Renewable Energy Sources

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For 7th Semester EEE

Regulation 2017

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CP

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SYLLABUS

ORO551 – RENEWABLE ENERGY SOURCES

UNIT I : PRINCIPLES OF SOLAR RADIATION

Role and potential of new and renewable source, the solar energy option, Environmental impact of solar power, physics of the sun, the solar constant, extraterrestrial and terrestrial solar radiation, solar radiation on titled surface, instruments for measuring solar radiation and sun shine,solar,radiation,data.

UNIT II : SOLAR ENERGY COLLECTION

Flat plate and concentrating collectors, classification of concentrating collectors, orientation and thermal analysis, advanced collectors.

UNIT III : SOLAR ENERGY STORAGE AND APPLICATIONS

Different methods, Sensible, latent heat and stratified storage, solar ponds. Solar Applications- solar heating/cooling technique, solar distillation and drying, photovoltaic energy conversion.

UNIT IV : WIND ENERGY

Sources and potentials, horizontal and vertical axis windmills, performance characteristics, Betz criteria BIO-MASS: Principles of Bio-Conversion, Anaerobic/ aerobic digestion, types of Bio-gas digesters, gas yield, combustion characteristics of bio-gas, utilization for cooking, I.C.Engine operation and economic aspects.

UNIT V : GEOTHERMAL ENERGY:

Resources, types of wells, methods of harnessing the energy, potential in India. OCEAN ENERGY: OTEC, Principles utilization, setting of OTEC plants, thermodynamic cycles. Tidal and wave energy: Potential and conversion techniques, mini-hydel power plants, and their economics.

SMART SYSTEMS FOR INDUSTRIAL APPLICATIONS
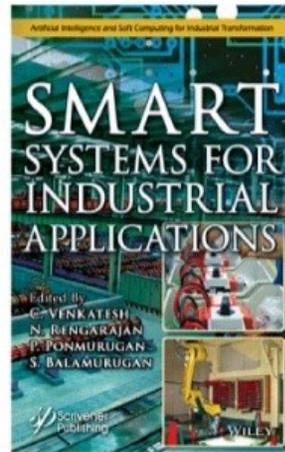
Edited by C. Venkatesh, N. Rengarajan, P. Ponmurugan and S. Balamurugan

Series: **Artificial Intelligence and Soft Computing for Industrial Transformation**

Copyright: 2021 | Expected Pub Date:2021/09/30

ISBN: 9781119762003 | Hardcover |

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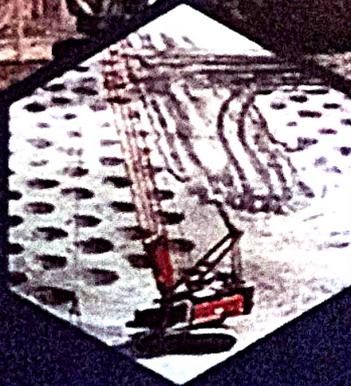
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978-81-949964-7-7

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International Conference on Current Research Trends in

Engineering,
Science & Management

Conference World

www.conferenceworld.in

29 March 2021

Editors
Dr. H.G.Chandrakanth
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CATTLE FEED CUTTING MACHINE

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ABSTRACT

The cattle feed cutting machine is mainly used for supplying required nutrients to animals and poultry feed. There are high-cost machineries available in the market. The final products can be used to feed cattle, goats, deer, and horses. Chaff cutters have developed gradually from the basic machines into commercial standard machines that can be driven at various speeds so as to achieve various lengths of cuts of chaff with respect to animal preference type. This paper represents the design, fabrication, development and testing of a low cost electrically operated animal feed cutting machine with locally available materials and promote their business well in the field.

Keywords: Cutter, DC motor, Battery, Solar panel

I. INTRODUCTION

A chaff cutter is a mechanical device used to cut the straw or hay into small pieces so as to mix it together with other forage grass and fed to horses and cattle. This improves the animal's digestion and prevents animals from rejecting any part of their food. Chaff and operations until they were replaced by tractors in the 1940s. Chaff cutters have developed gradually from the simple machines to commercial standard machines that can be driven at various speeds so as to achieve various sizes of chaff with respect to animal preference type. New chaff cutter machines include portable tractor driven chaff cutters in which cutting of chaff is done in the field and loaded in trolleys. The present green fodder cutting machine features a single, only rod-shaped cut green fodder, green fodder cannot cut block. Whether peasant family, tribunal or farms and sales markets are in urgent need of a new, practical, functional and greener fodder cutter. And as per today's scenario the population of cattle is drastically increased. So to increase the productivity and reduce the physical effort required for running the machine the motorized machineries came into existence.

II. EXISTINGSYSTEM

- The past technology of grass cutting is manually operated by the use of hand devices like scissor, these results into more human effort and more time required accomplishing the work.

- Alsoin old methods lack of uniformity of the remaining grass. Also due to the use of engine powered machines increases the air and noise pollution also this grass cutter require maintenance.

PLASTIC CRUSHING AND MELTING MACHINE

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ABSTRACT

The main aim of the concept is used to optimize the crushing of plastic; this project is used to crush the plastic for application of molding operation. This machine is very useful for time savings and reduces the human fatigue. Purpose of making plastic crusher machine is viable to control plastic waste management. The project consists of heater, pneumatic cylinder, and solenoid valve and frame setup.

Keywords: Heater,PneumaticCylinder,Solenoidvalve,Frame setup

1.INTRODUCTION

Plastic recycling is the process of recovering scrap or waste plastic and reprocessing the material into useful products. Since plastic is non-biodegradable, recycling is a part of global efforts to reduce plastic in the waste stream, especially the approximately eight million metric tons of waste plastic that enter the Earth's ocean every year. This helps to reduce the high rates of plastic pollution. Plastic recycling includes taking any type of plastic sorting it into different polymers and then chipping it and then melting it down into pellets after this stage it can then be used to make items of any kind such as plastic chairs and tables. Soft Plastics are also recycled such as polyethylene film and bags. The project is about design of a Plastic Bottle Crusher\ which would help to crush the used Plastic bottles and would thereby help in waste management and disposal. A crusher is a machine designed to reduce large solid material objects into a smaller volume, or smaller pieces. Crushers may be used to reduce the size, or change the form, of materials so they can be more easily and efficiently used in the purpose intended to. Crushing is the

process of transferring a force amplified by mechanical advantage through a material made of molecules that bond together more strongly, and resist deformation more, than those in the material being crushed do. Crushing devices hold material between two parallel or tangent solid surfaces, and apply sufficient force to bring the surfaces together to generate enough energy within the material being crushed so that its molecules separate or change alignment in relation to each other. The equipment mainly includes the cutting machine and the crushing machine, whose basic principle is to destroy the material's integrity depend on the shear strength and the impact strength.

II.EXISTINGSYSTEM

- They use mechanical set up crush the Plastics some of project use pressure with heat.

DESIGN AND FABRICATION OF ROAD CLEANING MECHINE

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ABSTRACT

Our study shows that dirt besides the roadcauses uncleanness and accident problems.We had developed a semiautomatic road side cleaning machine that insures that dust and dirt in sides of road should be clean. Our design proposes and successfully implemented the use of scrubber and brush that will remove the dust and collect it in to the storage box in which the scrubber is driven by engine which removes the dust and throws it into the path of brush. This brush is driven by speed amplification mechanism which consist of chain and gear drive separately. The motion of brush allow to push the removed dust into the storage box.

Keywords: Vacuum pump, Motor, Storage box

I.INTRODUCTION.

Environment is a place where humans as well as plantsand animals live. Keeping it clean and neat is our responsibility. It is necessary to keep our environment clean because we get fresh air, reduce pollution etc. An unclean environment leads to a bad condition of a society, arrival of diseases and many more. In recent years cleanliness is becoming an important factor for the betterment of the nation and so, to support the cause we have conducted a study, prepared a design and working of a Semiautomatic Road Cleaning Machine. The cleaning machine is an approach to deliver easy and time efficient cleaning of roads, by reducing human efforts.

There are in numerous functions of the road cleaning machine mainlycleanliness is becoming an important factor for the betterment of the nation and so, to support the cause we have conducted a study, prepared a design and working of a Semiautomatic Road Cleaning Machine. The cleaning machine is an approach to deliver easy and time efficient cleaning of roads, by reducing human efforts.

II .PROBLEM STATEMENT

Now, workers are hired to do this stuff but it is impossible to work continuously for workers. So this is time consuming and also costly process because of workers salary. The important factor is eliminating traffic problem because of less manpower as well as accident

A Smart Gear Lever Locking System

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ABSTRACT

The present condition of insecure environment causes increase in the ratio of vehicle theft, which creates a major responsibility towards manufacturers as well as owners of luxury automobile to inbuilt the anti-theft system which prevent the car from theft. The objective of this work is to design and fabricate an anti-lock gear lever system by locking the gear lever of the car with the help of microcontroller. This project is very useful for anti-theft, because gear lever unit is locked when vehicle is in the parking condition. Gear lever is released when the password is matched with the owner's password. And if the password is mismatched, the gear lever didn't unlock. When the vehicle is parked, anti-lock steering system is activated by the microcontroller.

Key words:Pneumatic Cylinder, Solenoid Valve, Gear Box.

I. INTRODUCTION

Car theft is one of the strangest events of one's life. Thus, theft proofing your car is as important as purchasing one. The additional vehicular security systems to be perfectly installed are very important. When the car is parked and locked by the owner it should be in rest in all condition till the owner unlocks it. With the increasing vehicle theft, the prime concern for vehicle safety and surveillance is arising. Thus, safety of the automobile has become a vulnerable issue which created the urge of developing new security system.

II. LITERATURE SURVEY

Samir Rana et al. (2018) In this paper, we have made an android app, which is used to communicate with the device installed in our vehicles, which in turn will control the functions of the vehicle, as well as ensure the locking of the accelerator, gear and brake pedals, so that the vehicle does not move. Thus, the most expensive and important asset of all of us, will be on our fingertips and fully secure. This will prove to be a great technique to prevent the theft of the vehicles, especially in metropolitan cities, where theft cases are being reported, every day.

K. M. Arunraja et al. (2017) The Anti-theft steering system and vehicle information system through password serves as a best safety and convenience system for the vehicle users to protect themselves from impending danger. This research work widens the area of safety and comfort systems in the field of automobile engineering providing various benefits such as accident prevention and passenger safety installations.

