAL INVESTIGATOR: M.RAJA

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ABSTRACT

In this project unified energy exchange system with an equivalent dc circuit topology is presented for superconducting magnetic energy storage (SMES) study. The principle and experimental prototype design have been carried out to study the dynamic energy exchange characteristics of SMES for both voltage sag and swell compensations, with a new bridge-type I/V chopper and relevant digital control method introduced and compared with the conventional chopper. The bridge-type I/V chopper has been demonstrated to be more suitable for low-voltage power applications because of its high energy storage and exchange efficiencies.

Wireless power transfer using magnetic resonance is the technology which could set human free from than annoying wires. In fact, the WPT adopts the same basic theory which has already been developed for at least 30 years with the term inductive power transfer. WPT technology is developing rapidly in recent years. At kilowatts power level, the transfer distance increases from several millimetres to several hundred millimetres with a grid to load efficiency above 90%.

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RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT: ENERGY HARVESTING ON AUTOMOTIVES

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ABSTRACT

The conventional vehicle suspension dissipates the mechanical vibration energy in waste considerable energy. In Doubly Fed Induction Generator produces vibration and linear motion into useful energy as electric power.

Conventional Vehicle Suspension simply dissipates this energy as vibration. As Suspension effect formed spring is compressed and linear movement of rack is converted in rotary motion due to pinion moves as the rack is meshed with pinion. Due to this arrangement of an rotary motion of pinion is used to rotate DFIG.

As, Doubly Fed Induction Generator rotation leads to generation of energy. And this energy is used to charge the battery and this stored energy is used for different vehicle accessories like power window, lights and air conditioner etc., This energy is applicable in most of the military vehicles, race automobiles, transport vehicles, institution vehicles and maximum suspension systems.

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RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT: TOUCHDOWN AVIATION

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ABSTRACT

Landing of plane is the delicate part of work for a pilot. The risks of landing is not reduced, which indirectly increase the chances of accidents. Manual operation, carelessness, inaccuracy will lead to the dilemma. The existing system has these drawbacks, which are resolved by our methodology.

The project revolves around the idea of sensing the position of wheels of a plane on the runway of the airport. The main objective of the project is to spot the exact point at which the plane's wheel comes in contact with the surface of the runway. Using Piezo-electric crystals, which converts the applied pressure of the wheels into current, we can sense that exact position with the help of animatronics.

The proposed project idea values the pre-caution activities to be carried out in a plane and helps to land the plane safely. On further analysis, it can pave a way to produce electric current from the runway.

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RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT: AUTOMATIC CHARGING OF BPRV E-BIKE

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ABSTRACT

With the increase in fuel prices, pollution content in atmosphere and due to gradual end of the non- renewable sources of energy in our vehicle. Considering all these reasons we have to switch over to other sources of energy instead of using conventional sources such as petrol which in future will be going to extinct.

One way to alter the energy is to go for electric vehicles or E-bike. Electric driven vehicles uses battery as a source of energy which provide power to motor which in turn provide torque to wheels. The old design of electric bicycle was having only a single mode of charging, it was just capable to travel 35km through battery. The new design uses a low rpm alternator for changing the battery by keeping it in contact with front wheel.

A motor of 250 watts provides torque. Battery charging time through alternator is 2 hours and the E-bike can attain a maximum speed of 20 to 25km/hr. This work is more beneficial in hilly region and area likes college campus and schools, generating zero pollution, zero noise effect and fuel consumption.

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RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT: SOLAR AND WIND POWERED BICYCLE

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ABSTRACT

Solar and wind powered by using electric bicycle can be designed because it is environmentally friendly and the cost is much lower. It can mainly design in order to overcome the problem of electricity, and it cannot be recharge frequently. It provides a solution for the environmental pollution .In case of cloudy day wind turbine which was fitted in front of the bicycle can Sbe used.

Solar cells are an alternative method for generating electricity directly from sunlight. In this project, we learn about the working of solar cells. This project helps to ride the cycle without pedaling. Solar panels are used to generate electricity. Solar energy is an important means of expanding renewable energy source. Many researches were conducted to develop some methods to increase the efficiency of photovoltaic systems, i.e. solar panels

Our project will include DC generator to generate electricity from the wind energy. At the education level, it is necessary for engineering and technology students to have understanding and appreciation of technologies associated with renewable energy.

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RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT: POWER GENERATION BY CYCLING METHOD IMPLEMENTED IN GYM

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ABSTRACT

Solar and wind powered by using electric bicycle can be designed because it is environmentally friendly and the cost is much lower. It can mainly design in order to overcome the problem of electricity, and it cannot be recharge frequently. It provides a solution for the environmental pollution .In case of cloudy day wind turbine which was fitted in front of the bicycle can Sbe used.

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RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT: AIRCRAFT LANDING SYSTEM

PRINCIPAL INVESTIGATOR: V.ROYNA DAISY

CO-PRINCIPAL INVESTIGATOR: S.RATHINAVEL

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ABSTRACT

While landing the flight permission from ATC departments is required this will communicate with metallurgy department, ground-based department, RADAR department. These departments interact information through ATC to nearby (18 Nautical mile) flights. These information are transferred through Radio frequency. Due to this process the utilisation of man power required is more. So it necessary for an automatic "AIRCRAFT LANDING SYSTEM (ALS)".

ALS has IR sensor, Thermistor, DC fan which helps to detect fog visibility, temperature, humidity, wind speed and wind direction. Then RADAR is used to detect the flights around (200 Nautical mile) for communication, for this project Embedded PIC IC development board is used.

The proposed ALS will helps to reduce the man power thereby increasing the number of aircraft to facility to communication for people in India.

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RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT: AUTOMATIC TEMPERATURE AND HUMATITY CONTROL EGG INCUBATION SYSTEM USING ARDUINO

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ABSTRACT

A simple model to describe the relationship between the temperature of the developing embryo, incubator temperature, embryo heat production, and thermal conductivity of the egg and surrounding air is presented. During early incubation, embryo temperature is slightly lower than incubator temperature because of evaporative cooling. However, from midincubation onwards, metabolic heat production from the embryo raises embryo temperature above incubator temperature.

The extent of the rise in embryo temperature depends on thermal conductivity, which, in turn, is mainly influenced by the air speed over the egg. The importance of air speed and restrictions to air flow within artificial incubators is discussed. Exact determinations of optimum incubation temperatures from studies reported in the literature are difficult because only incubator temperatures are reported.

Embryo temperatures can differ from incubator temperature because of differences in thermal conductivity between different incubation systems and differences between incubators in their ability to control temperatures uniformly. It is suggested that shell surface temperatures are monitored in experiments to investigate temperature effects to allow consistent comparisons between trials. Monitoring shell temperatures can be performed by the ARDUINO MEGA

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RESEARCH PROJECT

ACADEMIC YEAR : 2015-2016

TITLE OF THE PROJECT: SOLAR PANEL FAULT DETECTION

PRINCIPAL INVESTIGATOR: V.ROYNA DAISY

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ABSTRACT

Photovoltaic system have played a key role over the last decade in the evolution of the electricity sector. In terms of safety design, it is important to consider that a PV plant constitutes a special system of generation, where the Direct Current (DC) presence results in change to the technical rules. Series arcs have the potential to occur, at any poor connection within the DC circuit. Moreover, if certain electrical faults occur, the plant in the possible source of fire. In this three panels are connected in series, then in observer circuit buttons and fault detection are to be identified by using open and close circuit switch method. Relays are switches that open and close circuits electromechanically or electronically. Relays control one electrical circuit by opening and closing contacts in another circuit.

The subject of the article is the analysis of the relation between electrical phenomena in PV system and the fire risk related to ensuring appropriate fault detection by the electrical protection system. A description of the grid connected PV system is followed firstly by a comparison of the design solutions provided by international standards, and secondly by an analysis of electrical phenomena which may trigger the circuit. The study highlights the importance of checking all possible failure modes in a PV system design phase, to assess fire risk in advance. Some guideline for the mitigation of electrical faults that may result in a fire are finally provided. The low reliability is due to the possibility of fault being hidden in the solar PV array, reducing its lifetime and efficiency as well.

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT: ACCELEROMETER CONTROLLED VEHICLE HEADLIGHT USING ARDUINO

PRINCIPAL INVESTIGATOR: S.RAJALAKSHMI

CO-PRINCIPAL INVESTIGATOR: P.BALAJI

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ABSTRACT

Driving at night is a dangerous activity that necessitates maximum driver awareness for safe operation of a motor vehicle. A relatively cheap and effective way to increase a driver's situational awareness is by proving the best view of the road and existing obstacles possible. Until the perfection and proliferation of night vision systems in vehicle this will be accomplished using headlights. There are two common problems with headlights, first is that many of them are improperly adjusted either blinding on coming drivers or providing a poor view of the road ahead. The second problem is headlights on the majority of road vehicles, once adjusted, remain fixed while in operation. They are thusly unable to adapt to conditions. The solution to this is to offer dynamically adjusting headlights that can be aimed by the driver in the cabin and then will automatically compensate for dips in the road, inclines, and the vehicle loading.

