7th INTERNATIONAL CONFERENCE ON EMERGING TRENDS IN ENGINEERING AND TECHNOLOGY

ICETET'20

13th & 14th March 2020

Organized by

PANDIAN SARASWATHI YADAV ENGINEERING COLLEGE

Arasanoor, Madurai – Sivagangai Highway,

Tamil Nadu – 630 561.

INDIA

Book Title : **Emerging Trends in Engineering and Technology**

Copy Right : @ Pandian Saraswathi Yadav Engineering College

First Edition : 2020

Book Size : A4

Paper : NS

Published by

Forschung Publications
Mogappair. Chennai
Mobile: 9626166683.
e-mail : forschungpublications@gmail.com

ISBN Supported by International ISBN Agency,
United House, North Road, London, N7 9DP, UK. Tel. + 44 207 503 6418 &
Raja Ram Mohan Roy National Agency for ISBN
Government of India, Ministry of Human Resource Development,
Department of Higher Education, New Delhi – 110066 (India)

ISBN: 978-93-87865-31-0

ISBN 938786531–2

9 789387 865310

PREFACE

The Seventh International Conference on Emerging Trends in Engineering and Technology [ICETET'20] was conducted on 13th and 14th March 2020. The ICETET'20 was sponsored by Pandian Saraswathi Yadav Engineering College.

Pandian Saraswathi Yadav Engineering College was established in September 2000, by "Hind Rattan" Mr. Malaysia S. Pandian, M.L.A. with the sole aim of rendering quality technical education to economically weaker and down-trodden students. This college is located predominantly in a rural area on the State Highway (SH-33) connecting Madurai and Thondi. It is situated 25km from Madurai (towards Thondi) and 15km from Sivagangai (towards Madurai).

The college offers five UG Programmes and Five PG Programmes. The infrastructural and instructional facilities are created as per AICTE (All India Council for Technical Education), New Delhi and Anna University, Chennai norms with state of the art equipments and highly qualified and motivated faculty members.

The aim of this conference is to bring together the most distinguished scientists, research scholars, academicians and PG scholars to discuss the latest technological developments as well as further directions in the field of Civil, Mechanical, Electrical and Information and Communication Engineering.

We would like to express our sincere thanks to our beloved chairman, "Hind Rattan" Mr. Malaysia S. Pandian, M.L.A. for providing us all the support for the conduct of this conference. We also express our sincere gratitude to Mr.S.P.Saravanan and Er.S.P.Varadharajan, Managing Directors, PSY Group of institutions and companies for their support towards the conference, we gratefully acknowledge Dr.R.Palanichamy, Principal for having shared his decades of experience in configuring this conference.

We sincerely thank Dr. S. Nagarajan, Convener, ICETET'20, Vice Principal & Professor in Mechanical Engineering department for his suggestion in making this conference a grand success. We express our thanks to all the technical and advisory committee members for their cordial relation during various process of the conference.

Organizing Committee

ICETET'20

About the College

Pandian Saraswathi Yadav Engineering College [PSYEC] was established in the year 2000 by a NRI entrepreneur ""Hind Rattan" Mr. Malaysia S. Pandian, M.L.A. the Chairman of PSYEC, with vision to educate more rural students in the field of engineering and technology in order to pave the way for industrial prosperity and socio-economic development of our country. PSYEC is located on Madurai – Sivagangai National Highway, 27km from Madurai. The campus is spread over 70 acres of land with 2.5 Lakhs sq.ft of build up area in a serene atmosphere, free from pollution and it is highly conductive for studies. PSYEC is a 20 years old, ISO 9001:2008 certified Institution. The courses offered in PSYEC are approved by AICTE, New Delhi and affiliated to Anna University, Chennai. PSYEC offers 5 UG and 5 PG programmes in Engineering and Technology.

About the Departments

Initially the department of CSE, ECE and EEE was started in the year 2000. The department of IT was started in the year 2001. The department of Mechanical Engineering was started in the year 2006 and the department of Civil Engineering was started in the year 2007. All these departments have well qualified and highly experienced faculty members with Ph.D. degrees. PSYEC has signed MOU with many corporate and conducts training and certification Programmes and also campus drives for the placement. PSYEC a member of ICT Academy of the Tamil Nadu Government conducts authorized seminars and workshops to our faculty members. Also, PSYEC is a member of CII, which organizes many of the guest lecturers from various industries and corporate and motivates the students to become entrepreneurs. Our college is having active Innovation, Incubation and Entrepreneurship cell which is approved by IIC, MHRD and MSME, Government of India. Many students are active members of associations like IEEE, ISTE, IETE, CSI etc. Faculty members of all these departments are actively involved in research in various engineering disciplines and Technologies.

KEYNOTE ADDRESS

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Robotics & Industrial Automation (RIA) Research Group,
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Multi-Robot Systems & Swarm Robotics: Trends & Challenges