DESIGN AND FABRICATION OF TRI WHEEL E-VEHICLE

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ABSTRACT

The purpose of this study is to design rigid and lightweight chassis for an electric vehicle. Various chassis types with different geometries are considered chassis are designed using Computer Aided Design (CAD) software. Designs are analysed using software and performance characteristics are parametrically and structurally optimized. The automotive chassis is one of the most important structures of any self-propelled construction because of its multifaceted role on vehicle dynamic behavior. The main target is to evaluate chassis deformation, based on static and analysis, in order to reduce weight and at the same time achieve adequate vehicle operation in a demanding low energy consumption race. The design is carried out based on specific standards and limitations set by the competition regulations. The specifications of chassis materials linked to mechanical and physical properties are defined and set .A analysis is also set up and run, to determine the natural frequencies and the mode shapes of the chassis, so to partly understand the dynamic behavior of this structure. In order to improve the fuel efficiency and reduce emissions in air the use of conventional vehicles has to be reduced and the implementation of electric vehicles should be promoted.

Keywords: Design, E-Vehicle, Frame, Chassis.

I. INTRODUCTION

Renewable energy integration to the transportation has been increasing rapidly due to uncertainties in petroleum reserves and increasing environmental pollution caused by carbon dioxide emission. Electricity as a renewable energy is the major alternative to petroleum in transportation. Electric vehicle's environmentally friendly characteristic due to zero carbon dioxide emission makes it a good alternative to conventional internal combustion engine vehicles. Generally, electric vehicles consist of a chassis that resists all the loadings, an electric motor that runs the wheels and battery that supplies energy to the electric motor. Controlling and monitoring of the vehicle overall performance are handled by battery management system and motor controller system. The battery pack of an electric vehicle has a considerable amount of weight compared to the total weight of the electric vehicle. The weight of an electric vehicle becomes the major consideration because of the heavy battery packs. Weight increase of electric vehicles results in the decrease of the range without recharging. Vehicle manufacturers are striving to balance the heavy battery pack weight using lightweight chassis. Chassis is the main structure of a vehicle that all other components like engine, power train, steering system and wheels assembled on it. The main function of the chassis is to carry all the loads on it and to resist all the forces. Forces on chassis could be an inner force in case of acceleration and braking or could be an outer force due to road condition or crash impact. Manufacturers aimed to have more rigid and more lightweight chassis for safety and energy consumption. Innovative design and material use could significantly reduce the weight of the chassis and increase the range of the vehicle. The lightening process of the chassis also related with the safety of the chassis and lightweight chassis design must be structurally rigid. Innovative material use for the chassis could meet the desired safety and weight values. Different design types are used in chassis manufacturing. Type of the chassis directly affects the weight, safety vehicle.

COMPRESSED AIR USING PNEUMATIC CYLINDER

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ABSTRACT

The rate depletion of conventional sources of energy are much faster than the new ones are mae, which puts us in place to consider and identify the other sources of energy to drive the needs of the world. Compressed air as the energy source has shown promising results in the field of automobile. Efforts are being made by many organizations to design and develop compressed air-driven vehicle which definitely going to reduce the uses of fossil fuels and its share in the environment. This study presents the methodology towards design and fabrication of a vehicle equipped with pneumatic power generating concept. Most likely, it will be the evolution car that is being built by Zero Pollution Motors. The cars have generated a lot of interest in recent years, and the Mexican government has already signed a deal to buy 40,000 evolutions to replace gasoline- and diesel-powered taxis in the heavily polluted Mexico City.

I. INTRODUCTION

A Pneumatic air engine is a double acting pneumaticcylinder that creates useful work by expanding compressedair.A compressed-airvehicle 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 engine (CAE) uses the expansion of compressed air to drive their pistons. They have existed in many forms over the past two centuries, ranging in size from hand held turbines up to several hundred horsepower.

For example, the first mechanically-powered submarine, the 1863 Plan gear, used a compressed air engine. The laws of physics dictate that uncontained gases will fill any given space. The easiest way to see this in action is to inflate a balloon. The elastic skin of the balloon holds the air tightly inside, but the moment you use a pin to create a hole in the balloon's surface, the air expands outward with so much energy that the balloon explodes. Compressing a gas into a small space is a way to store energy. When the gas expands again, that energy is released to do work. That's the basic principle behind what makes an air car go. Some types rely on pistons and cylinders, others use turbines. Many compressed air engines improve their performance by heating the incoming air, or the engine itself. Some took this a stage further and burned fuel in the cylinder or turbine, forming a type of internal combustion engine. One manufacturer claims to have designed an engine that is 90 percent efficient. 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 iscalled hybrid-pneumaticelectricpropulsion. Additionally, regenerative braking can also be used in conjunction with this system.

TOXIC GAS SAFEGUARD IN AUTOMOBILES

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ABSTRACT

We have pleasure to introducing our new project " T O X I C   G A S   S A F E G U A R D   I N A U T O M O B This project is based on the gas detection in the car. Sensors are used to detect the gases present in the certain area. So, this device is used in car to detect the gas level present inside car. Because many death occurs in car due to breathing problems by air conditioner or by smoking inside the car causes suffocation inside the car that effect unconsciousness death and this device in the car is to detect the gas level of oxygen depletion or exceed of any harmful gases and it gives signal to the Arduino and it controls the car's windows motor and it opens the window, it allows atmospheric air inside the car, which helps to breath. Hence,we can reduce the accident and death rate by this project.

Keywords: *Arduino, Sensors, Oxygen depletion.*

I. INTRODUCTION

Present industry is increasingly shifting towards automation. Two principle components of today's industrial automations are programmable controllers and robots. In order to aid the tedious work and to serve the mankind, today there is a general tendency to develop an intelligent operation.This project idea was selected because we all are interested in working with and learning about sensors, Embedded, and automobile electronics. We are excited about this project because we will be building and testing our own sensor system and implementing it into a vehicle. In the cold winter or hot summer, many motorists like a long time to open the car air conditioning, due to the small interior space, doors and windows closed, the air inside and outside the car difficult to form convection, long-term operation of the engine will emit large amounts of carbon monoxide, these part of the gas into the car, and a long stay in the car, the occupants will be monoxide poisoning unknowingly lose severe life.

ARDUINO is the heart of the device which handles all the sub devices connected across it. It has flash type reprogrammable memory. It has some peripheral devices to play this project perform.It also provides sufficient power to inbuilt peripheral devices. We need not give individually to all devices. The peripheral devices also activates as low power operation mode. These are the advantages are appear here.

DRAINAGE CLEANING SYSTEM

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ABSTRACT

Water is the basic need for the existence of life on earth. In spite of 70% water on earth majority of water is not suitable for drinking purpose. There is a huge demand of clean water as it is used for a variety of purpose such as drinking, bathing, cleaning, cooking etc. Impurities present in water can cause serious health issues that can damage the life of human beings. The chief function of the automatic drainage system is to collect, transport, as well as dispose the solid waste in the waste bucket by the help of claws. Solid waste in drainage water includes empty bottles, polythene bags, papers etc. Impurities in drainage water can lead to blockage of the drainage system. In order to avoid such situation these impurities are needed to be taken out time to time for the continuous flow of drainage water. Drain can be cleaned continuously by the help of model using the drive system to remove the solid waste and threw it into waste bucket. This project is designed with the objective to initiate the efficient working of system. This project automatically cleans the water in the drainage system each time any impurity appears, and claws which are driven by chain sprocket grasp the solid waste and threw it into the waste bucket to avoid blockage. It even reduces the cost of manual labour as well as reduces the threat to human life.

I.   INTRODUCTION

Automatic Drainage Water Cleaning overcomes all sorts of drainage problems and promotes blockage free drains promoting continuous flow of drain water. In the modern era there have been adequate sewage problems where sewage water needs to be segregated to clean our surrounding environment. The waste and gases produced from the industries are very harmful to human beings and to the environment. Our proposed system is used to clean and control the drainage level using auto mechanism tech.

II.   LITERATURE REVIEW

Abhishek ,Lingesh S , Sabin Khatri , Manoj M , Mohammed Saleem A Sayed

 Design and Fabrication of Drainage Cleaning System

Nowadays even though automation plays a very important role in all industrial applications, the proper disposal of sewages from industries and commercials are still a challenging task. Drainage cleaning system is proposed to overcome the real time problems. With the continuous expansion of industries, the problems of sewage water must be urgently solved to minimize the increasing sewage problems from industries that effects the surrounding environment. The solid waste produced from the industries are very harmful to humans and to the environment

DEVELOPMENT OF STEPPED STILL SOLAR DESALINATION SYSTEM

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ABSTRACT

Solar still is widely used in solar desalination processes. But the productivity of the solar still is very low. To enhance the productivity of the single basin solar still many research works is being carried out up till now. In this work change the design of solar still used stepped solar still. Study the shape of the absorber surface over the distillate yield obtained the shape of the absorber surface provided in the basins of solar stills. The shape of use absorber surface plate area convex and concave increase basin water temperature causes the productivity and efficiency increase. In this work, experimental results were compared with conventional basin type still and still with wicks. That stepped solar stills can increase the distillate productivity about conventional solar stills, many reports studied the performance of stepped solar still. We are attempting to study the present status of different designs and performance of stepped solar stills enhances the productivity and efficiency of stepped solar still.

I.   INTRODUCTION

Water is the one of the resources that is potentially useful to all living beings. Often water sources are brackish containing harmful bacteria and therefore cannot be used for drinking. Distillation is the one of the processes that can be used for water purification. Desalination refers to the process of remove- ng salt and other minerals from water. Water is desalinated in order to convert salt water to fresh water which is suitable for human consumption or irrigation. Most of the research in desalination was focused on developing cost-effective ways of providing fresh water for human use. Various research works are being carried out to improve the performance of the still. The basin area of the still, free surface area of water, inlet temperature of water, wind velocity, solar radiation, depth is some of the factors that three times more than the conventional system. solar integrated along with solar still to enhance productivity. Many materials such as sponges, fins, wick and pebbles are added in the still and maximum 78% productivity was found for fin, sponge combinations. It was shown that about 20% of daily efficiency has been improved in the modified still. Lalit (2013) When the convex and concave type stepped solar stills were used, the average daily water distillate had been found to be 56.60% and 29.24% higher than that of flat type stepped solar still, respectively Theoretical analysis is also made by solving energy balance equations and compared with experimental.