This project seeks to produce such a system that can be retrofitted to existing vehicles with two modules, the control module consisting of an accelerometer sensor to measure the change in the vehicle tilt, and user input. The second module will be the headlight module, with stepper motor controlled headlight tilt, and a tilt sensor for feedback. This system will result in an increase in useful light emitted from the vehicles headlights while simultaneously decreasing glare for other road vehicles, which will significantly improve night time road safety.

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DEPARTMENT OF MECHANICAL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT:

PRODUCTION CAPACITY ENHANCEMENT IN ASSEMBLY LINE

PRINCIPAL INVIGILATOR: M.Makesh

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ABSTRACT

In a market as competitive as the automotive industry, it becomes increasingly important for the organizations to adopt a culture of continuous improvement, which should cross-over all stakeholders in the organization. The continuous improvement of the processes, the increase in efficiency, and the elimination of waste, leads to a considerable increase in market competitiveness, not only economically, but also technologically. The focus of this work was the optimization of a production line, with the main goal being the increase of its productive capacity, so that it can comply with customer's requests. Thus, it was defined as a goal of this project: to increase the productive capacity to 1800 parts/day. The methodologies used were based on several continuous improvements and lean techniques, such as line balancing, standard work, visual management and 5S. The work developed allowed an increase of 37% of the production line capacity and an increase of 22% in the OEE of the production line.

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DEPARTMENT OF MECHANICAL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT:

FABRICATION OF ALUMINIUM METAL MATRIX COMPOSITE BY USING STIR CASTING METHOD FOR HAND LEVER

PRINCIPAL INVIGILATOR: A.P.Sivasubramaniam

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ABSTRACT

Aluminum Metal Matrix Composites (AMMCs) are emerging as the most versatile materials for advanced structural, automotive, aviation, aerospace, marine, defense applications and other related sectors because of their excellent combination of properties. In the present investigation, Al6061 T6 composites were fabricated by Stir casting method by varying Weight Percentage (wt. %) of reinforcement from Sample1 (Al80%+Sic20%), Sample2 (Al 80%+SiC10%+FlyAsh10%) & Sample3 (Al80% +SiC10%+ Neem leaf ash10%). The Al6061 T6 alloy composites and its wear and frictional properties of the metal matrix composites was studied by performing dry sliding wear test using a pin-on-disc Friction & wear tester. The sliding wear tests were conducted for various loads, speeds and sliding distances. The result reveals that wear rates of the composite is lower than that of the matrix alloy and friction coefficient was minimum. The incorporation of hybrid ceramic powder with different sized particles as reinforcement material in Al6061 T6 alloy improves (" smaller the better ") the tribological characteristics of lever not only lever by implementing of this combination we improve the strength & reduce the weight of the component like Chassis & Chain Sprockets Etc.... Keywords: Al6061 – Aluminum 6061 Grade, T6 – Temper Sixth, AMMCs – Aluminum Metal Matrix Composites,

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DEPARTMENT OF MECHANICAL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT:

OPTIMIZATION OF EDM PROCESS PARAMETERS

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ABSTRACT

Optimization of process parameters for machining process has become the trend now-a-days. This investigation basically focuses on the optimization of process parameters in EDM performed on AISI D2 steel. The process parameters selected here from Response Surface Methodology for investigating Pulse Current (Ip), Pulse Duration (Ton) and Duty Cycle (Tau). There are a number of performance characteristics in the EDM process so here GRA and TOPSIS has been used to optimize the process parameters. The obtained result indicates that GRA and TOPSIS can be effectively used to distinguish the effects of process parameters on performance characteristics and in their optimization. Hence, it is confirmed that the methods used in this process altogether can be a useful tool in optimization of process parameters in EDM process.

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DEPARTMENT OF MECHANICAL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT:

REDESIGNING OF BUTTING BLOCK

PRINCIPAL INVIGILATOR: S.Karthikeyan

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ABSTRACT

A city, if you happen to glance down, you're bound to be greeted by a universal sight: stubbed-out cigarette butts, in various stages of decay, line pavements and are often wedged between interlocking paver blocks. But it is more than just a sore sight. These remnants are essentially filters made out of a plastic fibre called cellulose acetate, which is said to take years, if not decades, to break down. Even as they decompose, their carcinogenic chemicals, pesticides and nicotine leach into the environment, contaminating the soil. Often, these butts are swept away via city drains and end up in rivers or seas, polluting the water and killing marine organisms.

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DEPARTMENT OF MECHANICAL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT:

A STUDY OF THE ABRASIVE RESISTANCE OF CERAMIC OXIDE COATING DEPOSITED ON AISI 1040 STEEL SUBSTRATE

PRINCIPAL INVIGILATOR: S.Prabhakaran

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ABSTRACT

In this investigation, ceramic oxide powders alumina, titania, chromia, alumina-titania, alumina-chromia and titania-chromia are coated on AISI 1040 forged steel substrate with a coating thickness of 200 μm by using the plasma spraying technique. Ni-Cr is used as an intermediate bond coat material to improve the coating adhesion for a thickness of 20 μm over the substrate. By using a pin-on-disc machine, dry wear test was carried out as per ASTM-G99 standards for a constant load of 10N, at different sliding distances of 1000m, 2000m, 3000m respectively. The result showed that the wear rate depends on various attributes such as microstructure, thickness of coating, porosity, surface roughness and hardness. Surface roughness measurements were performed on the specimens before and after wear tests by using talysurf instrument and the results showed that the highest value (20.42 μm) was obtained from the coating of alumina-titania. From the above investigation, the results obtained showed that a pure chromia coated specimen is having very good wear resistance property among the tested specimens. Hence it is suggested that pure chromia can be used for surface coating on top mill roll shaft used in sugar industries to enhance wear resistance.

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DEPARTMENT OF MECHANICAL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT:

DESIGN DEVELOPMENT & ANALYSIS USING PLASMA PROCESS OF ELLIPTICAL LEAF SPRING WITH FATIGUE AND VIBRATION ANALYSIS

PRINCIPAL INVIGILATOR: P.N.Mohan Kumar

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ABSTRACT

The automobile industry has shown increased interest in the replacement of steel springs with fiberglass reinforced composite leaf springs. Therefore, the aim of this paper is to present a general study on the analysis, design and fabrication of composite springs. From this viewpoint, the suspension spring of a compact car, “a jeep” was selected as a prototype.A single leaf, variable thickness spring of glassfiber reinforced plastic (GFRP) with similar mechanical and geometrical properties to the multileaf steel spring, was designed, fabricated (molded and hoop wound) and tested. The testing was performed experimentally in the laboratory and was followed by the road test. Comparison between the performance of the GFRP and the multileaf steel springs is presented. In addition, other relevant parameters will be discussed.

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DEPARTMENT OF MECHANICAL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT:

CFD SIMULATION OF HEAT TRANSFER ENHANCEMENT IN CIRCULAR TUBE WITH TWISTED TAPE INSERT BY USING NANO FLUIDS

PRINCIPAL INVIGILATOR: R.Meiyazhagan

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ABSTRACT

Heat transfer enhancement using nano-fluids has gained significant attention over the past few years. Nano-fluids are potentially applicable as alternative coolants for many areas such as electronics, automotive, air conditioning, power generation and nuclear applications. Heat transfer coefficient and the friction factor characteristics of SiC/water nanofluid will have been numerically investigated using ANSYS FLUENT 14.0. The Nanofluid was employed in a circular tube equipped with modified Horizontal Wing Twisted Tapes (HWTT) with different twist ratio (y = 2.0, 4.4, 6.0) were used for simulation and compared with Plain Twisted Tapes (PTT). The results of CFD investigations of heat transfer Coefficient and friction characteristics are presented for the HW-TT with Different twist ratio in comparison with the P-TT case.