Abstract

The intensification of research in the field of Artificial Intelligence (AI) in this era of the Fourth Industrial Revolution is astounding. One key criteria that is common in the exponential growth of technology advancement is the intertwining nature of rapid technology changes, especially which involves AI and Robotics. One such area is the Multi-Robot Systems (MRS) or Swarm Robotic Systems (SRS) area which involves multiple robots, either homogeneous or heterogeneous, that are either cooperating or competing with each other.Multiple autonomous vehicles can be seen as forming a System of (Multi-Robots) Systems too. In general, in MRS the robots can be expensive and/or big in size, while SRS is a sub-area of MRS, involving low-cost and usually small-sized robots. From a Computer Science (CS) perspective, how does one approach the multi-disciplinary area of robotics? There is a research area in CS known as Multi-Agent Systems (MAS), which is an overlapping sub-area of AI.Although it usually does not involve the physical world, but research in this area is crucial in developing MRS/SRS further.There are several reasons why systems consisting of group of robots/agents are of interest. The tasks may be inherently too complex (or impossible) for a single agent, or building and using several simple agents can be easier, cheaper, more flexible and more fault-tolerant. Such idea would be highly usefulto be implemented in many situations, e.g. a team of Search and Rescue (SAR) robots for disaster scenario.Current trends in MRS/SRS research are explored, such as social multi-robots, robot swarms control, and cloud-connected robot swarms. Emerging & long-standing challenges in MRS/SRS research are analyzed, such as controlling interactions between multiple (unique) humans with multiple (heterogeneous) robots, how to define or measure cooperation, etc. Ethical considerations and society's acceptance of MRS/SRS are highlighted.MRS, SRS, and MAS are interesting fields of study, and are gaining much attention & interests worldwide.

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DEPARTMENT

OF

CIVIL ENGINEERING

ICCE101: FUEL FROM WASTE PLASTIC THROUGH CATALYTIC CRACKING USING NATURAL ZEOLITE

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Abstract: Development and modernization have brought about a huge increase in the production of all kinds of plastic commodities, which directly generate waste due to their wide range of application. Also the demand of plastics is ever increasing and has produced huge amount of plastics waste. So, idea of waste to energy recovery is one of the promising techniques used for managing the plastic wastes. Plastics waste can be utilize for producing a fuel by the process called pyrolysis. This work consists of converting the plastics into fuel by thermo catalytic cracking by using the catalyst, natural Zeolite. The resulting gases were condensed to recover liquid fuels. The various properties of the products obtained were then tested & compared with the actual values for petroleum range products. FTIR analysis is done for identifying the functional groups present in the pyrolysis oil. The results show the presence of almost all functional groups that are present in the conventional diesel oil. Moreover pyrolysis oil more demanded in the industry due to its low cost. Further treatment of pyrolysis oil can definitely yield different petroleum products.

Keywords: Plastic, Cracking, Zeolite, FTIR

ICCE107: EXPERIMENTAL STUDY ON STABILIZATION OF BLACK COTTON SOIL USING DEMOLISED BRICK WASTE

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Abstract: Soil stabilization is the alteration of the property to improve the strength. Soil can be stabilized by mechanical, chemical, electrical or thermal means. The present study describes the effect of adding different percentage of demolished brick waste in the stabilization of Black Cotton soil. The effect of the demolished brick waste with Black Cotton soilis to be investigated by Atterberg's limits, Compaction tests, Unconfined compressive strength tests and California Bearing Ratio test. The demolished brick waste of different percentage 5%, 10% and 15% is to be mixed with soil and compacted at optimum water content and maximum dry density. Then with the results obtained, the effect of plasticity index and unconfined Compressive strength, CBR value and the optimum percentage of demolished brick waste is to be determined.

Keywords: Cotton Soil, Demolished Brick Waste

ICCE102: ANALYTICAL AND EXPERIMENTAL STUDY ON BLACK COTTON SOIL BY USING GEOTEXTILE AS REINFORCED ROAD AGGREGATE

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Abstract: The Economical development of a country is closely related to its road transport infrastructure facilities available. When these types of roads with soft foundation soils are constructed, there is the possibility for large deformations to occur, which increases maintenance cost and lead to interruption of traffic service. Black cotton soil show high volume change behaviour with change in water content leading to failure of structures constructed over it. Pavement constructed over such soil shows heavy settlement and cracks. The costly sub base and base aggregates intrude into subgrade due to heavy wheel load and during compaction process it leads to loss of aggregates. The fine soil particles may enter the voids of base aggregates, thereby ruining its drainage capability. In order to overcome these problems soil stabilization has to be adopted. Geotextiles utilization plays an important role in the construction of highways with no additive layers, such as asphalt concrete or cement concrete, or in a subgrade layer which affects the bearing capacity of unbounded layers. This laboratory experimental study is to be carried out to evaluate changes in the load bearing capacity of reinforced soil with these materials in highway roadbed with regard to geotextile properties. In the present work an attempt has been made to study the effect of using woven polyester geotextile in strength improvement of poor subgrade soil. This project involves the application of geotextiles to reinforce the soil for the Stabilization of soil. California Bearing Ratio (CBR) and Compaction tests are conducted without geotextile and by placing geotextile.

Keywords: Black Cotton Soil, Geotextile.

ICCE103: A GEOTECHNICAL CHARACTERISTIC OF STABILIZED BLACK COTTON SOIL BY USING STONE DUST

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Abstract: Black cotton soil causes lot of civil engineering structural damages. Due to the presence of clay minerals it possesses the property of swelling and shrinkage. Soil is a natural resource and it is widely available on the land and in civil engineering structures have to be carried out on weak or less bearing soils. Owing such soil poor shear strength and high swelling and enlargement, a great diversity of ground modification techniques such as soil stabilization and reinforcement are employed to improve mechanical behaviour of soils. This present study carried out with intension to evaluate the effects of stone dust on the geotechnical properties of the locally available expansive soil from Madurai city. Tests which are to be carried out on the sample dispense with specific gravity, compaction, differential free swell, consolidation tests. These tests are to be conducted by adding 5%, 10%, 15% of stone dust. Stone dust is a kind of solid waste material that is generated from stone crushing industry which is abundantly available. It is estimated that each crusher unit produce 15%-20% stone dust. Disposal of such wastes poses lots of geo environmental problems such as landfill disposal problems, health and environmental hazards. The best way to eliminate these problems is to make use such waste. Keeping this in view an experimental study was conducted on locally available soil by mixing it with Stone Dust. The effect of randomly distributed Stone Dust on MDD, OMC, Specific gravity has been discussed.