A SMART TREADMILL BIKE

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ABSTRACT:

This project work modifies a treadmill to better fit the requirements of users. Treadmill bike is designed for those humans who love to run outside. Treadmill equipped on bike frame and formulates a big innovation named 'TREADMILL BIKE'. This bike has electronic parts and runs perfectly on human momentum. As the rider walks on the treadmill, the belt butts up against the rear wheel propelling the bike forward. Treadmill bike is designed for runners as the ideal treadmill device, this device combines the best exercise running and cycling to deliver a low-impact, high performance workout outdoors. We believe it is the ideal device for healthy runners. It delivers an exercise experience that is closer to running than anything else available today.
Key Words: Treadmill, Walking.

I. INTRODUCTION

The treadmill bike is completely a new way of movement completely designed for runners. Typically using a treadmill basically is similar to running, hiking or walking. Think about the last time you were riding a bike over some kind of obstacles such as train tracks, potholes, speed bumps. Possibilities are you stood up on the pedals to improve your balance when crossing the obstacle. Basically, the treadmill bike will provide the rider a well-balanced position the entire time. It is a combination of amalgamation of DC motor with different components upgrading your walking speed to a much higher pace. Since it uses no fuel it a very conventional option for people in their busy schedule to take care of their health completely. People with a busy schedule will also be able to take care of their health and physical fitness. Above all, it is not a conventional treadmill to make use of only in closed rooms, person using treadmill bike can roam on roads also. This project overcomes the drawback of the conventional treadmill which is stationary which in fact does not provide the jogger to get exposed to the natural atmosphere. So this proposed methodology provides an ultimate solution by making use of wheels and making the treadmill bike a walking cycle. The major elements in our project are as listed below.

II. LITERATURE SURVEY

[Kirtishbondre,2016][1] explains about the "Physical activity," "exercise," and "physical describe different concepts This fitness are three different terms that paper are confused with one another, and the terms gives definitions to distinguish them. Any bodily movement produced by skeletal muscles that result in energy expenditure is known as Physical activity. The energy expenditure is measured in kilocalories. In daily life physical activity can be categorized into occupational, sports, conditioning, household, or other activities. It is a

A SMART COCONUT AND PALM CUTTING DRONE

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ABSTRACT:

This Fruit plucking during harvesting period involves labor intensive and time consuming steps. Automatic fruit plucking drones has to be developed to avoid the scarcity of labor and to consume less time. In order to make drones automatic, fruits have to be detected and classified properly. Drone need to be stabilized during flight and remotely controlled by the user. Robotic arm with gripper needs to be interfaced with the drone to pluck and hold the fruit. There is a rising shortage of skilled labors for climbing because these works are not considered a respectable job by people, although the wages are very high. It is highly challenge to grab the fruits from high altitude tress such as coconut tree and palm etc. Grabbing the fruits of trees in hilly region and mountains are also very difficult. Project can be implemented to harvest various kinds of fruits in orchards like apple, banana, guava and citrus etc.

Key Words: Drone, Electric Motor, Slider crank mechanism, Cutting blade, Fruit identification.

I. INTRODUCTION

The skilled farm labour in the agriculture is one of the most cost demanding factors. This isdue to the rising values of supplies such as migration of large population from rural to urban areas, power, water irrigation, agrochemicals and so on. This puts the farming to be under pressure with small profit margins. Under these challenges food production and harvesting still needs to meet the growing demands of an ever-growing world population and this problem has to be overcome. India is a biggest agriculture country in the production of coconut and palm. Manual climbing on the trees is the major setback due to the shortage of skilled manpower (trained climbers) and accidents. It is directly affects the productivity and economics. During the cultivation process in the coconut and palm trees, the accidents are happened to the humans. To avoid this we would come with a new technology called A Smart Coconut and Palm Cutting Drone.

II. LITERATURE SURVEY

[Ruggiero, 2018][1] Multicopters are gaining more interest in many aerial applications. Multicopters include helicopter, tricopter, quadcopter, hexacopter and octacopters. When one or two of the motors are damaged or not functioning properly due to unpredictable environmental issues or mechanical failures, multirotors can still maintain stable flying. For heavy lift applications hexacopter is preferable than the quadcopter because they give more stability to drone, provide higher durability and larger payload. Octocopter also has the ability as hexacopter but it cost more price due to increase in number of motors.

BOTTLE CLEANING MACHINE

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ABSTRACT

This project "Automatic Bottle Washing Machine" deals with the cleaning of bottles used for packing soft drinks. This project will be quite useful when implemented in soft drinks manufacturing companies as bottles are collected and reused for packing.Recently the Cleanliness of these bottles had brought in a quality problem which leads to the reduction in sales for these soft drinks. Hence such a project which automates the cleaning of bottles might be of some help provided the water used for purpose is frequently changed and checked.This project deals with the fabrication of a simple model of the unit, which uses pneumatic components which are controlled by a Solenoid valve and Control Timing Unit.

Keywords-Bottle Cleaning Machine, RGB (Returnable Glass Bottle), SSR (Solid State Relay), Washing Compound

I. INTRODUCTION

In beverage filling and packaging industry, various types of machines are used to carry out the beverage filling and packaging process. However, some variation in terms of machines is possible depending upon the type of container used to carry the beverage in the beverage filling and packaging line. Mainly, three types of containers are used to carry the beverage: (1) RGB (Returnable Glass Bottle), (2) PET (Polyethylene terephthalate) bottle, and (3) Can.

The bottle washer machine is a prominent part of the bottle filling and packaging line and it is used in the beginning of the bottle filling and packaging line. The bottle washer machine is mainly used to clean the used bottles in case of RGBs and it is used to rinse the bottles in case of PET bottles before the beverage filling and packaging is carried out. The functionalities of the bottle washer machine will be different based on the type of beverage container used. The used RGBs need to be cleaned before beverage filling and packaging is carried out since used bottles may contain dust, sand, beverage residues, rain water, mineral stains and microbes.

The project proposes to undertake bottle washing process in an automated bottling plant. Both automated and manual operations are possible in the process. The manual operation, the Hand operated Direction Control Valve is Used. The automation process is done through a Solenoid Valve and Control Timing Unit. The project is an electro pneumatic project with an interconnection of pneumatic parts and electronics.

SMART MOTORIZED TROLLEY

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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 Motorized Trolley 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.

I. INTRODUCTION

Nowadays, many supermarkets offer convenience for shopping, one of which is a shopping trolley. It is used by customers inside the store to transport goods to the cashier during shopping and designed not to leave the store. One of the first shopping carts was introduced by Sylvan Goldman, He receives many complaints from his customers because they have difficulty in carrying groceries from his shop. He put the basket on a carriage with small wheels to help customers carrying groceries. To facilitate and satisfy his customers, he asked an engineer to design a modern shopping trolley and patented this invention. To this day, we find many shapes of shopping trolleys in a modern supermarket.

The concept addresses the expectations of customers whose basic demand is to reduce the various problems in the way of making their purchase. By initiating the idea of an RFID based shopping cart, people would easily understand the bill of products themselves, irrespective of the presence of staff of the shop as details of product would be readily available and would be displayed on the trolley as they add the product in the trolley. This outcome of this project will not only be in favor of the customers but also the mall owners who can make a one-time investment which can lead to long-term benefits in terms of business as well as customer satisfaction.

II. LITERATURE SURVEY

People have consistently imagined and built up an innovation to help their needs as far back as the start of humanity. The fundamental reason for headway in innovation has been in limiting errands and making regular tasks simpler and quicker, regardless of the different spaces accessible. A significant task on which people are discovered spending significant measure of time is shopping. For this at start we used Barcode system but after

E-VOTING APPLICATION USING BIOMETRICS & SMS OTP VERIFICATION

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ABSTRACT

*The project title is "**E-VOTING APPLICATION USING BIOMETRICS &SMS OTP VERIFICATION**".The problem of voting is still critical in terms of safety and security. This paper deals with the design and development of a web-based voting system using finger print and Aadhaar card in order to provide a high performance with high security to the voting system. Also, we use web technology to make the voting system more practical .The proposed Online Voting System allows the voters to scan their fingerprint ,which is then matched with an already save damage with in a data base that is retrieved from Aadhaar card database of the government. The voting system is managed in a simpler way as all the users must login by Aadhaar card number and One Time password and click on his/her favorable candidates to cast the vote. This will increase the voting percentage in India and reduces the cost of voting process. By using biometric fingerprint it provides enough security which reduces he false votes*

***Keywords**: Admin ,User, Biometric, Fingerprint*

1. INTRODUCTION

Voting schemes have evolved from counting hands in early days to systems that include paper punch card mechanical lever and optical scanner machines. An electronic voting system which is used nowadays provide some characteristic different from the traditional voting technique, and also it provides improved features of voting system over traditional voting system such as

Accuracy, convenience, flexibility, privacy, verifiability and mobility .But Electronic voting system suffers from various drawbacks such as time consuming, consumes large volume of paper, work, no direct role for the higher officials ,damage of machines due to lack of attention mass up date does not allow users to update and edit many items simultaneously etc.

These drawbacks can overcome by Biometric and SMS OTP Online Voting System. This is a voting system by which any voter can use his/her voting rights from anywhere in the country. We provide a detailed description of the functional and performance characteristics of biometric online voting system. Voter can cast their votes from anywhere in the country without visiting to voting booths, in highly secured way. That makes voting a fearless of violence and that increases the percentage of voting.

AN AUTOMATED COVID-19 FACEMASK DETECTION WITH DEEP LEARNING

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ABSTRACT

The COVID-19 pandemic is causing a worldwide wellbeing emergency so the successful security strategies is wearing a face veil in open regions as indicated by the World Health Organization (WHO). The COVID-19 pandemic constrained governments across the world to force lockdowns to forestall infection transmissions. Reports show that wearing face veils while at work unmistakably diminishes the danger of transmission. A proficient and monetary methodology of utilizing AI to establish a protected climate in an assembling arrangement. A mixture model utilizing profound and traditional AI for face cover discovery will be introduced. A face veil identification dataset comprises cover and without cover pictures , we will utilize OpenCV to do continuous face location from a live stream through our webcam. To utilize the dataset to assemble a COVID-19 face veil indicator with PC vision utilizing Python, OpenCV, and TensorFlow and Keras. We will probably recognize whether the individual on video transfer is wearing a face cover or not with the assistance of PC vision and (RCNN) profound learning

Keywords; COVID19,R-CNN,Deep learning

I. INTRODUCTION

A vital weapon against the spread of COVID-19 has been the utilization of face veils. This has been ordered and underlined by the administrations of various nations, in view of the rules by the World Health Organization (WHO). As per the WHO, face veils can be utilized for control of source (worn by tainted people to restrain further transmission) or for the assurance of sound individuals. Programmed face-cover location at constant is arising as an intriguing issue with regards to picture handling and PC vision. The objective has been to identify consequently if an individual is wearing a cover. We present here a novel model dependent on neural organizations, explicitly, convolutional neural organizations, that has an exactness of 96%. Because of our work, governments, strategy producers, medical care suppliers and educationalists will have the option to discover if there are specific spots or areas and possibly specific timings when individuals are not wearing face covers. Therefore, they can design and coordinate mindfulness crusades, law authorization fortifications, free face veil disseminations and such exercises..