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RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT:

FABRICATION OF GATE BY GEAR AND PULLEY OPERATION

PRINCIPAL INVIGILATOR: R.Gunasekaran

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ABSTRACT

An optimum design of lifting mechanism, well-equipped and efficient control system and trustable mechanism to lift the gate is important from technical point of view. If fails or not open at required speed creates a major problem to the dam & ultimately for public site. Hoist is electrically driven and fully enclosed gear reduction units, protected and interconnected shafting with flexible couplings grooved drums, and steel or stainless steel cables. Worm or spur gears are provided and are self-locking to hold the gate in position without the use of motor break. The hoist of the dam gate consists of a speed reduction gear mechanism that increases the torque & helps us to lift the gate with less effort. It is very important to know the breaking load and to design and analyse the load at which hoist can work or fail. Therefore in the present work, lifting mechanism used for lifting the dam gate is designed by using CATIA as a part & assembly modeling tool and the system is then analyzed for the given loading condition using CATIA as a FEM tool and the dam identified for research work is Arunawati Dam in Yawatmal District.

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DEPARTMENT OF MECHANICAL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT:

EXPERIMENTAL ANALYSIS OF HEAT TRANSFER DEVELOPMENT IN CIRCULAR DOUBLE TUBE EXCHANGER

PRINCIPAL INVIGILATOR: S.A.Venkatesh

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ABSTRACT

In present study, in order to increase of heat transfer in a horizontal circular tube heat exchanger by means of Snail Entrance with air as the working fluid. In the experimental set up, cold air in ambient condition was passed through the inner pipe while hot water was flowing through outer tube. The Reynolds no of air varies from 10000 to 60000. The results are compared with the plain tube where no Snail Entrance was used. The work includes the determination of friction factor and heat transfer coefficient for snail entrance in both counter and parallel flow. Snail entrance was observed that the heat transfer coefficient could vary from 90 to 110% the smooth tube value but the corresponding friction factor increases by 1 to 1.3 times the smooth tube values. It was also observed that with an increase in Reynolds number (Re), the heat transfer coefficient increases where as the friction factor decreases

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RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT:

INVESTIGATION OF WEARR RESISTACE OF CERAMIC COATED CYLINDER & PISTON OF IC ENGINE

PRINCIPAL INVIGILATOR: C.Suresh

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ABSTRACT

In the present research work, various ceramic materials such as Al_2O_3 - Cr_2O_3 - SiC, and Al_2O_3 - ZrO_2 - TiO_2 were developed for the analysis of wear performance and hardness. The specimens were coated using plasma spray coating technique. A bond coat of 50 µm thickness was applied on the substrate using NiCrAlY for good adhesion before laying the top coat. The wear behaviour and hardness of the samples were investigated by wear and hardness tests. The Energy Dispersive X-ray Analysis (EDAX) was performed to analyse the chemical composition of the samples. The Field Emission Scanning Electron Microscope (FE-SEM) was used to analyse the surface and cross-section of the samples. X-ray diffraction (XRD) studies are carried out to understand the structural and crystallographic information. The performances of the coated and uncoated samples were compared and investigated. It was observed that the specimen with Al_2O_3 (60%) + ZrO_2 (20%) + TiO_2 (20%) coating produced best results for wear rate (0.03612 mm^3/Nm) and Coefficient of friction (0.357). The proposed ceramic coating composition could be recommended for automobile components that require good wear and heat resistance to improve the service life.

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RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT:

DIFFERENTIAL UNIT LOCKING SYSTEM

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ABSTRACT

The conventional differential supplies almost equal amount of torque to the wheels on the straight path but the problem arises when wheels goes under the action of turning. This dissertation concentrates on introducing Automatic Locking System in the conventional differential unit of an automobile so that a perfect distribution of the torque can be achieved when the vehicle takes a turn and the problems like spinning of wheels are overcome. Engagement or disengagement of this locking system can be activated manually or automatically depending on the driving conditions. If the difference in the speed of driven and rolling wheels is encountered then the differential is exposed to automatic locking. Some additional attachments of shafts and power transmission devices is done to achieve the locking of differential which results in exact distribution of torque so that perfect turning of the vehicle is performed.

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DEPARTMENT OF MECHANICAL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT:

CONVERSION OF PLASTIC FUEL & PERFORMANCE ANALYSIS ON VCR ENGINE WITH BLEND OF DIESEL

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ABSTRACT

Plastic waste disposal throughout the world is creating problems and degrading the environment.Today transportation and electric power generation in rural areas mostly depend on fossil fuels. Such extensive use of fossil fuel is resulting in depleting it at an alarming rate. Hence, it is required to produce an alternative fuel to keep them running as well as minimizing waste disposal. Waste plastic pyrolysis oil is identified one of such good alternative. In this study, waste transparent plastic, used for packaging, is used for the conversion of fuel through pyrolysis process.It was observed that yield of plastic oil was approximately 65-70 %. However, a liquid yield affects heating rates and heat loss patterns in the reactor system. This paper also presents the effect of waste plastic pyrolysis oil in a diesel engine at various compression ratios with different load and blending with pure diesel (pure diesel, 10%, 20%, 30%, 40%) at constant engine revolution. The performance characteristics include engine brake power, brake thermal efficiency, specific fuel consumption and exhaust emissions. Experimental investigation shows that Plastic oil can be used to save the 40% diesel without loss of power, and its trend do not differ with variation in compression ratio.

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RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT:

OPTIMIZATION PROCESS PARAMETER IN EDM PROCESS USING MULTI CRITERIA DECISION MAKING METHODS

PRINCIPAL INVIGILATOR: K.Ramachandran

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ABSTRACT

Optimization of process parameters for machining process has become the trend now-a-days. This investigation basically focuses on the optimization of process parameters in EDM performed on AISI D2 steel. The process parameters selected here from Response Surface Methodology for investigating Pulse Current (Ip), Pulse Duration (Ton) and Duty Cycle (Tau). There are a number of performance characteristics in the EDM process so here GRA and TOPSIS has been used to optimize the process parameters. The obtained result indicates that GRA and TOPSIS can be effectively used to distinguish the effects of process parameters on performance characteristics and in their optimization. Hence, it is confirmed that the methods used in this process altogether can be a useful tool in optimization of process parameters in EDM process.

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RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT:

DESIGN & OPTIMIZATION OF PLASTIC MIXING MACHINE

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ABSTRACT

In injection molding the processing condition have critical effect on the finished molded products. Since there are many critical factors involved in this process, identification of the parameters are very important. In this paper work the effect of various factors like Melt temperature (210 oC, 230 oC, 250 oC, 270 oC), Injection pressure (80 bar, 100 bar, 120 bar , 140 bar) and Cooling time (7 sec, 10 sec , 14 sec , 21 sec) are selected for the experiment. A Plastic product polycarbonate plastic material was taken for the experiment with optimal injection molding conditions and its tensile stress test was conducted in order to minimize defects and increase its strength. In this paper Design of Experiment (DOE) is applied with an attempt to optimize these parameters and to achieve good results using. "Orthogonal Arrays" (OA) is selected to get balanced (minimum) experiments and Taguchi's Signal-to-Noise ratios (S/N), which has log functions, they provide an objective function for optimizing and they guide in designing the input values with accurate data analysis and provide prediction of optimum final values

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RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT:

SOLAR POWERED GRINDING & POLISHING MACHINE

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ABSTRACT

Peanuts were one of the various crops that have been present in the country since Spanish colonial era. Popular confections made from peanuts include salted peanuts, peanut brittle and peanut butter (sandwiches, peanut candy bars and peanut butter cookies).The universally known peanut butter was invented in 1890. However, its production was a demanding and a physically challenging process. To cope up with the demand, the solution is through the use of a peanut grinding machine which significantly simplifies processing of nuts into paste. This is a machine used in the disintegration of solid particles or droplet size of a liquid present in suspension or emulsion. The project entitled, Development and Installation of Solar-Powered Peanut Grinding Machine aims to replace the conventional peanut grinding machine method because it consumes lot of time of making peanut butter. The machine has a maximum capacity of 5kg. Since peanuts have moisture content, the design of the prototype included burr grinder which produce fine ground peanuts. The machine was also made from stainless steel to keep the ground peanuts from possible contamination. To ensure the grinding process, the machine has a rotating mechanism which was driven by an AC induction motor at a speed of 1720rpm. The project used two solar panels of approximately 275 watts each for the continuity of supply, increase of production, less production cost, and reduced air pollutants emission. For the continuity of supply, increase of production, and less production cost, the machine was solar-powered.