Keywords: Black Cotton Soil, Stone Dust.

ICCE104: AN UTILISATION OF COPPER SLAG IN HIGHWAY CONSTRUCTION

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Abstract: Due to our booming infrastructure development many waste materials are generated. Traditional materials like fly ash, plastic waste, marble chips etc. are used in highway construction. Copper slag which is produced during the smelting process of copper contains materials like iron, alumina, calcium oxide, silica, etc. For every tone of metal production about 2.2 tone of slag is generated. Total generation of copper slag is about 24.6 million tone throughout the world. Disposal of these huge quantities of slag causes environmental problems. The utilization of such waste materials in road construction is of significant importance. During past decades attempts have been made by several investigators all over the world to explore the possible utilization of copper slag. This paper discusses the physical, chemical and geotechnical properties of copper slag. Copper slag has also been mixed with black cotton soil in different proportions and the different geotechnical properties have been investigated. Copper slag and black cotton soil used in sub grade layer of the flexible pavement. Improvement of bearing capacity of Black Cotton Soil on addition of copper slag. On the basis of this research study copper slag can be recommended as an effective stabilizing agent for the improvement of soils for highway embankments and sub grade layers in flexible pavement.10%, 15% 20% and, 25% of copper slag mixed with black cotton soils were characterized by the following tests are Liquid limits, Plastic limits Specific gravity, swell index, CBR test, unconfined compressive test and direct shear test. By utilizing this mix we can avoid the problems of swelling and shrinkage of expansive soil. This can prove to be an economically viable and alternative solution for road construction.

Keywords: Copper Slag, Highway Construction.

ICCE105: STUDY ON CONSTRUCTION OF EMBANKMENT ON SOFT CLAY SOIL USING STONE COLUMN AND GEO-CELL LAYER

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Abstract: A very fast development of Infrastructures sector i.e. construction of mega structures like Express highways , railways ,tunnels, bridges and tall buildings in all parts of the world, the availability of suitable ground for the construction of civil engineering becomes a challenge for today's geotechnical engineers. There is various ground improvement techniques are present to strengthen the weak and soft soils based on the type of application. One of the most extremely used ground improvement method is a Stone column technique for soft clay soils. Where the bearing capacity of soft soils can be improved and also the stability of structure and reduces the settlement issues up to some permissible limits. This method was adopted in European countries since 1950s. The stone column method is quick to construct and can be done at any time of the year. Stone columns are extensively used to improve the bearing capacity of poor ground and reduce the settlement of structures built on them. A stone column is one of the soil stabilization methods that is used to increase strength, decrease the compressibility of soft and loose fine graded soils, accelerate a consolidation effect and reduce the liquefaction potential of soils. Ultimate bearing capacity increases with inclusion of reinforcement. In case of geo-cell as reinforcement it reduces with settlement. The results may be used for prediction of ultimate bearing capacity and also improvement of shear strength .The paper explores the new ideas where more research can be done by using geo-cell as reinforced stone column technique to improve the bearing capacity and stiffness of soft clay soils and reduce the settlement. The study mainly deals with the stabilization of soft soil by stone column and geo-cell layer and the index properties of virgin soil and stabilized soil are also be determined.

Keywords: Soft Clay Soil, Stone Column, Geo-Cell Layer.

ICCE106: AN EXPERIMENTAL STUDY ON STRENGTH AND COMPRESSIBILITY RESPONSE OF PLASTIC FIBER REINFORCED SOIL

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Abstract: Rapid growth in industrialization and urbanization leads to an increasing scarcity of lands which is intending to utilize the available lands even though it is problematic in nature. Problematic nature of soils leads to high plasticity characteristics, low shear strength and high swell shrinkage characteristics. But the day to day activities of mankind are augmenting risks to the environment in the same proportion. Plastic wastes have become one of the major problems for the world. The harmful gas which is being produced by them leads to tremendous health related problems. So, effective engineering implementation of this has become one of the challenging jobs for engineers. In geotechnical view point plastic is a fibrous material that used for reinforcing the soil is commonly known and it also influences the compaction and consolidation behaviour of that reinforced soil. In the view of the above, the present study is aimed to study compaction and consolidation properties of reinforced soil along with the index and engineering properties of virgin soil. Simply consolidation behaviour of soil compacted to proctor compaction energy with plastic fibres to be evaluated. HDPE fibres has to be used in three aspect ratios (AR = l/b) are 2(10x5mm), 4(10x2.5mm), 8(10x1.25mm). These different sizes of plastic strips mixed with highly compressible clayey soil at four different percentages 0.00, 0.25, 0.50, 1.00 by dry weight of soil. The soil is to be treated with plastic fibres and tested for their index properties and engineering properties.

Keywords: Plastic Fiber Reinforced Soil, Compaction, Consolidation Properties.