LICENSE ELIGIBILITY MEASUREMENT SYSTEM

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ABSTRACT

Now a days in current situation, test for driving license is not done before the RTO officer. it is done by the driving school, they provide certificate for driving. After the driving school given certificate they applied for driving license it was easily getting from the RTO office. During this , certification from the Driving School. some of them have a chance for fraud work, that is without drive a car or bike they will provide certificate for money ,then the person will easily get a driving license. These type of person have a 90% chance of accident on the road. By avoid these type of accident, in this paper we discuss about the driver performance measuring by a eligibility test kit. A driver performance measuring kit will helps to analyze the member who is driving the car and their driving data will be collected from the sensors to Microcontroller and the data is automatically updated to the test kit.

Finally the data will be send to the RTO office Via GSM Technology ,after completing a driving course eligible candidate only getting the driving license from the RTO office. The main aim of this project helps to avoid Accident on Road and fraud done during the driving test.

I. INTRODUCTION

Now-a-days in our country most of the existing RTO offices didnt have systematic driving license verification system. If we want to get the driving license from RTO office, it is not a difficult task now a days but maintaining the original driving license is major task to the vehicle users . On the other side vehicle users are cheating the police by maintaining fake license which was crime. Currently driving license card having details like driving license identification number and address Details of the authorized vehicle Drivers are being morphed. So now-a-days the persons who are maintaining fake driving license, they are removing the authorized vehicle driver license photo and the details and using same license identification number . This is the major disadvantage for the authorized driving license persons and it is advantage for the persons who are maintaining fake driving license. In order to overcome these problems an authenticating driving license system is proposed and provided to RTOs. By making use of RFID reader we can maintain authenticated driving license system. The existing method at the road transport officers was we need to fill the online driving license application form and next step is the written exam, that exam issuing a driving license by taking photo and the details of the

DETECTING AND TRACKING MENTAL ILLNESS ON SOCIAL NETWORKS BY USING SVM

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ABSTRACT

Although rates of diagnosing mental illness have improved over the past few decades, many cases remain undetected. Symptoms associated with mental illness are observable on Twitter, Facebook, and web forums, and automated methods are increasingly able to detect depression and other mental illnesses. In this paper, recent studies that aimed to predict mental illness using social media are reviewed. Mentally ill users have been identified using screening surveys, their public sharing of a diagnosis on Twitter, or by their membership in an online forum, and they were distinguishable from control users by patterns in their language and online activity. Automated detection methods may help to identify depressed or otherwise at risk individuals through the large-scale passive monitoring of social media, and in the future may complement existing screening procedures.

1.INTRODUCTION

1.1 About The Project

Psychological Stress is becoming a threat to people's health nowadays. With the rapid pace of life, more and more people are feeling stressed. According to a worldwide survey reported by new business in 2010, over half of the population have experienced an appreciable rise in stress over the last two years. Though stress itself is non-clinical and common in our life, excessive and chronic stress can be rather harmful to people's physical and mental health. According to existing research works, long-term stress has been found to be related to many diseases, e.g., clinical depressions, insomnia etc. Moreover, according to Chinese Center for Disease Control and Prevention, suicide has become the top cause of death among Chinese youth, and excessive stress is considered to be a major factor of suicide. All these reveal that the rapid increase of stress has become a great challenge to human health and life quality.

2.LITERATURE SURVEY

2.1 Related work

We have divided the related work into four subsections. First, we discuss the state-of-the-art approaches for studying depressive behavior on social data. Second, we review studies that have inferred demographic information using social media data.Then, we discuss the association between color sensitivity and mental health disorders. Finally, we cover state-of-the-art studies

CREDIT CARD FORGERY ANALYSIS

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1 NTRODUCTION

Now a day the usage of credit cards has dramatically increased. As credit card becomes the most popular mode of payment for both online as well as regular purchase, cases of fraud associated with it are also rising.Online Shopping – one of the largest and fast going trendMode of payment – credit card, debit card, Net Banking Online payment does not require physical card Major Risk – credit card detail is known to other

2 RELATED WORK

2.1 A Cost-Sensitive Decision Tree Approach For Fraud Detection

Author :Yusuf Sahin a,, Serol Bulkan b, Ekrem Duman c

With the developments in the information technology, fraud is spreading all over the world, resulting in huge financial losses. Though fraud prevention mechanisms such as CHIP&PIN are developed for credit card systems, these mechanisms do not prevent the most common fraud types such as fraudulent credit card usages over virtual POS (Point Of Sale) terminals or mail orders so called online credit card fraud. As a result, fraud detection becomes the essential tool and probably the best way to stop such fraud types. In this study, a new cost-sensitive decision tree approach which minimizes the sum of misclassification costs while selecting the splitting attribute at each non-terminal node is developed and the performance of this approach is compared with the well-known traditional classification models on a real world credit card data set. In this approach, misclassification costs are taken as varying. The results show that this cost-sensitive decision tree algorithm outperforms the existing well-known methods on the given problem set with respect to the well-known performance metrics such as accuracy and true positive rate, but also a newly defined cost-sensitive metric specific to credit card fraud detection domain. Accordingly, financial losses due to fraudulent transactions can be decreased more by the implementation of this approach in fraud detection systems.

3 SYSTEM ANALYSIS

3.1 EXISTING SYSTEM

Three methods to detect fraud are presented. Firstly, clustering model is used to classify the legal and fraudulent transaction using data clusterization of regions of parameter value. Secondly, Gaussian mixture model is used to model the probability density of credit card user's past behavior so that the probability of current behavior can be calculated to detect any abnormalities from the past behavior. Lastly, Bayesian networks are used to describe the statistics of a particular user and the statistics of different fraud scenarios. The

PREVENTION OF PORT FORWARDING AND PRIVILEGE ESCALATION

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ABSTRACT

A privilege escalation in the Linux system can be defined as a method of gaining access to the kernel system and allowing the user to have an administrative access to the local admin account system on the computer. This problem describes the of concept attack scheme using Dynamic port forwarding. The attack scheme, the same interaction on the physical access to the computer system could be accomplished by the attacker using a little effort specialized Port vulnerability to take over the computer system in full where it will collect valuable information,to avoid that through IP block and Preventing Port vulnerability.To preventing like user-friendly python programming language to run check and resolve the problem.

Privileges describe what a user is permitted to do such as viewing files, modifying or deleting data. Privilege escalation takes place when a user gets access to more resources or services than they are normally allowed to perform unauthorized actions. It attacks the main kernal OS of the Computer system like as a user to escalate the admin permission.

Keywords: **Privilege escalation, Port ,vulnerability**

1.   INTRODUCTION

Port vulnerability mechanims to scanning 65,565 ports then to block backdoor operation running on that port,In case the system Port forwarded to prevent that process.A privilege escalation in a way to obtain the permission form unprivileged access to the higher level of administrator privilege. In Linux system that is being access into guest account have a restricted features and limitation to certain function. A privilege escalation in a way to obtain the permission form unprivileged access to the higher level of administrator privilege. In Linux system that is being access into guest account have a restricted features and limitation to certain function. It is include to limit the activity of the guest user to change or going into the system's programs. Whereby User Account Control (UAC) is a Linux program that has a concept of privilege escalation by means if the guest user is performing a task under administrative level of permission.The existing Kernels of operating systems are written in low-level unsafe languages inevitably vulnerable to memory corruption attacks.

User Account Control or UAC in Linux is a security feature which helps to prevent an unauthorized changes to the Linux operating system that can be initiated by applications, users or malware. This feature will ensure only certain changes will be executed under normal guest account which required approval from the administrator account.

Optima Web Application Development using Angular JS

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ABSTRACT

Optima ("PROPOSAL DOCUMENT FOR OPTIMAL ENHANCEMENT DEVELOPMENT") is one of the five important scientific research project funded by the Italian space to study of the application the information of the imaging spectrometer. And the panchromatic camera of the prisma mission. One of the main tax of the project.is the implementation of advance autonomous techniques for radiometric calibration and atmosphericcorrection. Using of coding web page application.Proposal_MSPL_optima_Enhancement , the using of project programming are HTML, CSS, JS, BOOTSTRAP, ANGULAR JS. The design of the job card will be mutually discussed and approved.in this method we used in working for company project schedules system. Olympus required to enhance the functionality of Optima portal in Reference to Requirements for Optima 2.0 Upgrade document, the scope and deliverables planned and details in the document. The performance of the software in terms of its response time whiling Check-in, while clicking on various workflow tabs and while exporting data should be substantiallyimproved.

Keywords: *Knowledge Base, QC, Model Driven Architecture (MDA), Software Migration.*

1 .INTRODUCTION

Olympus required to enhance the functionality of Optima portal in Reference to Requirements for Optima 2.0 Upgrade document the scope and deliverables planned and details in the document. The Italian space to study of the application the information of the imaging spectrometerAnd the panchromatic camera of the prisma mission. One of the main tax of the project is the implementation of advance autonomoustechniques for radiometric calibration Andatmosphericcorrection.In addition to the card view, the jobs should also be displayed in Grid View (switch to grid / card option on the display).

The column headings of the grid view, the action buttons above the grid view and the action icons on each row of the grid view will be discussed and agreed.

2. PROJECTSCOPE

2.1 Performance Improvement of theSoftware

The performance of the software in terms of its response time whiling Check-in, while clicking on various workflow tabs and while exporting data should be substantially improved

SMART MISBEHAVIOUR DETECTOR

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ABSTRACT

In today world everyone installed CCTV camera for security purpose. The CCTV cameras continuously record the situations. Hence there is an unnecessary memory wastage if there is nothing happening in front of the camera. User put a person for monitor cameras 24*7.The proposed system main concepts is how to use CCTV more efficiently. Which will record each and every action if there is happens any unusual activity in front camera it will automatically alert authorized person. We can use camera for Human Motion Detection (yolov3) .The camera is used to catch the live images of the area in which it is being implemented, if any object is moving. If there is any misbehavior activities happens the capture live images automatically detect the behavior of the victim by using yolo version 3, by the detection if its misbehavior emergency mail alert automatically sent to the authorized person and nearby police station with photo image. The mail sending working based on simple mail transfer protocol.