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RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT:

FABRICATION TOOL INDEXING MULTI CHUCK DRIVING MACHINE

PRINCIPAL INVIGILATOR: N.Logeswaran

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ABSTRACT

The growth of Indian manufacturing sector depends largely on its productivity & quality. Productivity depends upon many factors, one of the major factors being manufacturing efficiency with which the operation /activities are carried out in the organization. Productivity can be improved by reducing the total machining time, combining the operations etc. In case of mass production where variety of jobs is less and quantity to be produced is huge, it is very essential to produce the job at a faster rate. This is not possible if we carry out the production by using general purpose machines. The best way to improve the production rate (productivity) along with quality is by use of special purpose machine. Usefulness and performance of the existing radial Multi-spindle machine will be increased by designing and manufacturing of Multi-spindle head attachment. This paper deals with design and development of Multi-spindle head for cycle time optimization of the component

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RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT:

DESIGN AND FABRICATION OF AUTOMATED ARBOR PRESS MACHINE

PRINCIPAL INVIGILATOR: M.Muthukumar

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ABSTRACT

In present study, in order to increase of heat transfer in a horizontal circular tube heat exchanger by means of Snail Entrance with air as the working fluid. In the experimental set up, cold air in ambient condition was passed through the inner pipe while hot water was flowing through outer tube. The Reynolds no of air varies from 10000 to 60000. The results are compared with the plain tube where no Snail Entrance was used. The work includes the determination of friction factor and heat transfer coefficient for snail entrance in both counter and parallel flow. Snail entrance was observed that the heat transfer coefficient could vary from 90 to 110% the smooth tube value but the corresponding friction factor increases by 1 to 1.3 times the smooth tube values. It was also observed that with an increase in Reynolds number (Re), the heat transfer coefficient increases where as the friction factor decreases.

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DEPARTMENT OF MECHANICAL ENGINEERING

RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT:

FABRICATION OF GEARLESS DRIVE

PRINCIPAL INVIGILATOR: G.Mohan Kumar

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ABSTRACT

The vehicle transmission system is used for power transmission. Now-a- days we are using gears for power transmission. But there is a problem faced by this technology is wear and tear. The Project is used for power transmission without gears. They are called as Gearless transmission system. It is using L-bend for power transmission. It is a simple technique but it is a more efficient method. We can use that transmission system in any angular position. It can be used in any vehicles. This is one of the effective methods for power transmission. This technology is very useful for automobile industries. It is easy to manufacture. This saves gear manufacturing time and costs along with teeth matching and gear placement issues. The elbow mechanism is an efficient design of gearless transmission technique and the kinematic system that allows for efficient power/motion transmission at right angles. It is being compact and portable equipment, which is skilful and is having something practice in the transmitting power at right angle without any gears being manufactured.

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RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT:

DESIGN AND FABRICATION OF CHASSIS OF SOLAR VEHICLE

PRINCIPAL INVIGILATOR: K. Vijaya Kumar

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ABSTRACT

With an increasing concerns on our environment, there is a fast growing interest in Electric Vehicle for all stakeholders and the development of electric vehicle technology has taken on an accelerated pace. The design and construction of Electric Vehicle is a pressing need for researchers to develop advanced electric vehicle system. In this paper, an overview for the fabrication of Electric Vehicle is presented, with emphasis on mechanical topologies and drive operations. Then, three major research directions of the Electric Vehicle systems are elaborated, namely, the design and building of chasis, axle, steering structure and erection of solar system for Electric Vehicle system. The Permanent Magnet Brushless DC Motor (PMBLDCM) is the main system for driving Electric Vehicle. PMBLDCM is used as electric variable-transmission system.

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RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT:

AUTOMATIC RAIN OPERATED WIPER

PRINCIPAL INVIGILATOR: S.Ranjith Kumar

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ABSTRACT

The aim is to design and develop a control system based on an electronically controlled automotive rain operated motor called AUTOMATIC RAIN OPERATED WIPER. Rain operated motor consists of a conduction sensor (Touch sensor) circuit, Control Unit, wiper motor and glass frame. The sensor is used to detect the rain or water flow. If there is any rain on the glass, the sensor senses the rain or flow water and giving the control signal to the wiper motor. The battery supplies the power to the sensor as well as rain operated motor. Wiper motor is automatically ON during the time of rainfall. The senor is fixed in the vehicle glass. The conductive (Touch) sensor is used in this project. It senses the rainfall and giving control signal to the control unit. The control unit activates the wiper motor automatically. This operation is called Automatic rain operated wiper.

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RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT:

PNEUMATIC CRANE CRUSHER

PRINCIPAL INVIGILATOR: J.Mahendravarman

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ABSTRACT

The Can Crushing process is a main part of the Wastage Collecting industries. Normally the Can Crushing machine is manually hand operated one for Wastage collecting industries. In our project is “Pneumatic Can Crusher”. Automation in the modern world is inevitable. Any automatic machine aimed at the economical use of man, machine, and material worth the most. In our project is Pneumatic Actuator and control Valve unit is used for automation.

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RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT:

BURR REMOVAL PROCESSES DURING MICRO MACHINING

PRINCIPAL INVIGILATOR: M.Rajmadhan

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ABSTRACT

This paper presents an investigation on micro-burr formation in machining. Micro cutting is compared with conventional cutting in terms of cutting process characteristics and cutting conditions. An acceptable range of cutting conditions for micro cutting has been determined by extrapolating the conditions for conventional cutting and experimental verification. With cutting conditions determined, a series of experiments was conducted to investigate burr formation and tool life. Herein, tool life is defined as the number of holes created before a catastrophic increase in burr height occurs. Based on experimental results, contour charts for predicting burr formation as well as too

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RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT:

PERFORMANCE ANALYSIS OF HELICAL FEEDING PULVARISER

PRINCIPAL INVIGILATOR: R.Duraisamy

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ABSTRACT

Large coal pulverizers have been identified by EEI surveys as one of the main systems responsible for lost steam generation capacity of large coal fired utility boilers. This report contains the results of a 16 month study to examine the problem of pulverizer outages and to identify root cause failure modes for the major mill types currently in service. A data base of 469 pulverizers, the majority larger than 40 tons/hr coal capacity, was compiled by surveying the utilities with coal fired boilers in this country. The analysis of this data base combined with telephone interviews and seven field site visits to utilities identified both design and operational problem areas in all of the mill types studied. Five specific problem areas were established and evaluated in this study: (1) drive components, (2) grinding zone, (3) air system, (4) mill fires and explosions, and (5) boiler problems associated with the pulverizer. The root causes of these problems were identified and documented. Recommendations for solutions to some of the more common problems were given after discussion of the findings with the manufacturers.

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RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT:

EXPERIMENTAL INVESTIGATION AND ANALYSIS OF CONNECTING ROD BY USING HYBRID METAL MATRIX COMPOSITE

PRINCIPAL INVIGILATOR: V. Elango

CO-PRINCIPAL INVIGILATOR: M. Anbuselvan

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ABSTRACT

Composite materials are those that are framed by the mixing of two or more materials to accomplish propertiesthat are better than those of its constituents. Aluminum metal matrix composites are increasing across the boardacknowledgement for vehicles, modern, aviation applications in view of their low thickness, high quality andgreat structural unbending nature. In the present work a specimen is made to Al-Sic-graphite contained in particulate metal matrix composites by stir casting method. The expansion level of graphite being Varied from3-5wt% in venture of 1wt% and the rate of SiC is consistent (i.e. 5%). Brinnel hardness, tensile properties andimpact strength of the composites were tested according to the norms. Micro structural portrayal uncoveredgenuinely uniform appropriation in the network. The hardness number of the composite is found to increasewith an increase in graphite up to 5% and then decrease. The tensile strength of the composites was likewisefound to build affirming the scattered graphite in Al amalgam contributed in upgrading the rigidity of thecomposites. The Piston is modeled using CATIA modeling and Finite Element analysis is done for same modelutilizing ANSYS software for Aluminium (Pure) and Al-SiC-graphite and the results were discussed.

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RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT:

IMPLEMENTATION OF SIX SIGMA IN AXLE ASSEMBLY PROCESS

PRINCIPAL INVIGILATOR: P.Parandaman

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ABSTRACT

Purpose This paper aims to deploy the Six Sigma methodology to facilitate defect reduction and enhance the bottom-line results of an automotive industry. Design/methodology/approach Six Sigma is a business process improvement strategy widely used in manufacturing field for enhancing organizational performance. Six Sigma enables the attainment of defects reduction. In this study, the Six Sigma methodology has been developed with the integration of change management tools. Findings Six Sigma has been successfully implemented in the grinding process in automotive engine manufacturing organization. The proposed Six Sigma methodology has been applied to facilitate defect reduction. The developed methodology with linkage of DMAIC (define, measure, analyze, improve and control) and change management techniques reduces defects. Research limitations/implications The developed methodology has been implemented in an automotive industrial complex. In future, more number of studies could be conducted, i.e. for mistake proofing. Furthermore, advanced tools and techniques could be included in the methodology for increasing the effectiveness of change management. Practical implications The proposed Six Sigma methodology has been successfully implemented in a grinding process of automotive manufacturing organization; in future, the approach could be applied in different industrial sectors with addition of new tools and techniques for improving its effectiveness. Originality/value The Six Sigma methodology has been designed and implemented in the grinding process. Researchers have not treated Six Sigma in much detail in the automotive industry. Moreover, previous studies on Six Sigma have not dealt with the grinding process. Besides, most studies in the field of Six Sigma have focused only on DMAIC, but this study adds change management approach to DMAIC.