ICCE108: A COMPARITIVE STUDY OF RED SOILTREATED BY SEA SALT AND GLASS POWDER

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Abstract: Red Soil is a most common soil in India, which covers more than 20 percentage land area of India and is also known as 'regur'. This soil is spread over Madhya Pradesh, Gujarat, Andhra Pradesh, Tamil Nadu, Maharashtra, Karnataka and other parts of India as well. Presence of montmorillonite clay minerals is mainly responsible for swelling and shrinkage characteristic of Red Soil. The swelling and shrinkage characteristics of Red Soil pose a serious threat to foundations and structures constructed on them. Light weight and small structures are generally more susceptible to damage due to their less amount of overburden pressure. Glass Powder: The grain sizes of the soil-glass powder blend became coarser with increased glass powder treatment. Atterberg limit results showed improved index properties by glass powder treatment the liquid limit decreasing and the plastic limit also decreasing the plasticity index of the soil-glass powder mixtures. The specific gravity increased with increased glass powder content. These improved index Atterberg properties will enhance the usage of Red Soil-glass powder blend in engineering works such as embankments, retaining walls, backfills because the material will be more stable and workable. The MDD increased while the OMC reduced with increased glass powder content. The MDD increased to while the OMC reduced for up glass powder content. The cohesion decreased whiles the angle of internal friction increased by treatment. The coefficient of permeability (k) increased while the CBR increased by glass powder content. The CBR values recorded is below those prescribed in literature for subgrade/sub base material in pavement works hence it cannot be used alone as an additive in treating Red Soil but it can serve as an admixture when used with standard stabilizers for pavement works. The swelling pressure decreased by glass powder content. These improved properties show that Red Soil treated by crushed glass powder will be a suitable material for engineering works such as embankments, structural and non-structural fill, retaining wall backfill, highway material, drainage (foundation and drainage blankets) etc. Sea salt: In this study, experiments have been conducted to find out the effect of addition of sea salt on the behavior of Red Soil. From the laboratory test results it is observed that the addition of salt and glass powder in Red Soil significantly reduces the liquid limit, plastic index, swelling and plasticity index of soil with a minimum cost. Optimum moisture content and dry density of soil has also found to be changed with addition of sea salt. The comparative study is done for Red Soils treated by sea salt and glass powder. The treated Red Soil properties have been changed. Liquid limit, plastic limit, shrinkage limit, plasticity index, CBR, UCC values are increased.

Keywords: Red soil, Sea Salt, Glass Powder.

ICCE109: EFFECT OF BASALT AND STEEL FIBRES ON THE MECHANICAL PROPERTIES OF CONCRETE

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Abstract: Construction industry needs faster development of strength in concrete. High early strength concretes are more prone to cracking than moderate or low strength concrete. Fibres suitable for reinforcing concrete have been produced from steel, glass and synthetic fibres. When concrete cracks, the randomly oriented fibre start functioning, arrest crack formation and propagation, and thus improves strength and ductility. Concrete is a composite material which is made up of filler and a binder. Typical concrete is a mixture of fine aggregate, coarse aggregate, cement and water. Concrete has many properties that make it a popular construction material. For a long time concrete was considered to be a very durable material requiring a little or no maintenance. The assumption is largely true, except when it is subjected to highly aggressive environments. We build concrete structures in highly polluted urban and industrial areas, aggressive marine environments, and harmful subsoil water in coastal areas and in many other hostile conditions where other materials of construction are found to be non-durable. Since, the use of concrete in recent years, has spread to highly harsh and hostile conditions, the earlier impression that concrete is a very durable material is being threatened, particularly on account of premature failures of number of structures in the recent past. Strength of concrete is a pivotal aspect to be considered in the Concrete mix design for attaining all favourable qualities including durability in the past. Durability parameters of concrete are to be considered in the revision of IS 456 of 2000.One of the main reasons for deterioration of concrete in the past is that too much emphasis is placed on concrete compressive strength. As a matter of fact, advancement in concrete technology has been generally on the strength of concrete. When the concrete is exposed to severe environmental conditions, strength of concrete is not alone sufficient for the design stage. Both strength and durability have to be considered explicitly at the design state. Therefore, both strength and durability have to be considered explicitly at the design stage. Strength and durability relationship is another view point to be considered for the design state.

Keywords: Aggressive Environment, Premature Failure, Compressive Strength.

ICCE111: A STUDY ON PHYSIOCHEMICAL PARAMETERS TO EVALUATE THE DRINKING WATER QUALITY IN VANJIPAATI VILLAGE, MELUR, TAMILNADU, INDIA

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Abstract: Access to safe drinking-water is essential to health, a basic human right and a component of effective policy for health protection. The world is facing a water quality challenge. Serious and increasing pollution of fresh water in urban areas poses a growing risk to public health, food security, biodiversity and other ecosystem services. Without a preliminary assessments of the current water quality situation, the magnitude of the challenge is still unknown. Quality of drinking water is a serious concern in rural areas of Tamil Nadu, with cities facing problems of water contamination time to time. Better information is required on where the issues lie and what is needed to effectively and efficiently take action to protect and improve water quality.This paper focuses on the assessment of physiochemical parameters of water taken from Vanjipatti village, melur, Madurai district.

Keywords: Physiochemical Parameters, Preliminary Assessments, Water Quality.

ICCE120: MANUFACTURING BRICKS FROM SAND AND WASTE PLASTICS

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Abstract: The present work is performed to manufacture bricks or building blocks from sand and waste plastics. The bricks are produced by mixing waste plastic and sand after heating at 200oC. Two specimens of bricks, one with sand and waste CDs; another with sand and waste water bottles are produced and tested for some physical and mechanical properties. The sand-plastic bricks are lightweight and present a waxy surface. The results of sand plastic bricks are compared with those of traditional local bricks. It is observed that sand plastic bricks have low water absorption, low apparent porosity and high compressive strength.