Key words: *Object detection (yolov3),Object tracking (deep sort), pascalvoc, Simple Mail Transfer Protocol, CCTV.*

I. INTRODUCTION:

Capturing the live video nourish into the webcam is the first step in video surveillance. It is not feasible to process the video directly. Analyzing images, our proposed system compare the current frame captured with previous frame to detect the human motion. Activity Behavior of the human is analyzed by using of trained image. CCTV is the monitoring of the behavior, activities, or other changing Information. Video analysis involves object tracking. Object tracking is based on deep sort. way to look at object tracking is the creation of temporal correspondence among detected object from frame to frame. Object tracking is an important component of many vision systems. It is used not only for visual surveillance, but also for augmented reality, traffic control, medical imaging, gesture recognition, etc.

Primary need of the system is huge amount of dataset for perfect accuracy. In first our system trained for humans and their motions, after that we trained our model for misbehavior. Our system also applicable for real time and video recording. Our system model can use many field like directing (cini field), traffic, Bank safe , factory and other public places.

INTELLIGENT WATER QUALITY MONITORING AND LEAKAGE DETECTION SYSTEM

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ABSTRACT

In the urban area, the physical infrastructure plays an important role. In water distribution system, the water supplied from the reservoir to the consumer end. The pattern of the pipeline will follow the road network of the area. Due to rapid urbanization in an urban area, the water demand is rapidly increasing. Therefore, the pressure on the existing network is growing. This may result in the gap between supply and consumer chain in a different manner. Leak detection plays a significant role in the efficient management of Water Distribution System (WDS), as it will help in reducing water wastage. Water leakage is main problem which is to be rectified. The water quality is to be monitored to avoid some chronic diseases. By applying modern tools in the system, the existing problems will be minimized and give one step ahead for the making of the smart city.

I. INTRODUCTION

Driven by increasing concerns over the security of the nation's water supply and water quality infrastructure, reliable access to safe and clean drinking water has become one of the greatest global challenges. In order to maintain a safe water quality, it is critical to continuously monitor sudden changes in toxicity concentration at various water supply and distribution system locations at industries. Conventional techniques are not suitable for providing the required analysis capabilities of water quality because they are time-consuming, cumbersome and need a wide range of *ex-situ* experiments with external equipment. With the continuous economic growth, the water demand of enterprises is also increasing.

With the continuous economic growth, the water demand of enterprises is also increasing. The monitoring of water resources for these enterprises can prevent the occurrence of stealing water and leaking water effectively. Therefore, the monitoring system of urban water supply has aroused extensive attention in recent years. Urban water supply networks form the link between drinking water supply and drinking water consumers. These large-scale networks are vital for the survival of urban life, for maintaining a healthy level of economic development, and for the continuous operation of factories and hospitals. Water is one of the most important natural resource

AUTO-TRACKING AND CONTROL OF LIGHT CHASING VEHICLE USING IOT

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ABSTRACT

This paper mainly discusses the application of Internet of Things (IoT) technologies; all the things around us are getting smarter. This project mainly discusses the application of Internet of Things (IoT) in mobile vehicle tracking. We combine embedded control and IoT technology to design and develop a smart light chasing vehicle that automatically chases the light source and tracks it moving direction and moving path. This light-chasing vehicle can be used with Arduino embedded control technology combined with four-azimuth light sensing component are used to design and develop a smart chasing vehicle that can automatically chases the light source from eight directions(N, E, W, S, NE, NW, SE, SW) and record the sensing value and moving direction. In addition through the IoT remote WiFi wireless communication function, light source parameters and the vehicle moving direction can be transmitted. The real time vehicle tracking system is to be implementing to monitor, the vehicle live location as well as vehicle tracking record through GPS (Global Positioning system).

1. INTRODUCTION

The Internet of Things (IoT) refers to a message connection and switching network formed by physical objects, such as vehicles, machines, household appliances, etc., through embedded control sensors and API devices. IoT can digitize the real world and has a wide range of applications. Its main application areas include transportation and logistics,industrial manufacturing, health care, smart environments (home, office, and factory), individuals and society, with a very broad market and application prospects. In order to explore the application of IoT technology in mobile vehicle tracking, this study combines Arduino embedded control and IoT communication technology. On the one hand, the four-direction light sensing components are used to design and develop a smart chasing vehicle that can automatically chase the light source from eight directions and record the sensing value and moving direction. In this paper, the system architecture and system development of this automated light-chasing vehicle will be described , and topics such as the light -chasing control process of the vehicle and the algorithm for determining the direction of movement when displaying the moving path will be discussed.

1.1 INTERNET OF THINGS (IOT)

The **Internet of Things** (**IoT**) is a system of interrelated computing devices, mechanical and digital machines, objects, animals or people that are provided with unique identifiers and the ability to transfer

STRESS DETECTION AND REDUCTION
USING BINAURAL WAVES

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ABSTRACT

The negative effects of mental stress on human health has been known for decades. High-level stress must be detected at early stages to prevent these negative effects After the emergence of wearable devices that could be part of our lives, researchers have started detecting extreme stress of individuals with them during daily routines .We developed an automatic stress detection system using physiological signals obtained from unobtrusive smart wearable devices which can be carried during the daily life routines of individuals. Stress can trigger ill mental health or, at any rate, poor mental health, which places psychological stress on the body. It is estimated that 60% of doctors' appointments are triggered by stress-related symptoms.

Keywords-Stress, Galvanic skin response, Binaural waves, Noemcu, Arduino.

I.   INTRODUCTION

Stress, better explained in , is a response to particular events. It is the way our body prepares itself to face a difficult situation with focus, strength and heightened alertness. When we perceive a threat, our nervous system responds by releasing a flood of stress hormones, including adrenaline and cortisol. These hormones rouse the body for emergency action. In some cases it is necessary to collect feedback in order to control this symptom because it can become dangerous in certain situations. Therefore, it is necessary to build a device to detect stress.

In our method we use pulse oximeter and galvanic skin response to detect stress, when the user is in stress the pulse rate and skin conductance is monitored and at the critical stage a message to the registered mobile number and after the pre-stored binaural waves can played automatically, the user can hear it through headphones.

II. LITERATURE REVIEW

[1]Although psychologists studied emotions since the 19th century, there is still no consensus on a universally accepted definition of what emotions are and how they are generated. However, over a century of research clearly shows that emotions and bodily functions are related. For this reason, many studies in the psychophysiology literature employ physiological data such as electrodermal, cardiovascular and muscular activity to measure participants' affective states including those related to stress. Other instruments such as

DIGITAL   IMAGE   ENHANCEMENT USING MULTIPLE MOTION ANALYSIS

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ABSTRACT

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 choices for improving the visual quality of images. Appropriate choice of such techniques is greatly influenced by the imaging modality, task at hand and viewing conditions. This project will provide an overview of underlying concepts, along with algorithms commonly used for image enhancement. The paper focuses on spatial domain techniques for image enhancement, with particular reference to point processing methods and histogram processing.

INTRODUCTION

Image processing is a method to convert an image into digital form and perform some operations on it, in order to get an enhanced image or to extract some useful information from it. It is a type of signal dispensation in which input is image, like video frame or photograph and output may be image or characteristics associated with that image. Usually Image Processing system includes treating images as two dimensional signals while applying already set signal processing methods to them. It is among

rapidly growing technologies today, with its applications in various aspects of a business.

Image Processing forms core research area within engineering and computer science disciplines too.

SYSTEM MODEL

Image restoration removes or minimizes some known degradations in an image. In many image processing applications, geometrical transformations facilitate processing. Examples are image restoration, where one frequently wants to model the degradation process as space invariant, or the calibration of a measurement device, or a correction correction in order to remove a relative movement between object. Multiresolution/multi orientation methods, such as the wavelet transform, originally developed in the signal processing field have been proposed for image enhancement, segmentation or edge detection in the field of digital mammography since it

SMART WASTE MANAGEMENTUSING AI

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ABSTRACT

This Paper deals with the mostblistering topic i.e. waste segregation using AI. An efficacious management needs to be materialized for better planet to live in. Hence, with our cost effective project proposal, we try to bring in the change. This paper proposes an automatic waste segregator (AWS) using AI which is a cheap, easy to use solution for a segregation system at households, so that the wastes can be sent directly for processing. AI based waste segregator is designed to sort the waste into three main categories namely; metallic, organic and plastic, thereby making the waste management more effective. Sensors are connected near smart bin to detect different types of waste. first sensor connected is the capacitive proximity sensor to detect non conducting waste and which is having highest priority among the two sensors connected. This sensor gives accurate results even for smaller objects.

I. INTRODUCTION

To make the cities greener, safer, and more efficient, Internet of Things (IOT) can play an important role. The implementation of proper waste management system will avoid the spreading of such disease. In project we proposes a smart mechanism for improving the management of wastes in cities. Things that are connected to the Internet and thosedevices controlled from the Internet is called Internet of Things. In this system, the smart bin is connected with the internet to display the exact information about the dustbin level and to which area it belong. In present there was a rapid growth in the population which leads to large quantity ofwaste disposal in the cities. The overflow of dustbin will create a unpleasant environment and it affect many people by spreading the deadly disease.

The ultimate need of the hour for a developing nation is the key for "Smart City". The influential ecological factors that poses to be a threat to this may include: hazardous pollution and its subsequent effects on health of humanity, alarming global warming and depletion of ozone layer etc. Mostly Environmental pollution may be owing to the Municipal Solid Leftovers (MSL). A Proper maintenance becomes mandatory for an efficient and effective removal of the generated Municipal Solid Leftover. It is perceived that often the waste space gets too much occupied due to irregular removal of garbage occupancy in the dustbin.

II LITERATURE REVIEW

[1] Solid waste management has become one of a major concern in environmental issues (Mazzanti &Zoboli, 2008). This is particularly true to urban areas where population is rapidly growing and amount of waste generated is increasing like never before (Kathiravale&MohdYunus, 2008).

Current earth's population is 6.8 billion and it isestimated that almost half of this population lives in urban areas (Population Division ofthe Department of Economic and Social Affairs of the United Nations Secretariat, 2009).