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RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT:

EMISSION CONTROL USING AD BLUE SOLUTION

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ABSTRACT

Ammonia-based selective catalytic reduction (SCR) systems are the most widely used technology for reduction of nitrogen oxide emissions from lean-burn engines such as diesel engines. However, at low exhaust temperatures, the SCR process is limited by difficulties in the decomposition of the ammonia precursor urea, which is carried on-board using an aqueous solution “AdBlue”. In this study, the decomposition of AdBlue urea induced by electrical current and the resulting associated pH shifts were investigated in a divided cell configuration in the liquid phase. The decomposition was found to be favored in both electrochemical compartments, anodic and cathodic, at temperatures of 60–80 °C compared to a reference without electrochemical treatment. In addition to the determination of ammonia contents using an ammonia sensor, IC/HPLC analyses were carried out for each sample. Different side products such as biuret, nitrate, cyanuric acid, ammelide, and others were formed. In the anodic compartment, nitrate formation could be observed due to oxidation of ammonia at the electrode surface. Graphical abstract Open image in new window

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RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT:

DESIGN AND ANALYSIS OF LIGHT DUTY VEHICLE WHEEL ALLOY DESIGN

PRINCIPAL INVIGILATOR: T.Thangavel

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ABSTRACT

The existing car model wheel rim is drawn in the design software Creo 2.0 and various loads and forces are theoretically calculated and applied on the model and analysed through ansys (17.0) software. Initially the static analysis and dynamic analysis is done by giving the corresponding engineering data that consisting of mechanical properties and their related chemical compositions, the vonmises stresses, deformations, and shear stresses are determined for the complex loading that has been applied on rim models. The complex loading includes applying the pressures ie, 90o angle pressure (inflation pressure) on the bead areas, side thrust on rim flange and the tyre pressure on the well area. And the fatigue analysis which includes the product life, the damage factor and safety factors are determined and all this analysis is done by taking three different designs of the same model of car (Volkswagen polo 1.0 TSI) and rim materials (aluminium, A356-T6, magnesium, MgAm60, titanium, 6Al4V) are changed in each case to know the best design and best material for a particular type of loading and later fatigue analysis is also carried for the same cases to know which design and material will be more durable. From the conclusions of the above analysis we came to know that aluminium has less deformation and magnesium has more durable life so we defined a new material which is the alloy of the above two materials, ie, aluminium-magnesium 5000 series alloys. This material had the advantages of both the materials and also economically best. From the results obtained by analysing these two new alloys we have more life and fewer deformations for the same loading conditions for the rim model.

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RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT:

FABRICATION OF STIRLING ENGINE WITH PARABOLIC COLLECTOR

PRINCIPAL INVIGILATOR: V.Subburam

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ABSTRACT

This paper showcases the designing, fabrication, and performance evaluation of 90-deg alpha-type Stirling engine. The diameters of the hot and cold cylinder are 50 mm and 44 mm, respectively, with a stroke length of 70 mm. The computer-aided design (CAD) model is developed by keeping in mind the ease of manufacturing, maintenance, bearing replacements, and lubrication. After fabrication, the engine is tested by heating the hot cylinder with air as a working fluid. The engine delivered peak power of 155 watts at the temperature of 1123 K and 968 K for hot and cold cylinders, respectively. This developed prototype can be commissioned with the solar parabolic concentrator in the future based on the smooth operation while delivering power.

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RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT:

ACCIDENT IMPACT REDUCER AND EMERGENCY CALLING SYSTEM

PRINCIPAL INVIGILATOR: Mr. R. Arunbabu

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ABSTRACT

Our project aims to reduce the impact when the accident occurs in a locomotive. It can be carried out by the damper is placed in front of the vehicles. The damper setup consists of a cylinder filled with oil .In between the spring is placed it will observe the vibration. When it reaches the high impact the sensor will sense and send the electrical signal to the micro controller. The controller is actuate the GSM module and the module will sent the message to the 100 and 108.The GPS will send the location to the particular number which we programed .

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RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT:

EXPERIMENTAL STUDY OF AUTOMATIC SLOPE BRAKING SYSTEM IN AUTOMOBILE

PRINCIPAL INVIGILATOR: Mr.S.vijayakumar

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ABSTRACT

Automatic Emergency braking system based on the presence of driver is used to control the movement of the vehicle. It is also like other braking system present in the automobiles. In this automatic braking system, the mechanism is based on the load present in the driver seat. The main use of this system is to control the free movement of vehicles in slope. This system is useful when the driver forgot to ON the parking brake. This is the additional system when helps to improve the safety of the vehicle. This mechanism is constructed using simple gear mechanism with cables. There is drawback of using this system that is the load alone needs to release the brake.

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RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT:

EARLY FLASH FLOOD DETECTION AND WARNING USING PROGRAMMABLE GSM ALERT

PRINCIPAL INVIGILATOR: Mr.K.Santhosh

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ABSTRACT

Early flash flood detection and warning using programmable GSM alert system is based on the concept of early detection of flash flood origin and warning. This system is to examine the flash flood situation in the channels, gullies, rivers that delivers water to dam and send alert incase of formation of flash flood in the form of text message to the Dam higher authorities to take some supplementary actions to reduce the impact of flash floods over the Inhabits live over the River banks and low region areas. This system is useful when there is heavy precipitation of rain due to El Nino in the regions of water bodies that lend water to dam to examine their water level to reduce flash floods.

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RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT: AUXILIARY FUEL TANK FOR TWO-WHEELERS

PRINCIPAL INVIGILATOR: M.Venugopal

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ABSTRACT

In motorcycles fuel reserve is the extra fuel reserved by the manufacture in the fuel tank. The fuel tank is separated into two sections. They are primary and reserve sections. These sections are being placed in the same tank. Initially the vehicle runs on the basis of the primary fuel and after the primary fuel used completely, the vehicle runs by the fuel in the reserve section. The purpose of the fuel reserve is to serve as a warning to the rider that fuel is low and determining the fuel remaining is difficult. In reserve condition the rider cannot predict the amount of fuel present in the fuel tank. If the rider does not see the reserve capacity it may goes to dry condition. So we introduce the secondary fuel tank to eliminate the difficult situation. Also Indicator buzzer and indication red light are glow continuously till petrol is fill.

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RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT:

GENERATION OF ELECRICITY BY USING EXHAUST

PRINCIPAL INVIGILATOR: S.Rajeshraja

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ABSTRACT

Here we are fabricating an automobile for producing power using turbines. Nowadays in automobile field many new innovating concepts are being developed. We are using the power from vehicle exhaust to generate the electric power which can be stored in battery for the later consumption. In this project, we are demonstrating a concept of generating power in a moving vehicle by the usage of turbines. Here we are placing a engine and turbine in the path of exhaust . The turbine is also connected to a dynamo, which is used to generate power. .Depending upon the airflow the turbine will start rotating, and then the dynamo will also start to rotate. .Dynamo is a device which is used to convert kinetic energy to electrical energy and it can stored in a battery. The rectified voltage can be inverted and can be used in various forms of utilities

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RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT:

STUDY OF "GSM BASED AUTOMATIC ON/OFF CONTROL AND MONITORING SYSTEM"

PRINCIPAL INVIGILATOR: Mr.R.Chandran

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ABSTRACT

An automatic GSM based on/off controller and monitoring system. The main objective of this project is to reduce electricity and water wastage. GSM is used for receiving short message service (SMS) from user's mobile phone that automatically enables the controller. It is a major problem which is faced by every house owner, that when there tank is empty they need to switch on the motor and switch the motor off when it is full wireless GSM control system that doesn't need any attention once it is installed and completely automated with the help of a micro controller. It also contain monitoring system which is designed because when the automatic system doesn't required in certain situations by using floating method it can be implemented. This project provides an improvement in existing water level controllers by its use of calibrated circuit. Our simulation results suggest one to two orders of magnitude reduction in power dissipation over existing commodity based systems for an important class of sensor network applications. We are currently in the implementation stage of design, and plan to tape out the first version of our system within the next year.

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RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT: HAND MOTION CONTROLLED ROBOTIC ARM

PRINCIPAL INVIGILATOR: S.Rajeshraja

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ABSTRACT

This system allows controlling a robotic arm by hand movements. This system uses RF receiver which is interfaced to the 8051 microcontroller which controls the driver IC which is responsible to control the movement of the arm. The transmitter circuit consists of an accelerometer sensor which is interfaced to the ATmega microcontroller.