Keywords: Compact Discs (Cd), Waste Water Bottles, Bulk Density, Compressive Strength, Durable.

ICCE119: DOMESTIC WASTE WATER TREATMENT BY AQUATIC PLANTS

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Abstract: The use of aquaculture as a means of treating wastewater involves both natural and artificial wetlands and the production of algae and higher plants (submersed and immersed) to remove contaminants such as nitrogen compounds, BOD, hydrocarbons, and heavy metals from the wastewater. Floating aquatic plants such as water hyacinth and duckweed appear to be some of the most promising aquatic plants for the treatment of wastewater and have received the most attention in this regard. Other plants are also being studied, among them seaweed and alligator weed. Aquatic plant systems are engineered and constructed systems that use aquatic plants in the treatment of industrial or domestic wastewater. They are designed to achieve a specific wastewater treatment goal.These systems are basically shallow ponds covered with floating plants that detain wastewater at least one week. The main purpose of the plants in these systems is to provide a suitable habitation for bacteria that remove the vast majority of dissolved nutrients. The water hyacinth is a perennial, free-floating freshwater aquatic macrophyte with rounded, upright, thick, waxy, and glossy green leaves and spikes of lavender flowers native to South America and found naturally in waterways, bayous, and other backwaters in temperate and tropical regions. The water hyacinth is considered one of the worst weeds in the world—aquatic or terrestrial—for its fast growth, which tends to clog the waterways for boat traffic and prevent sunlight and oxygen from getting into the water. It thrives in nitrogen-rich environments and consequently does extremely well in raw and partially treated wastewaters. When it is used for effluent treatment, wastewater is passed through a water-hyacinth-covered basin, where the plants remove nutrients, suspended solids, heavy metals, and other contaminants.

Keywords: Water treatment, Aquatic plants, Dissolved nutrients, Heavy metals.

ICCE112: NANOTECHNOLOGY BASED DRUG DELIVERYSYSTEMS FOR NANOMEDICINE

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Abstract: Nanomedicine and nano delivery systems are a relatively new but rapidly developing science where materials in the nanoscale range are employed to serve as means of diagnostic tools or to deliver therapeutic agents to specific targeted sites in a controlled manner. Nanotechnology offers multiple benefits in treating chronic human diseases by site-specific, and target-oriented delivery of precise medicines. Recently, there are a number of outstanding applications of the nanomedicine (chemotherapeutic agents, biological agents, immunotherapeutic agents etc.) in the treatment of various diseases. The bioavailability of a drug within the body depends on several factors like the size of the drug molecules and solubility parameters. Conventional dosage forms therefore face challenges in reaching the target site at appropriate dose. Metal nanoclusters are self -assembled nanoparticles made of polymers or small organic molecules crosslinked with plasmonic metals (such as gold, silver, or magnetic particles). Because of their molecular-like and fluorescence properties, they have gained importance in the field of drug delivery as well as biosensing and bioimaging. Dendrimers are nanopolymers with a well -defined structure, which is different from linear polymer molecules. Carbon nanotubes offer a number of advantages for delivering drugs to specific locations inside the body which suggest that they may provide an improved result over nanoparticles. For instance, researchers have developed a simple method to thermally ablate highly resistant cancer cells using targeted biodegradable graphene nanoparticles. Nanotechnology has also opened new opportunities in implantable delivery systems such as use in bone cement, nanoneedle patches, etc which are preferable than using other modes of administration like injections and oral delivery.

Keywords: Nanomedicine, Nanoclusters, Carbon nanotubes, Dendrimers, Graphene.

ICCE118: ANALYSIS OF LEAN CONSTRUCTION TECHNIQUES USING IN LABOURMANAGEMENT

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Abstract: The GDP of construction industry in India increased to 2379 Billion in 2017 from 1855 Billion in 2012.great challenge in the construction industry is to manage the labour force in a productive manner. Labour productivity depends on the type of project that is carried out, technical, social, organisational factors and the complexity of the project. The two main factors that affect the productivity is external and internal factors. The term improving the labour productivity is often misunderstood that if the labour is fully engaged with the work he is productive. But as per lean technology, it has been proved wrong, that the labour must be allotted the work where he can prove his skill and ability to do that work efficiently and quickly. By following this rule, the budget and the reworks can be minimized. As a result, the project can be handed over to the customer within the estimated time

Keywords: Lean Management Techniques, Construction Project, Time, Motion Study

ICCE114: FABRICATION OF NANOHYDROXYAPETITE / CHITOSAN / GUARGUM (NHA/CS/GM) BIONANOCOMPOSITES USING REMOVAL LEAD POLLUTED SOIL

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Abstract: In recent studies ,the use of HAPP for the removal of metals present in the soil .as in .Nanohydroxyapatite is a bioactive, biocompatible and bioresorbable nanoceramic material possessing both osteoinductive and osteoconductive properties used widely in the environmental remedation purposes.. In this research, a novel ternary nanocomposite system incorporating hydroxyapatite, chitosan and Guar gum (n-HA/CS–GM) has been synthesized via co-precipitation method at room temperature. The objective of this work was to interpret the impact of size, the chemical structure of the cited nanocomposites on cytotoxicity activity via human osteoblast cells and additionally to evaluate the biocidal activity of human pathogens inducing osteomyelitis by loading antibiotic clindamycin with (n-HA/CS–GM) nanocomposites. The crystallite size, surface morphology and thermal stability of nanocomposite has been obtained by comparing the results of FTIR, SEM, DLS, XRD and TGA data. These composites are used in removal contaminated metal present in the soil.