Smart Glass for Blind People

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ABSTRACT

Eyes are the blessings given by God to humans to live their life beautifully. The world population is about 7.8 billion, but everyone having the right vision means it is questionable. People with visual impairments use Braille Codes for reading and writing, walking sticks to detect and identify obstacles in their paths. People who are experiencing these kinds of impairments may face various problems, some of them are teased without their knowledge, some may make fun of them. This stressful environment is not good for Blind People. The main objective of our project is to make sure that blind people are aware of the person whom they are interacting with and notifying them with audio of the person's name. With the help of our proposed system, blind people can survive without depending on others or any external assistive systems. This system makes use of deep learning techniques to identify a person and provide their name as an audio output through earphones. The modern tools are just available to alert them in case of any objects present in front of them and these devices have low accuracy and cost is also high in which Blind people cannot afford to buy those gadgets. Our project provides good accuracy, best performance results for Blind people.

Keywords- Haar Cascade, Numpy array, Tensorflow, Opencv-Python, Face recognition.

I. INTRODUCTION

Blindness as well as low vision, are conditions where people have a decreased ability to see and visualize the outside world. This reduces their mobility and productivity in completing their daily tasks. Blind people usually depend upon experience, smart sticks or some other people to help them in walking and avoiding obstacles. They do not have a sense of sight which makes highly dependent on their memory. Also, they cannot be aware of sudden changes in the surroundings which makes it almost impossible to react to an instantaneous situation. Understanding any of the visual aspects like colour, orientation and depth of an object is not easy. However, in the recent past, technology has made many advancements for the Visually impaired human beings. Hands free devices work completely on the audio input of the users. However, these devices are not enough to make the personal life and professional life of sight impaired people easy. They only take audio input and when users want to understand the image of their surroundings or texts. These are not helpful for Blind people. In order to increase their level of assistance, their innovation will be more helpful to Blind people. This makes visually challenged smartly survive in an environment as like normal people.

II. LITERATURE REVIEW

[1]A system with people tracking and re-identification using RGB-D camera was developed by Kenji Koide is all about to identify the person in an office and track their paths. It is a face recognition-based people tracking

EFFICIENT SUIT WITH SUPERIOR SAFETY FOR SOLDIERS IN BORDER USING IOT

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ABSTRACT

In today's world, enemy warfare is an important factor in any nation's security. One of the important and vital roles is played by the army soldiers. There are many concerns regarding the safety of soldiers. So for their security purpose, many instruments are mounted on them to view their health status as well as weapon's present with them. Bio-sensor systems comprise various types of small physiologicalsensors, transmission modules and processing capabilities, and can thus facilitate low-cost wearable unobtrusive solutions for health monitoring. These devices are being added to soldier's jackets and uniforms so that field commanders can track their soldier's movements in real time.

I. INTRODUCTION

The aim of creating fully integrated combat systems for soldiers. Alongside vast improvements in protective and weaponry subsystems, another major aspect of this technology will be the ability to provide information superiority at the operational edge of military networks by equipping the dismounted soldier with advanced visual, voice, and data communications. Capable of displaying maps and real-time video from other squad members, ranges of physiological sensors monitoring heart rate, core body temperature etc. These devices will improve situational awareness, not only for the host, but also for collocated military personnel who will exchange information using wireless networks. The challenge was to integrate these piecemeal components into a lightweight package that could achieve the desired result without being too bulky and cumbersome or

IMPLEMENTATION OF SMART HELMET FOR ACCIDENT AVOIDANCE

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ABSTRACT

In recent times helmets have been made compulsory in all over the world.Traffic accidents in India have increased year by year. The impact when amotorcyclist involves in a high speed accident without wearing helmet is very dangerous and can cause fatality. Wearing a helmet can reduce shock from the impact and may save a life. There are many countries enforcing a regulation that requires the motorcycle's rider to wear a helmet when riding on their motorcycle.In India drunken drive case is a criminal offence of The Motor Vehicle act 1939.Which states that the bike rider will get punish. In existence bike rider easily get escaped from law. These are the three main issues which motivates us for developing this project. The first step is to identify the helmet is wear or not. If helmet is wear then ignition will start otherwise it will remains off till helmet is not wear. For these we use RF Transmitter/ Receiver. The second step is alcohol detection. Alcohol sensor is use as breath analyzer which detect the presence of alcohol in rider breathe if it is exceeds permissible range ignition cannot start.

I. INTRODUCTION

In recent times helmets have been made compulsory in all over the world. Traffic accidents in India have increased year by year. The impact when a motorcyclist involves in a high speed accident without wearing a helmet is very dangerous and can cause fatality. Wearing a helmet can reduce shock from the impact and may save a life. There are many countries enforcing a regulation that requires the motorcycle's rider to wear a helmet when riding on their motorcycle. In India drunken drive case is a criminal offence of The Motor Vehicle act 1939. Which states that the bike rider will get punish. In existence bike rider easily get escaped from law.

These are the three main issues which motivates us for developing this project. The first step is to identify the helmet is wear or not. If helmet is wear then ignition will start otherwise it will remains off till helmet is not wear. For these we use FSR sensor. The second step is alcohol detection. Alcohol sensor is use as breath analyzer which detect the presence of alcohol in rider breathe if it is exceeds permissible range ignition cannot start. It will send the message to register number. MQ-3 sensor is used for these. When these two conditions are satisfied then ignition will start. The third main issue is accident and late medical help. If the rider met accident with him he cannot receive medical help instantly, its big reason for deaths. Around every second people die due to late medical help or the accident place is unmanned. In fall detection, we place accelerometer at the bike unit.

Experimental Investigation on Reinforced Geopolymer Concrete Slabs

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ABSTRACT

Geopolymer is an ecological binding material alternative to Ordinary Portland Cement (OPC). Concrete made with this Geopolymer has several recompense compared to Ordinary Portland Cement (OPC). Generally, geopolymer concrete is the combination of Fly ash, Ground granulated blast furnace slag (GGBS), alkaline activator solution, fine aggregate and coarse aggregate. Here in this study 100% GGBS is used. GGBS is the consequence of iron and steel manufacturing industry. Alkaline solution is made up of sodium silicate and sodium hydroxide solution (NaOH) with 2.5:1. This study illustrates the experimental investigation on reinforced geopolymer concrete slabs using GGBS. The aspire is to compare the flexural behaviour of geopolymer concrete slab with the straight concrete of grade M40. The slab dimension is taken as 1000 mm × 1000 mm × 60 mm. The dissimilar molarities of NaOH used in this study are 8M, 10M, 12M, 14M and 16M.

Index Terms*: Geopolymer Concrete, , Load V_s Deflection, Molarity, Sodium Hydroxide, Sodium Silicate.*

I. INTRODUCTION

Concrete is the major creation material used all over the world. The only compulsory material used in production of the concrete is Ordinary Portland Cement (OPC). The making of cement leads to many environmental effects due to the emission of a large amount of carbon dioxide (CO_2) throughout the manufacturing process. It is estimated that 1 ton of cement produces nearly 1 ton of CO_2 into the environment. It is compulsory to develop an alternate binder for the concrete to reduce the effect of CO_2 from the cement industry for a sustainable surroundings. Geopolymer is an unusual binding material to Ordinary Portland Cement. The electrical force demand is increasing day by day due to the increase of urbanization. To full fill these energy need, the electrical energy manufacture is also increased. Due to the increase in production of electrical energy, the manufacture of fly ash will also increase. The disposal of this fly ash is the major problem to the environment. On the other hand, the usage of steel also increases for construction of industries. Ground granulated blast furnace slag (GGBS) is the waste material produced in iron industry. By using these two wastes in concrete will decrease the assembly cost and safe disposal. Construction industry is in performance a major role in Indian economyIn 1978 " Davidovits " of France 1st introduced the term geopolymer to the world. Geopolymer concrete is produced by mixing Ground granulated blast furnace slag (GGBS), fly ash, coarse aggregate, fine aggregate, and alkali activator solution. Alkali activator solution is the combination of sodium silicate (Na_2Sio_3) and sodium hydroxide (NaOH). The chemical reaction which takes

PROBING OF ECOBRICKS FROM INDUSTRIAL WASTE USING "ALKALI ACTIVATION TECHNOLOGY"

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ABSTRACT

This research incorporates waste boiler ash into masonry construction materials using alkali activation. Utilization of industrial waste Boiler ash is derived from paper mills. The process of Eco bricks is mixing with clay, lime, Boiler ash and NaOH and then dried with oven and direct sun light is termed as Alkali Activation Method. It reduces the CO2 emission and serious hazards to human health. A brick formulation is boiler ash, clay, lime and NaoH to produces bricks. An economic and environmental analysis indicates that these bricks can be produced for similar cost as clay brick with reduced environmental impact making them a viable alternative in the market.

INTRODUCTION

House is a basic need, Owning a house is a problem for majority of people in India due to expenses cost of construction.To Address this situation attention has been focused on low cost alternative buildings.In India,Fired clay bricks are being used extensively and it consumes about 20,000million bricks and 27% of total natural energy consumption for their production.So that we have to use alkali activation technology to reducing serious hazards to both environment and human health.

MIX PROPORTION

GENERAL

The manufacturing of clay brick is done by manual and mechanical, processes like mixing, casting is also manual and mechanical work. The composition of proportion of materials in each brick is depends on weight of than brick. Each brick having 4000gm materials required.

The approximately, the weight of one wet brick is 4 kg.

MOULDS

Moulds are prepared as modular brick size of 215mm x 100mm x70mm.

For the purpose of comparison of brick test results into codes.

STUDIES ON STRENGTH OF GEO-POLYMER CONCRETE BY USING FLYASH AND GRANITE WASTE

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ABSTRACT:

The major problem the world is facing today is the environmental pollution In the construction industry mainly the production of Portland cement will causes the emission of pollutants results in environmental pollution. We can reduce the pollution effect on environment, by increasing the usage of industrial by-products in our construction industry. Geopolymer concrete is such a one and in the present study, to produce the geo-polymer concrete the Portland cement is fully replaced with fly ash and the fine aggregate is replaced with granite dust and alkaline liquids are used for the binding of materials. The binder is the only difference to the ordinary Portland cement concrete. To activate the Silicon and Aluminium content in fly ash, a combination of sodium hydroxide solution and sodium silicate solution was used. Hence concrete with no Portland cement. The alkaline liquids used in this study for the polymerization are the solutions of Sodium hydroxide (NaOH) and sodium silicate (Na_2Sio_3). Different molarities of sodium hydroxide solution i.e. 8M, 12M and 14M are taken to prepare different mixes.