The transmitter circuit sends commands to the receiver circuit. This commands indicates whether to move the robotic arm in upward or downward direction or whether the commands indicates to grip an object or release it.

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RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT: INTELLIGENCE ENERGY METER

PRINCIPAL INVIGILATOR: S.Mohankumar

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ABSTRACT

Intelligence Energy Meter (IEM) is the modification of the basic Energy meter which have been installed in our residence. It comprises Arduino microcontroller, GSM900 Module, mobile charger as a whole setup to make up an entire device. This Energy Meter will notice the voltage drop, voltage fluctuation, Power cut due to heavy load and directs the message regarding the situation to the Electricity Board. In our modern days we will not find a time to make payment for the electricity by waiting in a queue for a long time. To extent we possibly will not have a time to file a complaint regarding the power cut or voltage drop in our own residence. To overcome this scenario this Intelligence Energy Meter has been developed and planned to install in our residence. While this device has been setup in our residence it will follow the messaging protocol to send the message to the Electricity Board (EB), through the detection of power cut sensed by the microcontroller.

Keywords: Energy Meter, Microcontroller, GSM900 Module, Messaging Protocol

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DEPARTMENT OF MECHATRONICS

RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT:

ANALYSIS OF OVERALL EQUIPMENT EFFECTIVENESS OF A PANEL PROCESSING MACHINE

PRINCIPAL INVIGILATOR: Mr.R.Karthikeyan

CO-PRINCIPAL INVIGILATOR: -

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ABSTRACT

This Project takes me through a journey that deals with the analysis of overall equipment effectiveness of a panel processing machine. During the study of this project, it was found that the overall equipment effectiveness (O.E.E) of a panel processing machine (PEMAMAK) was not up to the company's expectations due to various reasons. The analysis made by me has revealed that there is a solution to increase the O.E.E of a panel processing machine. The O.E.E can be improved by an approach called Work Study which aims at achieving higher efficiency and effectiveness of existing facilities (both plant and human resources) through systematic analysis (usually in a relatively short time and with very little or no extra capital expenditure). The suggestions put forth by me in improving the O.E.E of a panel processing machine has taken this project to new dimensions and the final outcome of this project is productive for me and also to the company.

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DEPARTMENT OF MECHATRONICS

RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT:

REDUCTION WELDING DEFECTS BY OPTIMIZATION OF MAIN WELDING PARAMETER IN GMAW

PRINCIPAL INVIGILATOR: Mr. D.Senthipandiyan

CO-PRINCIPAL INVIGILATOR: Mr. A.Kalicharan

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ABSTRACT

Welding is widely used by manufacturing engineers and production personnel to quickly and effectively set up manufacturing processes for new products. To reduce the defects in welding process we have to optimize the welding parameters by using analysis of variance (ANOVA) Parameter Design methodology for Parametric Study of Gas Metal Arc Welding. Basically this welding method is used to join tubes. Design of experiments using ANOVA is employed to develop the weldment. The input process variables considered here include welding current, welding voltage & chuck speed. A total no of 8 experimental runs were conducted using an ANOVA, and the ideal combination of controllable factor levels was determined to calculate the signal-to-noise ratio. After collecting the data signal-to-noise (S/N) ratios were calculated and used in order to obtain optimum levels for every input parameter.

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DEPARTMENT OF MECHATRONICS

RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT: SEMI AUTOMATION OF CASING HEAD ASSEMBLY

PRINCIPAL INVIGILATOR: D.R.P.Rajarathnam

CO-PRINCIPAL INVIGILATOR: -

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ABSTRACT

Oil Field Equipments (OFE) are the major equipments used in the extraction of oil from the oil wells. Oil generally comprises of gasoline, natural gas etc., is the main source of energy for various commercial and industrial purposes in present scenario. The method of extraction implemented should be highly efficient in order to ensure the effective extraction of the useful energy resource. Effective extraction is possible only by means of using appropriate components with accurate dimensions and following proper quality standards. Various standards and regulations followed in the extraction of oil from the wells. American Society for Testing Materials (ASTM) standard provides guidelines for the design, manufacturing and inspection methodology of the OFE components. Series of testing and inspection are carried on the OFE components among which Hydro Testing is the most important one. The Hydro testing is carried out to determine whether the component withstands the working pressure level or not. Failures during Hydro testing will lead to catastrophic effects which will considerably affect the human beings, their working environment and economy.

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RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT: SEMI ENERGIZED BICYCLE

PRINCIPAL INVIGILATOR: Mr.A.Manojkumar

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ABSTRACT

The present invention is an energy storing and releasing bicycle rotary drive system which includes a crank which rotate a shaft about the shafts longitudinal axis. In previous bicycle implements they produce rotational motion in temporary. This concept is to produce maximum output torque or rotational motion by applying pedal force in continuous period. In this system obtained 270 degree rotational motion by applying 180 degree of rotational force. Here we are using two coil springs to produce a rotational motion by actuating in the principle of slider crank mechanism. Initial pedal force coil spring compressed along with rear wheel first half rotation to store the energy, after second rotation coil spring extract their original position to release the energy. During this period rear wheel rotate 75% of one full rotation, again applying the 50% of pedal force rotary system giving 75% output continuously. Using flywheel arrangement these max output will be obtained. Flywheel can helps to store the energy during pedal force and spring power generation. After that 25 degree of rotational power to be developed on each and every continuous process.in this system attached externally back side on the bicycle which is linked with the help of chain sprocket. Same number of gear teeth to transmit equal amount of energy in each drive.

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RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT: SQUARE HOLE DRILLING

PRINCIPAL INVIGILATOR: V.K. Gobinath

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ABSTRACT

This paper discusses the mechanical design and simulation of a square hole producing tool based on Reuleaux Triangle. The main aim of this paper is to investigate how a circular motion can be converted into a square motion by purely a mechanical linkage; an application of which is to construct a special tool that drills exact square holes. A geometrical construction that fulfills the laid objective is Reuleaux Triangle. Additionally, for this geometry to work from a rotating drive (such as a drill press) one must force the Reuleaux triangle to rotate inside a square, and that requires a square template to constrain the Reuleaux triangle as well as a special coupling to address the fact that the center of rotation also moves. The practical importance of this enhancement is that the driving end can be placed in a standard drill press; the other end, when restricted to stay inside the ambient square, will yield a perfectly square locus and this can be turned into a working square-hole drill. The developed design had a success rate of 98.7% i.e it removed approximately 98.7% area of the desired square. The fabrication of the developed design in this paper has been done on Steel (EN8) that is ideal for soft surfaces but if harder materials are used, hard surfaces application is also possible.

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DEPARTMENT OF INFORMATION TECHNOLOGY

RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT

IOT BASED VECHILE NUMBER PLATE RECOGNITION SYSTEM

PRINCIPAL INVIGILATOR: MR.B.PRABUSHANKAR

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ABSTRACT

"IoT Based Vehicle license plate recognition System"has been intensively studied in many countries. Due to the different types of number plates being used, the requirements of an automatic license plate recognition system are different for each country. In this paper, a number plate localization and recognition system for Indian vehicles. This system is developed based on digital images and can be easily applied to car park systems for the use of documenting access of parking services, secure usage of parking houses and also to prevent car theft issues. Automatic license plate recognition system is to extract vehicle license plate from a digital image. The paper based on a combination of the IoT and Image Processing filling up the holes approach method with area criteria test for the number plate localization. Segmentation of the plate characters was achieved by horizontal and vertical scanning method. The character recognition was accomplished with the aid of optical characters by the processof Template matching. We mainly concrete on three steps: one is to locate the number plate, second is to segment all the number and to identify each number separately, third is recognize each character.

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DEPARTMENT OF INFORMATION TECHNOLOGY

RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT

ROBUST WATERMARKING BY SVD OF WATERMARK EMBEDDED IN DKT-DCT AND DCT WAVELET COLUMN TRANSFORM OF HOST IMAGE

PRINCIPAL INVIGILATOR: MR.S.SARAVANAKUMAR

CO-PRINCIPAL INVIGILATOR: MRS.N.HEMALATHA

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ABSTRACT

Watermarking in wavelet domain and with SVD is popular due to its robustness. Watermarking technique using DCT wavelet, Digital Invisible Ink and hybrid DKT-DCT wavelet along with SVD is proposed. Wavelet transform is applied on host and SVD applied on watermark. Few singular values of watermark are embedded in mid frequency band of host. Blind Hide algorithm is used to simplest way to hide the information in an image (pixel by pixel), Singular values of watermark are placed at the index position of integrating transform coefficients. Along with adaptive selection of scaling factor adds to the robustness of watermarking technique. Performance of the proposed technique is evaluated against image processing attacks like cropping, compressing using orthogonal transforms, noise addition, histogram equalization and resizing. Performance of DCT wavelet and DKT-DCT wavelet is compared and in mark of the attacks DCT wavelet is found to be better than DKT-DCT wavelet.