Keywords: Nanohydroxyapatite- Chitosan -Guar gum (n-HA/CS–GM) nanocomposite, Applications of Bioremedation

ICCE115: AN OVER VIEW ON "APPLICATION OF NANOTECHNOLOGY IN CIVIL ENGINEERING"

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Abstract: Nanotechnology is one of the most active research areas that encompass a number of disciplines, including civil engineering and construction materials. Nano-silica addition to cement based materials can also control the degradation ofthe fundamental C-S-H (calcium-silicatehydrate) reaction of concrete caused by calcium leaching in water as well as block water penetration and therefore lead to improvementsin durability. By betterment of using nano-cement has the potential to create a new paradigm in thisarea of application because the resulting material can beused as a tough, durable, high temperature coating.Fire-protective glass is another application of nanotechnology. This is achieved by using a clear intumescent layer sandwiched between glass panels (aninterlayer) formed of fumed silica (SiO 2) nanoparticles which turns into a rigid and opaque fire shield when heated. Most of glass in construction is, of course, on the exterior surface of buildings and the control of light and heat entering through building glazing is a major sustainability issue.The addition of nano-Al_2O_3 of high purity improves the characteristic of concretes, in terms of higher split tensile and flexural strength. Micro and Nanoporiues aerogel materials are appropriate for being core materials are appropriate for being core materials of vacuum insulation panels. Another application of aerigels is silica based products for transpired insulation.

Key words: Nano-Silica, Nano-cement, nano-Al_2O_3 , Nanoporiues aerogell

ICCE125: UTILIZATION OF WASTE SEA SHELLS AS A PARTIAL REPLACEMENT FOR COARSE AGGREGATE AND FINE AGGREGATE IN CONCRETE

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Abstract: This project is study about the experimental and utilization on the effects of replacing coarse aggregate and fine aggregate in concrete with waste seashells on the strength, density of concrete. Two control mix of ratios 1:1.5: 3 were batched by volume and by weight. Waste seashells were used to replace the coarse aggregate and fine aggregate by volume and by weight respectively. This percentage replacement varied from 0% to 100% at intervals of 20%.The compressive strength and densities of cured concrete cubes of sizes,150mm x 150mm x 150mm were evaluated at 3days,7days,28days. Increase in the replacement of coarse aggregate and fine aggregate are lowered compressive strength and density. This study identified possible cost reduction in replacing coarse aggregate and fine aggregate with waste seashells and recommended codification of the use of waste seashells as aggregates in concrete.

Keywords: Cost Reduction, Replacing Coarse Aggregate, Waste Seashells

ICCE117: ANALYSIS OF RISK ASSESSMENT IN CONSTRUCTION PROJECTS

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Abstract: In construction projects the responsibility of project manager is to monitor time, cost and quality. There are various types of risks involved in the construction projects, so it is difficult to maintain time, cost, and quality as planned. The main purpose of this study is not only to identify the list of risks involved in construction project but also to find the key risks that can be significantly influence the construction and mitigation measures. Risks in construction projects are analyzed through pilot survey include experts of academic, construction companies and governmental sectors. Risk factors such as financial risks, legal risks, management risks, market risks, technical risks, political risks and environmental risks are prepared for the pilot survey to formulate by seeing the relevant literature in the area of construction risk. This project covers the concepts of risk assessment in construction projects to be used for the one stop solution for all types of hazards most likely to occur during any construction project lifecycle. This research work is to identify and assess the risks and to develop a risk management framework for contractors/ investors/ developers.

Keywords: Construction, Risk ranking, Risk factors, Risk analysis, Risk assessment.

ICCE123: REMOVAL OF DYE USING CUO NANO POWDER"- APPLICATION OF INDUSTRIAL WASTE WATER MANAGEMENT

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Abstract: Nowadays metal oxide plays a main role to remove dyes and other contaminates present in the Industrial waste water by using Nanotechnology. In this study, the CuO Nanopowders were prepared by sol-gel method, This nanopowder was characterized by , FT-IR, XRD, SEM and PL. The synthesized CuO Nanopowder was found to be a good adsorbent to remove the MB dye from industrial waste water with different dose (0.1-0.3g/L) pH (6.4-8.4) and temperature (30-60^{0}C) and it reveals 85% of Photo degradation within 80min under UV light irradiation. After repeating this process in several times. This recycle the waste water is used in different purpose

Keywords: CuO Nanopowder, Methylene blue, Adsorption, Photocatalytic degradation,Waste water management.

ICCE126: EXPERIMENTAL STUDY ON HIGH STRENGTH CONCRETE USING M-SAND WITH PARTIAL REPLACEMENT OF CEMENT BY SILICA FUME

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Abstract: The huge quantity of concrete is consumed by construction industry all over the world. In India the convention concrete is produced using natural river sand from river beds as fine aggregate. Decreasing natural resources poses environmental problems and hence government restriction on sand quarrying resulted in scarcity and increase in its cost. One of the alternative material is using M-sand in concrete instead of natural river sand. This paper presents the experimental study on High Strength concrete using M-sand with partial replacement of cement by silica fume. The cement was replaced by silica fume as a percentage of 5%, 10%, and 15%. With 1.2% of superplasticer for better workability. The specimens were casted and the compressive and split tensile strength tests were carried out for 7 and 28 days. From the result the 15% replacement of silica fume gave greater compressive strength and split tensile strength.

Keywords: Superplasticer, Silica Fume,Environmental Problems.