And the compressive strength is calculated for each of the mix. The Geopolymer concrete specimens are tested for their compressive strength at the age of 7 days, mixes of varying sodium hydroxide molarities i.e.8M,12M and 14M are prepared and they are cured by direct sun-light and strengths are calculated for 7 days.

Keywords: Geo polymer concrete ,Fly ash,NaOH,Na_2Sio_3,Curing

I. INTRODUCTION

The main ingredient to produce concrete is Portland cement. On the other side global warming and environmental pollution are the biggest menace to the human race on this planet today. The production of cement means the production of pollution because of the emission of CO_2 during its production. The cement industry contributes about 5% of total global carbon dioxide emissions. And also, the cement is manufactured by using the raw materials such as lime stone, clay and other minerals. Granite of these raw materials is also causes environmental degradation. To produce 1 ton of cement, about 1.6 tons of raw materials are required and the time taken to form the lime stone is much longer than the rate at which humans use it. But the demand of concrete is increasing day by day for its ease of preparing and fabricating in all sorts of convenient shapes. So to overcome this problem, the concrete to be used should be environmental friendly.

AN EXPERIMENTAL STUDY ON FIBER CONCRETE USING COCOUNT COIR

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ABSTRACT

Investigations to overcome the brittle response and limiting post-yield energy absorption of concrete led to the development of fiber reinforced concrete using discrete fiber within the concrete mass. Out of the commonly used fiber, easily available low cost natural fiber is renewable source materials. Though these fiber are ecologically advantageous. Utilizing coconut coir in concrete production not only solves the problem of disposing this solid waste but also helps conserve natural resources.

The major quantity of wastes generated from agricultural sources are sugarcane molasses, paddy, wheat straw husk, vegetables wastes, food products, tea, oil production, jute fiber, groundnut shell, wooden mill waste, coconut husk, cotton stalks etc. The new and alternative building construction materials developed using agro-industrial wastes have ample scope for introducing new building components that will reduce to an extent the costs of building materials. One such alternative is coconut coir which is a form of agricultural solid wastes. It is one of the most promising agro wastes with its possible uses as pond ash in the production of concrete

This project presents adding and coir fibers to the percentage of 0.5, 1.0, 1.5, 2.0,% to the weight of the concrete. Physical and chemical properties of and coir fibers have been studied. A concrete mix has been designed to achieve the grade of M30 as required by IS 10262-2009. In the phase two contains to determine the Compressive Strength, Split Tensile Strength and Flexural Strength of the concrete at 7, 14 and 28 days.

Keywords: Concrete, Coir Fiber, Compressive Strength, Split Tensile Strength, Flexural Strength

INTRODUCTION

Fiber reinforced concrete (FRC)   is concrete containing fibrous material which increases its structural integrity. It contains short discrete fibers that are uniformly distributed and randomly oriented. Fibers include fibers, glass fibers, synthetic fibers and natural fibers. Within these different fibers that character of fiber reinforced concrete changes with varying concretes, fiber materials, geometries, distribution, orientation and densities.

Fiber reinforced concrete with mono fiber system provides limited enhancement of properties. Therefore for improved performance combining two different fibers at suitable proportion in concrete can offer more attractive engineering properties because the presence of one fiber enables the more efficient utilization of the potential properties of other fiber.

INCORPORATION OF GRANITE AND MARBLE POWDER WASTE IN FLY ASH BRICKS

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ABSTRACT

Building industries are the support for infrastructure development in India. The various By-products produced from industries grounds pollution in India. It has a major effect in the healthier environment of the Nation. The combinations of fly ash bricks have a mixture of percentage of the fly ash, granite and marble powder. In India thermal power plants and granite production are generating fly ash and granite dust in huge quantities. Industrial waste are destructive in nature, their disposal is of major concern. Recycling such wastes by exploiting them into building materials is a moderate resolution for the pollution problems. The search was carried out by various mix ratios using the laboratory test likes compression test, water absorption test. For strength characteristics, the results exposed that a frequently increase in compression strength, water absorption values in blocks was good while comparing the features compressive strength of bricks. The ceramic powder is mixed as bricks 5%, 10% and 15% of each mix proportions. To find materials properties, Water Absorption Test, Efflorescence Test, Soundness Test, Structure Test, Size and Shape Test, Density Test, Structural Strength were noted the ranges value of the specimen to compare the optimum dosage of ceramic powder.

Keywords: Fly Ash, Granite Powder, Marble Powder, Water absorption, Compressive strength, Density, Efflorescence, Soundness, Shape and Size, Hardness, Colour, Structure

1. INTRODUCTION

Demand for the construction materials is growing day to day in housing sectors in both rural and urban areas. The reduction in the sources of sand and the need to decrease the cost of construction projects has resulted in the increase need to classify different construction materials to sand as fine aggregates in the construction projects.

Bricks are one of the conventional materials used in centuries. In world, Asia produced nearby 87% of bricks. India and china are the major patrons of bricks, so an alternative and eco friendly materials to overcome the problem.

Marble and Granite powder is a by- product from the crushing process. It is estimated that 20% of ceramic powder in an issue of disposal and this creates environmental issues and landfill problems. It is good alternative during construction projects. In this project, the properties and features of ceramic powdered are studied.

AN EXPERIMENTAL INVESTIGATION ON FLY ASH BRICK WITH COCOUNT COIR

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ABSTRACT

The use of brick masonry is common in our country. The important material for construction of infill walls and load bearing walls are Clay bricks, Fly ash bricks, Hollow blocks and the dividing of rooms is made possible by steel sheets, wooden pieces and glasses.

This investigation is carried out by materials like fly ash, coir fibre, and quarry dust for manufacturing of bricks. The fly ash class 'F' is used for manufacturing of bricks. The fly ash is the waste product from thermal power plants and it disposed in huge volumes. But it can be used as a resource material for manufacturing of bricks. In agricultural field waste materials are generated. Especially fibres having good mechanical properties, coir fibre and banana fibre and jute fibre are examples.

This investigation deals with manufacturing of bricks using fly ash and coir fibre as a resource materials from waste and cement as a binding material, and adding coir fibre of 0.4%, 0.8%, 1.2%, 1.6%.After the specimen preparation, compressive strength test, water absorption test, shape and size test, hardness test, soundness test, color test, efflorescence test, structure test are conducted. We conclude that the brick with 1.6% of addition of coir fibre have 4.11 N/mm^2 of compressive strength. The maximum cost per brick Rs. 3.36.It is economical when compared to conventional bricks available in market.

Keywords*: Bricks, Fly ash, Coir Fibre, Compressive Strength, Cement.*

INTRODUCTION

In the present scenario an alternate for clay bricks is fly ash bricks which plays key role in the construction of framed structures because of its less weight which will reduce the dead weight of the structures, another advantage is low cost. Such fly ash bricks are not subjected to load bearing structures because of its slight reduction in compressive strength compare with nominal clay bricks. So majority of the fly ash bricks were used in framed structure construction. In this study a concern to increase compressive strength using coconut fibre is carried out. A comparison has been carried out for the normal brick to fibre reinforced bricks. From the comparison the test result has shown a significant change in the compressive strength by the addition of coir fibre and the test result show significant changes in water absorption quality and other properties of fly ash bricks.

UTILIZATION OF DEMOLISHED CONCRETE WASTE AS PARTIAL REPLACEMENT OF COARSE AGGREGATE IN CONCRETE

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ABSTRACT

Concrete waste is generated whenever any demolition activities take place. Recycling concrete waste as recycled aggregate is one of the methods adopted to reduce environmental impact. When the useful life of the structure is over it will be demolished and all the demolished wastes just find their way to landfills. Finding large areas for landfills is becoming very difficult. On the other hand continuous extraction and quarrying of natural aggregates for construction is causing depletion of natural resources. There cycling of demolished construction waste in to aggregates to be used in new engineering application provides a promising solution to both the problems. In this work the usability of demolished waste as coarse aggregates in new concrete is attempted. This experimental investigation involves evaluating the properties of the constituents of concrete including the demolished concrete wastes as coarse aggregate replacing by 0%, 10%, 20% and 30% in new concrete. The results of this experimental study is aimed at examining the properties and strength of recycled aggregate concrete made from different replacement ratios of recycled aggregates from natural aggregates.

Keywords: Recycled aggregate concrete, Natural concrete aggregate, Super plasticizer Conplast SP 430

1. INTRODUCTION

Construction and demolition wastes constitute one of the major components of wastes generated worldwide. Very large quantities of aggregates are used in concrete production and in construction. When the useful life of the structure is over it will be demolished and all the demolished wastes just find their way to landfills. Finding large areas for landfills is becoming very difficult. On the other hand continuous extraction and quarrying of natural aggregates for construction is causing depletion of natural resources. The recycling of demolished construction waste in to aggregates to be used in new engineering application provides a promising solution to both the problems. In this work the usability of demolished waste as coarse aggregates in new concrete is attempted. This experimental investigation involves evaluating the properties of the constituents of concrete including the demolished concrete wastes which shall be used as coarse aggregates in new concrete with the aim of producing high strength concrete. The results of this experimental study is aimed at examining the properties and strength of recycled aggregate concrete made from different replacement ratios of recycled aggregates from

STUDY ON FLEXURAL BEHAVIOUR OF POLYMERMODIFIED FERROCEMENT BEAM ELEMENTS

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ABSTRACT

Ferrocement is widely used for thin wall structures because of the uniform distribution and dispersion of reinforcement which provides better cracking resistance, higher tensile strength to weight ratio, ductility and impact resistance. However, it forms minor cracks under small loads and so has a problem with durability, since cement mortar has conventionally been used as matrix for the ferrocement. Therefore, to improve the flexural behaviour and durability of ferrocement, specimens were made with modified mortars. The main objective of this paper is to study the Flexural strength for Modified ferrocement beam elements. The addition of admixtures in ferrocement improves its Flexural behaviour and Durability.

Key Words:Ferrocement, Durability, Flexural behaviour, cracking resistance, modified mortars.

1.INTRODUCTION

Ferrocement is a super reinforced concrete. It different from conventional concrete in that there is a higher ratio of steel to cement mortar by altering the cement/steel ratio. Ferrocement has many of the properties of steel and yet it will not rust. Mortar provides the mass and wire mesh imparts tensile strength and ductility. Compared to durability of a structure is its resistance to weathering action, abrasion, chemical attack, cracking or any other process of destruction . Corrosion of reinforcement is one of the major reasons for deterioration of ferrocement. The corrosion of reinforcement mainly depends upon the permeability of the cement mortar. So by proper selection of chemical, water cement ratio of mortar can be reduced. It has found itself in numerous applications both in the construction of new structures and repair/rehabilitation of existing structures. Therefore the authors have conducted this investigation to improve the flexural magnitude than that of conventional reinforced concrete.