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DEPARTMENT OF INFORMATION TECHNOLOGY

RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT

ROBUST WATERMARKING BY SVD OF WATERMARK EMBEDDED IN DKT-DCT AND DCT WAVELET COLUMN TRANSFORM OF HOST IMAGE

PRINCIPAL INVIGILATOR: MRS.N.HEMALATHA

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Robust watermarking

ABSTRACT

Watermarking in wavelet domain and with SVD is popular due to its robustness. Watermarking technique using DCT wavelet, Digital Invisible Ink and hybrid DKT-DCT wavelet along with SVD is proposed. Wavelet transform is applied on host and SVD applied on watermark. Few singular values of watermark are embedded in mid frequency band of host. Blind Hide algorithm is used to simplest way to hide the information in an image (pixel by pixel), Singular values of watermark are placed at the index position of integrating transform coefficients. Along with adaptive selection of scaling factor adds to the robustness of watermarking technique. Performance of the proposed technique is evaluated against image processing attacks like cropping, compressing using orthogonal transforms, noise addition, histogram equalization and resizing. Performance of DCT wavelet and DKT-DCT wavelet is compared and in mark of the attacks DCT wavelet is found to be better than DKT-DCT wavelet.

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DEPARTMENT OF INFORMATION TECHNOLOGY

RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT

OPTIMIZING GOVERMENT GROCERY FOR PUBLIC SERVICES

PRINCIPAL INVIGILATOR: MR.B.PRABUSHANKAR

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ABSTRACT

The Government of India is an effort to ensure for supply of food items to all the citizens. Essential items such as Rice, Wheat, Sugar, Kerosene etc., are supplied to the targeted underprivileged section as per the eligibility and at fixed rate by the government. Moreover, Gas is the most important factor for everyday life. But, Nowadays some people misuse the government schemes. So there is a demand for such product. Because of illegal activities some poor people are not able to get their products properly. To avoid such type of activities, we using "Online Database Management" to maintain the records of the products and peoples data's. According to current scenario, there is a high population in our country so some people are not able to get ration card itself. To avoid this, New card registration are also available in this because nowadays there is lots of trouble to getting the new ration card. Moreover people are cant able to buy a day to day grocery products in a high rate. To overcome this problems and this might be the best solution .The aim of this paper is to Organizing and summarizing existing and theoretical and empirical work on corruption avoid smuggling and optimizing view of public work with a view identifying opportunities.

KEYWORDS: Distributor login, Blogs, Customer login, New Card registration, ordering and Purchasing Grocery items, Public Forum, Voter-Id and EB bill link.

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DEPARTMENT OF INFORMATION TECHNOLOGY

RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT

SECURITY BASED AUDITIN IN CLOUD PANEL: SHARING FILES VIA PUBLICKEY DENIABLITY

PRINCIPAL INVIGILATOR: MR.S.SARAVANAKUMAR

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ABSTRACT

With cloud computing, users can remotely store their data into the cloud and use on-demand high-quality applications. Data outsourcing: users are relieved from the burden of data storage and maintenance when users put their data (of large size) on the cloud, the data integrity protection is challenging and enabling public audit for cloud data storage security is important. Users can ask an external audit party to check the integrity of their outsourced data. Purpose of developing data security for data possession at un-trusted cloud storage servers. It often limited by the resources at the cloud server as well as at the client. Given that the data sizes are large and are stored at remote servers, accessing the entire file can be expensive in input and output costs to the storage server. Also transmitting the file across the network to the client can consume heavy bandwidths. Since growth in storage capacity has outpaced the growth in data access as well as network bandwidth, accessing and transmitting the entire archive even occasionally greatly limits the scalability of the network resources. Furthermore, the input output to establish the data proof interferes with the on-demand bandwidth of the server used for normal storage and retrieving purpose. The Third Party Auditor is a respective person to manage the remote data in a global manner.

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DEPARTMENT OF INFORMATION TECHNOLOGY

RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT

ANTI-THEFTING OF VEHICLE, ACCIDENT NOTIFICATION AND SPOT LOCATION SYSTEM BASED ON ARM

PRINCIPAL INVIGILATOR: MR.B.VENKATESAN

CO-PRINCIPAL INVIGILATOR: MR.V.SARAVANABHAVAN

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ABSTRACT

World population has increased enormously and due to that poverty and thefting of vehicles also increased. Nowadays providing security and accident prevention is more challenging task. Our project will give an optimum solution to this drawback. This is followed by the system present in the car asking the user to enter a unique password. The password is like a pattern consists of switches representing high and low. The system sends a text message to the owner's mobile stating that the car is being accessed. If the user fails to enter the correct password within three trials, a text message is sent to the owner and police with the vehicle number and the location tracked using GPS, GSM and ARM7.

One more application of this project is that it is used for early accident detection. It can automatically detect accidents with the help of different sensors such as gas sensor, temperature sensor and vibration sensor and is there any mismatching parameter means immediate to that buzzer will on to notify the owner and to the police station & two more contacts which are already saved and location tracked based on location information from satellites in the form of latitude and longitude. This project can be used to control the thefting of vehicles, finding the location of vehicle and this can provide early response and rescue of accident victims, saving properties and lives.

KEYWORDS: GSM, GPS, Vibration Sensor, temperature sensor, gas sensor, ARM 7, buzzer, keypad, LCD display.

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DEPARTMENT OF INFORMATION TECHNOLOGY

RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT

ANTI-THEFTING OF VEHICLE, ACCIDENT NOTIFICATION AND SPOT LOCATION SYSTEM BASED ON ARM

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DEPARTMENT OF INFORMATION TECHNOLOGY

RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT

ANTI-THEFTING OF VEHICLE, ACCIDENT NOTIFICATION AND SPOT LOCATION SYSTEM BASED ON ARM

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CO-PRINCIPAL INVIGILATOR: MR.B.VENKATESAN

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ABSTRACT

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KEYWORDS: GSM, GPS, Vibration Sensor, temperature sensor, gas sensor, ARM 7, buzzer, keypad, LCD display.

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DEPARTMENT OF INFORMATION TECHNOLOGY

RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT

VECHICLE DRIVERS SLEEP DETECTION SYSTEM USING MATLAB

PRINCIPAL INVIGILATOR: MR.N.SIVAN

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ABSTRACT

The objective was to develop a non-invasive system for detecting the closing of eyes of a person driving an automobile and provide an alarm indication thus preventing road accidents from occurring. Live video relay of the driver's eyes is processed using Image Processing in matlab to detect whether the eye is closed for more than a fixed duration thus indicating conditions of fatigue, alcohol consumption etc. The result proves to be more accurate and safe compared tothe existing sleep detection system developed using Infrared Sensors and Micro-processors.

With the growth in population, the occurrence of automobile accidents has also seen an increase. A detailed analysis shows that, around half million accidents occur in a year, in India alone. Further, around 60% of these accidents are caused due to driver fatigue. Driver fatigue affects the driving ability in the following 3 areas,

a) It impairs coordination

b) It causes longer reaction times and

c) It impairs judgment

In this project we provide a real time monitoring system using Image Processing, face/eye detection techniques.

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DEPARTMENT OF INFORMATION TECHNOLOGY

RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT

SELF LEARNING CLASSIFIERS FOR INTERNET TRAFFIC

PRINCIPAL INVIGILATOR: MRS.J.SINDHUJA

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ABSTRACT

Network visibility is a critical part of traffic engineering, network management, and security. The most popular current solutions - Deep Packet Inspection (DPI) and statistical classification deeply rely on the availability of a training set. Besides the cumbersome need to regularly update the signatures, their visibility is limited to classes the classifier has been trained for. Unsupervised algorithms have been envisioned as a viable alternative to automatically identify classes of traffic.

However, the accuracy achieved so far does not allow using them for traffic classification in practical scenario. To address the above issues, we propose select, a Self-Learning Classifier for Internet Traffic. It uses unsupervised algorithms along with an adaptive seeding approach to automatically let classes of traffic emerge, being identified and labeled. Unlike traditional classifiers, it requires neither a-priori knowledge of signatures nor a training set to extract the signatures.