ICCE127: EXPERIMENTAL INVESTIGATION ON STRENGTH AND DURABILITY CONCRETE WITH CARBON NANOTUBE

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Abstract: This paper discuss with the review of Carbon Nanotube (CNT) from various literature which are integrating Carbon Nanotube as 0.15% to 2.5% on strength characteristics and durability of the concrete. Sonication process is carried out by adding the CNT with surfactants by weight of cement or water. It is obtained from the various literature explains ultrasonic dispersion techniques were adopted to disperse them uniformly. Tensile, compressive strength, durability and bending tests have been conducted on the specimens in the past experimental program. This paper presents the methodologies and results in reference to various research papers on similar experiments. Moreover, This paper is discussed based on to enhance the above given properties.

Keywords: Concrete, Carbon nanotube (CNT), Sonication process, Compressive Strength, Tensile Strength, Durability.

ICCE128: STUDY AND BEHAVIOUR OF TUBULAR STEEL COLUMN FILLED WITH STEEL FIBER REINFORCED CONCRETE

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Abstract: Over the past few decades, concrete filled steel tubular (CFST) column plays an eminent role in the construction industry owing to its structural behaviour like large deformation and energy absorption capacity. The steel fiber reinforced concrete is to be filled in tubular steel column and another specimen is steel fiber reinforced concrete is encased in steel tubes. In this paper, an experimental investigation has been carried out to investigate the behaviour of steel fibre reinforced concrete is to be filled in tubular steel column and another specimen is steel fiber reinforced concrete is encased in steel tubes. The steel fibre used is 6mm length brass coated micro steel fibre and diameter 0.17 mm to 0.3mm.The size of the specimens includes 42.4mm diameter, 3.2mm thickness and 1500mm height. Experiments are undertaken to examine the behaviour of Fiber with CFST columns in terms of the failure modes, axial load Vs lateral deformation and enhancement in load carrying capacity. Based on the test results, the failure modes, axial stress-strain behaviour, ultimate load carrying capacity are done.

Keywords: CFST Columns, Lateral Deformation, Stress-Strain Behavior

ICCE129: EXPERIMENTAL STUDY ON GLASS FIBRE REINFORCED GEOPOLYMER CONCRETE

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Abstract: Geopolymer concrete, an innovative material that is characterized by long chains or networks of inorganic molecules is a potential alternative conventional Portland cement concrete for use in transportation infrastructure construction. It relies on minimally processed natural materials or industrial by-products to significantly reduce its carbon footprint, while also being very resistant to many of the strength and durability issues that can plague conventional concrete. However, the development of this material is still in its infancy, and a number of advancements are still needed. The experimental works involve conducting strength and durability tests on low calcium fly ash based Geopolymer concrete with addition of glass fiber length 6mm and 12mm respectively. Heat-cured fly ash based Geopolymer concrete has excellent compressive strength, and excellent resistance to sulphate attack. The Geopolymer concrete was heat cured at 70^{o}C for 24 hours. This paper effectively implies the M_{30} grade Geopolymer concrete with the molar concentration of NaOH being 8 and 12. The normal strength and durability tests on Ordinary Portland Cement (OPC) concrete as per ASTM standards is carried out on Geopolymer concrete addition of glass fiber.

Keywords: Geopolymer Concrete, Durability Tests, Glass Fiber.

ICCE130: EXPERIMENTAL STUDY ON BEHAVIOUR HIGH STRENGTH SELF-COMPACTING CONCRETE

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Abstract: Superior performances of Self-Compacting Concrete (SCC) in fresh state to achieve a more packing of material in concrete which is a motivation for use of alccofine admixture. Alccofine used in the Self compacting concrete (SCC) is to enrich the performance of the concrete material.The admixture alccofine in concrete improves durability parameters of concrete by refined pore structure, educes permeability. It also maintains the pH of the concrete to protect steel reinforcement. The alccofine will improves pump ability of concrete The alccofine admixture helps to enhance slump and extend slump retention without increasing the dosage of expensive chemical admixtures which make concrete to achieve the scc properties.It also enhance rate of strength gain in concrete mixes with high pozzolanic material contents like fly ash, GGBS, etc The mix design and the test in fresh state of SCC are carried out as per "Specification and Guidelines for Self-Compacting Concrete**"** – EFNARC. The hardened properties of SCC are studied as per "IS 516: 1959 (Reaffirmed 1999) Edition 1.2 (1991-07) Method of test for strength of concrete and IS 5816: 1999 Splitting Tensile Strength of Concrete Method of Test". The flexural strength of SCC is verified using ANSYS 12.1 in analytical Finite element procedure.