Experimental Investigation of Concrete Filled PVC Tube Columns Confined By Plain PVC Socket

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ABSTRACT

This paper presents results of an experimental study for concrete column filled poly vinyl chloride (PVC) tubes confined by plain socket with 5.8 & 6.8 mm thicknesses, 102 mm diameter and 100 mm depth. The total of five concrete filled columns using PVC tubes (CFT PVC) was tested to investigate the columns' behaviour. The column is 700 mm height, 100 mm external diameter and 3.5 mm tube thickness with different thickness of plain socket. The results presented include maximum axial load, plain socket confinement effect, the mode of failure, and lateral PVC strain. The axial load enhancement of PVC-concrete columns confined using plain socket shows an increment of 21.3% up to 55.2% and axial strain from 21% to 40% compared with displacement for control composite columns at 192 kN ultimate load.

1 INTRODUCTION

In building construction, the merits of a structure are based on factors such as availability, structural strength, durability, and workability. The properties of the structure materials may differ from each other and there is no single material that can fulfill all structural requirements which resulted in the application of composite structures. Composite columns, particularly composite concrete filled steel tube (CFST) columns, are increasingly used for high-rise building structures, owing to the advantage of combined characteristics of the steel and concrete materials.

PVC has advantages such as low cost, lightweight and is easy to handle and install. It is not affected by corrosion or other forms of degradation; therefore, it is used as an alternative to the metal in many applications where corrosion can compromise functionality and increase maintenance cost. However, the study of concrete-filled PVC tube (CF-PVCT) composite columns are limited even though its advantages are many. The PVC tube does not only protect the core concrete from the corrosion of the atrocious environment, but it is the cheapest material and locally available in abundance. The development of the CFT column using this material could be an achievement for the local construction industries.

Steel and concrete are the common materials used in the composite CFT columns. The CFT columns are known due to their superior of strength with the ability to withstand the load imposed during the event of Kobe earthquake when their ability accidently encountered. The CFT columns have many constructional advantages, such as high energy absorption, economical formwork and high ductility. These advantages are contributed by the effectively confined concrete core; thus, the realistic prediction of the capacity of these columns must consider the confinement effect provided by the steel tube.

Investigation on Improving Compressive Strength of Pervious Concrete

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ABSTRACT

Pervious concrete which is additionally referred to as the no-fines, porous, gap-graded, and permeable concrete and Enhance porosity concrete have been found to be a reliable storm water management tool. There is lot of research work goes within the field of pervious concrete. The compressive strength of pervious concrete is a smaller amount in comparison to the traditional concrete thanks to its porosity and voids. Typically pervious concrete has water to cementitious material ratio of 0.28 to 0.45. The mixture is composed of cementitious materials, coarse aggregates and water with little to no fine aggregates. The main theme of our project is to improve the strength characteristics of M40 grade of pervious concrete. But it are often noted that with increase in strength, the permeability of pervious concrete are going to be reduced. Hence, the development of strength should not affect the permeability property because it is the property which serves it purpose

Keywords: Pervious concrete, Permeability, High strength, Pavements

I. INTRODUCTION

Pervious concrete was first utilized in the 1800s in Europe as pavement surfacing and cargo bearing walls. Cost efficiency was the main motive because decreased amount of cement. It became popular within the 1920s for 2 storey homes in Scotland and England. It became increasingly viable in Europe after WWII mainly due to the scarcity of cement. It didn't become as popular within the US until the 1970s. In India it became popular in 2000.

No Fine concrete could also be a surprising kind of concrete with a high porosity used for concrete flatwork applications that allows water from precipitation and other sources to leave behind in a straight line through, thereby reducing the runoff from a site and allowing groundwater recharge. Pervious concrete is formed using large aggregates with little to no or some amount of fine aggregates. It is a crucial application for sustainable construction and is one among many low impact development techniques employed by builders to guard water quality. The strength of pervious concrete is low when compared to conventional concrete due to absence of fine aggregate.

II. SCOPE OF THE PROJECT

- Scope of this project is to use pervious concrete in pavements, animal stalls and also in green buildings.
- To carry out the investigation of increasing compressive strength of pervious concrete by the addition of fine aggregates in the small quantities of total coarse aggregates and replacement of cementitious materials

DEVELOPMENT AND EXPERIMENTAL STUDIES OF PAPERCRETE WALL PANELS

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ABSTRACT

Papercrete is kind of fibrous cement, made by shredding paper (old newspapers, prints, cardboards etc.) into pulp in water and adding Portland cement to it and in some cases sandy soil to be used as a additive. It gains its inherent strength due to presence of hydrogen bonds in microstructure of paper. This thick mix can then be poured into molds and cast like concrete, to make it into any desired shape and size Papererete is a sustainable building material due to reduced amount of cement usage and recycled paper being put to good use. It has numerous advantages in construction industry, namely low carbon footprint, recycled material usage, low embodied energy, high strength to weight ratio, high thermal insulation, high sound absorption, aesthetic and cost effective. Much research is being carried out globally on the material but it is yet to be acknowledged by Indian standard practices and codes and recognized by major building material organizations in India. This paper is used to study the properties of papercrete wall panels. It is also used for studying mechanical properties and construction technology associated with papercrete wall panels.

Keywords: **Papercrete,Recycled,Building material.**

I. INTRODUCTION

Papercrete is a construction material which consists of re-pulped paper fibre with Portland cement or clay and/or other soil added. Papercrete gets its name from the fact that most formulas use a mixture of water and cement with cellulose fibre. The fibre is usually acquired from recycled newspaper, lottery tickets and phone books.

Waste paper for construction not only has the potential of waste paper recycling but it will also reduce the waste deposit.

In construction industries, the usage of concrete increase as the demand for the production of cement is also increases and leads to releases of large quantity of greenhouse -Co2 into the atmosphere.

According to the consumption of cement in world, the requirement of Portland cement is currently exceeding 2.6 billion tons per year. Also one ton of production of cement emits the 0.8 ton of greenhouse gas of Co2 in atmosphere. So, by replacing Portland cement by Eco-Friendly Materials like Fly Ash and paper pulp. emission of large amount of Greenhouse Gases can be reduced.

Effectiveness of Vibration Control System as Tuned Liquid Dampers on High Rise Buildings

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ABSTRACT

The need to build flexible and slender buildings, that have relatively low damping properties has attracted engineers attention to look for efficient and economical techniques to control the vibrational response of structures. Recently, Tuned Liquid Dampers (TLD) has increased in popularity due to its low installation and maintenance costs. TLD is a passive damping device that consists of rigid tanks filled with liquid to suppress the horizontal vibration of structures. The tank is designed so that the liquid surface wave has frequency tuned to the fundamental frequency of the building. The main objective of this work was to propose TLD tanks for a 40 storeyed building in Kerala. The structure was first modelled and then its fundamental natural frequency was found out by carrying out free vibration analysis. TLD is then modelled into the structure and changes in natural frequencies were monitored. The structure was subjected to an earthquake loading (El-Centro Earthquake) and its frequency response was compared without TLD's and with TLD's. The optimum mass ratio was obtained at 0.8 % and corresponding reduction in displacement was found to be 28.73 %. Based on the optimum mass ratio obtained, number of TLD tanks, its dimensions and required water depth for the structure to control vibrations was proposed.

Keywords—Tuned Liquid Dampers; Eigen Value Analysis; Fluid Structure Interaction; Response Spectrum Analysis;

I. INTRODUCTION

Nowadays, there is an increasing trend to construct tall structures, to minimise the increasing space problems in urban areas. These structures are often comparatively light and flexible, possessing low damping, which make them more vibration prone. Thus to ensure functional performance of tall buildings, against wind and earthquake forces, it is important to keep the frequency of structural motion below threshold. The various techniques to achieve this can be classified broadly into 2 categories i.e. Active Damping Techniques and Passive Damping Techniques. Active dampers use a power source to create an additional force between the damper and the structure. This type of supplying energy to the system is also known as negative damping. Passive damping refers to energy dissipation within the structure. The force that is exerted on a building due to external loads is channeled through the passive system and is dissipated through the damping device. The advantage is that there is no power source required in the operation of the system and so is environmental friendly. The best example is the addition of an auxiliary mass system to increase the level of damping (Eg.

Investigation of Beam with Partial Replacement of Press mud

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ABSTRACT

Durability of concrete and economy has made it the world's most used construction material. It is basically consists of four components: cement, water, aggregates and admixture. Due to development of infrastructure, necessity of producing large quantities of cement is required and usage of natural resources is required. Initiatives are emerging worldwide to strike a balance between the developments in infrastructure and prevention of the environment from contamination by reusing the industrial wastes. Thus, requirements for more economical and environmental-friendly cementing materials have extended interest in partial replacement of cement in infrastructure development. In this research work, M25 grade of concrete beam with partial replacement of cement by sugarcane bagasse ash at 5%, 10% and 15% specimens were casted and tested for flexural behaviour at28 days.

Keywords-sugarcane bagasse ash, flexural strength, Reinforced cement concrete,

I. INTRODUCTION:

Cement is the binder material used in the concrete to bind fine aggregate and coarse aggregate together to act them as homogeneous material. This is done because of its pozzalonic property. The materials which has pozzolonic property may be used as replacing material for cement. The material shouldnot be replaced fully but it can be done by partially. The waste industrial byproducts such as fly ash, blast furnace slag, silica fume and sugarcane bagasse has this pozzalonic property and so the above waste materials should be used in concrete as replacing material for cement. In this proposed project we focused on to find the optimum percentage of addition of sugarcane bagasse ash in reinforced cement concrete. The addition of this SBA should not affect the workability, setting time, strength and durability of concrete. The standard fabricated steel mould are used to caste the beams of size 1000mm x 150mm x 100mm of length, breadth and depth respectively. Four NOS of beams are casted at varying percentage of SBA by 0%, 5%, 10% and15%. A linear compaction should be done during the time of casting to ensure the density of concrete. The reinforcement used is Fe415 grade and thermo mechanically treated bars. The beams are cured for 28days in order to obtain the maximum flexural strength.

II. MATERIALS USED IN CONCRETE:

Reinforced cement concrete is made up of cement, fine aggregate, coarse aggregate, water and reinforcement