Instead, select automatically groups flows into pure (or homogeneous) clusters using simple statistical features. Select simplifies label assignment (which is still based on some manual intervention) so that proper class labels can be easily discovered. Furthermore, select uses an iterative seeding approach to boost its ability to cope with new protocols and applications. We evaluate the performance of select using traffic traces collected in different years from various isps located in 3 different continents. Our experiments show that select achieves excellent precision and recall, with overall accuracy close to 98%. Unlike state-of-art classifiers, the biggest advantage of select is its ability to discover new protocols and applications in an almost automated fashion.

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DEPARTMENT OF INFORMATION TECHNOLOGY

RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT

ADVANCED SECURITY SYSTEM FOR SENDING MESSAGES

PRINCIPAL INVIGILATOR: MRS.R.SANTHIYA

CO-PRINCIPAL INVIGILATOR: MR.R.JAYAVADIVEL

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ABSTRACT

Aliveon App is the next generation of smartphone surveillance software. This mobile tracker application records the incoming and outgoing phone calls, sms and surroundings. It tracks gps locations, the browser activity and messages from applications like Whatsapp, Facebook, instagram and wechat. Aliveon is an android application that tracks all information about your phone after installing it, this will help you to keep watch on your underage children or may be your employee so you can sleep without worry. Aliveon automatically backup the important information like contacts, SMS Record and Call Logs. So you can retrieve it, in case you lose it.

Aliveon helps to monitor your employee so businessman get idea of what they are doing in office time. And Businessman know if any employee leak any sensitive details, so ultimately it helps to gain more profit and find loyal employee.

Aliveon helps parents to find exact location of their children so they can sleep tension free. And it's also helps parents to know how their children use their mobile or who is in contact of your son/daughter.

Many managers or officers deal with important communication on regular basis with client or VIPs so Aliveon helps to record these all communication as proof of their commitment.

Aliveon automatically backup the important information like contacts, SMS Record and Call Logs. So you can retrieve it, in case you lose it.

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DEPARTMENT OF INFORMATION TECHNOLOGY

RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT

ADVANCED SECURITY SYSTEM FOR SENDING MESSAGES

PRINCIPAL INVIGILATOR: MR.R.JAYAVADIVEL

CO-PRINCIPAL INVIGILATOR: MRS.R.SANTHIYA

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Advanced Security

ABSTRACT

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Aliveon helps to monitor your employee so businessman get idea of what they are doing in office time. And Businessman know if any employee leak any sensitive details, so ultimately it helps to gain more profit and find loyal employee.

Aliveon helps parents to find exact location of their children so they can sleep tension free. And it's also helps parents to know how their children use their mobile or who is in contact of your son/daughter.

Many managers or officers deal with important communication on regular basis with client or VIPs so Aliveon helps to record these all communication as proof of their commitment.

Aliveon automatically backup the important information like contacts, SMS Record and Call Logs. So you can retrieve it, in case you lose it.

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DEPARTMENT OF INFORMATION TECHNOLOGY

RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT

IOT BASED HOME AUTOMATION SYSTEM

PRINCIPAL INVIGILATOR: MRS.S.LAVANYA

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ABSTRACT

The purposes of Internet of Things (IOT) based home automation system. Internet of things(IOT) based home automation system can be controlled over mobile devices. This system can perform varied functions to be performed at home. This allows accessibility over internet from any corner in the world. The main focus of this project is to minimize the usage of electricity and reduce human efforts.The Home Automation system (HAS) incorporates various aspects of technologies such as wireless networking, communication over cloud.The data to be analyzed is stored onto the cloud. The user can access multiple appliances over the internet as per their convenience. This is a low cost system. This system can control multiple devices

KEYWORDS: Internet Of Things (Iot), User, System, Home Automation System.

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DEPARTMENT OF INFORMATION TECHNOLOGY

RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT

AN INTELLIEGENCE SPATIO TEMPORAL DATA FROM HIGH UTILITY DIRECTIONAL ROUTE USING BIG DATA

PRINCIPAL INVIGILATOR: MRR.JAYAVADIVEL

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ABSTRACT

As mining utilities observing information route analysis from big data as well continue to increase their emphasis on safety with advanced traffic control center assistance systems (ADASs). To route emphasis finder is not only already in abundance but portable enough as well to be one of the most effective multipurpose devices that are able to analyze and advise on safety conditions. To propose a time dependent landmark graph to model the dynamic traffic pattern MASP as well as the intelligence of experienced route so as to provide a user with the practically fastest route to a given destination at a given departure time.

To identify the numerous semantic relations that exist in traffic, with a CADS (Collaborative Adaptive Data Sharing platform), which is an "annotate as you create" infrastructure that facilitates fielded data annotation based novel pattern extraction algorithm and a pattern clustering algorithm. Then, a Variance Entropy Based Clustering approach is devised to estimate the distribution of travel time between two landmarks in different time slots.

Based on this graph, it design a two stage routing algorithm to compute the practically fastest and customized route for end users Based on traffic condition automatic analysis information are given to traffic controls signals are equipped with numerous sensors that can help to aid in safety enhancements for traffic control centers on the road and also enhance the emergency control to traffic conditions.

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DEPARTMENT OF INFORMATION TECHNOLOGY

RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT

KEY AGGREGATE CRYPTOSYSTEM TECHNOLOGY FOR SCALABLE DATA SHARING IN CLOUD STORAGE

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key Aggregate

ABSTRACT

Data sharing is an important functionality in cloud storage. In this project, we show how to securely, efficiently, and flexibly share data with others in cloud storage. We describe new public-key cryptosystems which produce constant-size ciphertexts such that efficient delegation of decryption rights for any set of ciphertexts are possible. The novelty is that one can aggregate any set of secret keys and make them as compact as a single key, but encompassing the power of all the keys being aggregated. In other words, the secret key holder can release a constant-size aggregate key for flexible choices of cipher text set in cloud storage, but the other encrypted files outside the set remain confidential. This compact aggregate key can be conveniently sent to others or be stored in a smart card with very limited secure storage. We provide formal security analysis of our schemes in the standard model. We also describe other application of our schemes. In particular, our schemes give the first public-key patient-controlled encryption for flexible hierarchy, which was yet to be known.

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DEPARTMENT OF INFORMATION TECHNOLOGY

RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT

A SECURE DEDUPLICATION IN HYBRID CLOUD COMPUTING

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ABSTRACT

Data de-duplication is one of important data compression techniques for eliminating security model. As a proof of concept, a prototype of the proposed authorized duplicate check scheme and conduct test bed experiments using our prototype. The project shows, the proposed authorized duplicate check scheme incurs minimal overhead compared to normal operations. Duplicate copies of repeating data, and has been widely used in cloud storage to reduce the amount of storage space and save bandwidth. To protect the confidentiality of sensitive data while supporting de-duplication, the convergent encryption technique has been proposed to encrypt the data before outsourcing. To better protect data security, this paper makes the first attempt to formally address the problem of authorized data de-duplication. Different from traditional de-duplication systems, the differential privileges of users are further considered in duplicate check besides the data itself. It also present several new de-duplication constructions supporting authorized duplicate check in a hybrid cloud architecture. Security analysis demonstrates, scheme is secure in terms of the definitions specified in the proposed system.

KEYWORDS: Data De-duplication , Compression Technique, Prototypes, Encryption Technique, Cloud Storage, Traditional De-duplication system.

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DEPARTMENT OF INFORMATION TECHNOLOGY

RESEARCH PROJECT

ACADEMIC YEAR: 2015-2016

TITLE OF THE PROJECT

WEB BASED INTERNET APPLICATION FOR QUAITY DASHBOARD

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web based intranet

ABSTRACT

Web Based Intranet Application for Quality Dashboard system describes the software and methodologies used to produce the overview of the quality to the organization. Dashboard is a well-proven performance management practice that provides an organization wide perspective of business performance across multiple dimensions. Business performance indicators are defined in line with organization's business

A dashboard enforces clear articulation of organizations business objectives/goals and management expectations. The organizations process improvement initiatives are aligned and directed towards the business expectations of stakeholders. Business data is converted into action-oriented information; the actions are coordinated amongst diverse stakeholders and the execution aligned with the strategic goals.

This project is for manufacturing industry. Project is based on designing a Quality dashboard which will track all the ongoing manufacturing issues & help in define a goal of problem solving techniques through Root Cause Analysis for solving the said problem. Above all this dashboard guides the organization for planning and executing the necessary Action Plans.

QOS is assured with the feedback forms. Mostly over viewing the feedback, quality is maintained. Reports and complaints are processed. Logging the reports/complaints for study is difficult in the prior system. Rejection list are maintained over perspective department. Collecting reports from each department and organizing the overviews to maintain the quality is a tedious work.