Keywords: Self-Compacting Concrete, Alccofine, GGBS

ICCE110: CHANGE IN SUBGRADE SOIL STRENGTH ON INTRODUCTION OF WASTE RUBBER

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Abstract: Disposal is a big problem links with extremely growing up country like India. The waste rubber tyres is safer disposal has become a biggest challenging job. This thesis work represents the how to safe dispose of the rubber tyres waste to save the environmental and atmosphere of the earth. The dissertation represents how to convert the rubber waste to useful material for construction work in geotechnical engineering and their properties. As we know that India is a growing country and population is increase day by day so this factors need to development and construction of building, roads, etc. because they can easily survive. In India the soil have found in different types. Some were the soil have good bearing capacity and poor also. So we have need to improves this poor bearing capacity of soil to provide the strength hardness, Durability of the structure. Tyre recycling, or rubber recycling, is the process of recycling waste tyres that are no longer suitable for use on vehicles due to wear or irreparable damage. These tyres are a problematic source of waste, due to the large volume produced, the durability of the tyres, and the components in the tyre that are ecologically problematic. Because they are highly durable and non-biodegradable, they can consume valued space in landfills the objective of present work is to review the engineering properties of soil. The study pertains to find out the optimum moisture content and maximum dry density with different proportion of cut rubber tyre. The study included, to determine the California Bearing Ratio (CBR) value with different percentage of cut rubber tyre. Rubber Tyres was cut into 10mm to 20mm (Width) and 25mm to 45mm (Length) and tyre powder (420micran). Added amount of rubber tyre had been varied in proportions of 5%, 10 %, 15% and 20 %.To comparing strength between tyre pieces and powder. So that the current study will help out in ascertaining the proper improvement of soil using rubber tyre.

Keywords: Subgrade Soil, Waste Rubber

ICCE19: EXPERIMENTAL STUDY ON PARTIAL REPLACEMENT OF PROSOPIS JULIFLORA IN COARSE AGGREGATE AND ADDITION OF EGG SHELL POWDER BY CEMENT

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Abstract: The concrete project is heavily used as construction materials in modern society. With the growth in urbanization and industrialization and its demand is in increased day by days. In order to minimize the negative impact of concrete, the use of waste materials. Our project deals with the partial replacement prosopis juliflora in coarse aggregate and added cement by eggshell powder .The substituent to coarse aggregate by prosopis juliflora level of 10% optimally used .The added cement by eggshellpowder at level of 2.5%,5%,7.5% is to be studied for masteries and strength of properties 100% cement concrete mix is of M20 and water cement ratio is 0.55. The strength will be tested during the period of 7 days and 28days respective. We will compare the replace concrete with the conventional concrete about the strength of the concrete.

Keywords: Prosopis juliflora, coarse aggregate, egg shell powder.

ICCE131: EXPERIMENTAL INVESTIGATION OF CONCRETE BY USING QUARY DUST, FLY ASH & MICRO STEEL FIBRE

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Abstract: The use of quarry fines in concrete is desirable because of benefits such as useful disposal of a byproduct, reduction of river sand consumption, and increased strength. However, the use of quarry fines leads to a reduction in the workability of concrete. Therefore, the concurrent use of quarry fines and fly ash in concrete will lead to the benefits of using such materials being added and some of the undesirable effects being negated. The use of fly ash in concrete is desirable because of benefits such as useful disposal of a byproduct, increased workability, reduction of cement consumption, increased sulfate resistance, increased resistance to alkali-silica reaction and decreased permeability. However, the use of fly ash leads to a reduction in early strength of concrete. The decrease in early strength by the addition of fly ash is ameliorated by the addition of quarry dust. The decrease in workability by the addition of quarry dust is reduced by the addition of fly ash. This thesis investigates quantitatively the workability and strength of a concrete mix at 3-days, 7-days, and 28-days age containing 0% - 45% of fine aggregate as quarry fines and 0% - 30% of cementations materials as fly ash. These findings guide the practitioner in selecting fly ash and quarry fines contents to meet strength and workability requirements of a concrete mix. The concurrent use of the two byproducts will lead to a range of economic and environmental benefits.

Keywords: Quary Dust, Fly Ash, Micro Steel Fibre.

ICCE20: EXPERIMENTAL STUDY ON PARTIAL REPLACEMENT OF POLYCARBONATE PLASTIC WASTE IN COARSE AGGREGATE AND ADDITION OF COCONUT FIBRE ASH WITH CEMENT

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Abstract: The research paper discusses the experimental study on partial replacement of polycarbonate plastic waste in coarse aggregate and addition of coconut fibre ash by cement.This research paper deals use of agricultural and industrial waste material into concrete to make environment eco friendly. The coconut fibre ash is added with the cement as 2.5%,5%&7.5% and partially replaced by polycarbonate plastic waste in the proportions of 10,20,30%. The strength will be tested during the period of 7 days and 28 days.

Keywords: Polycarbonate Plastic Waste, Coconut Fibre Ash.

ICCE132: RETROFITTING OF RC BEAM WITH EXTERNALLY BONDED SIMCON LAMINATES

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Abstract: This paper presents the results of experimental and analytical studies concerning the flexural strengthening of RC beams using externally bonded Slurry Infiltrated Mat CONCRETE (SIMCON) laminates. A total of four reinforced concrete beams were cast and tested in the laboratory over an effective span of 1200 mm. Three beams were strengthened with bonded SIMCON laminate at the bottom under virgin condition and tested until failure; the remaining one beam was used as control specimen. Static responses of all the beams were evaluated in terms of strength, stiffness, ductility ratio, energy absorption capacity factor, compositeness between laminate and concrete, and the associated failure modes. The theoretical moment-curvature relationship for the test specimen and the load-displacement response of the strengthened beams and control beam were predicted by using FEA software ANSYS. Comparison was made between the numerical (ANSYS) with the experimental and theoretical results. The results show that the strengthened beams exhibit increased flexural strength, enhanced flexural stiffness, and composite action until failure.

Keywords: Composite Beams, Fiber Reinforced Concrete, Simcon, Flexural Retrofit, Metal Fibers.

ICCE135: EXPERIMENTAL INVESTIGATION ON VERMICULTE CONCRETE USING FLY ASH AND SILICA FUME AS SUPPLEMENTARY CEMENTITIOUS MATERIAL

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Abstract: This experimental study is aimed to investigate the effect of vermiculite as a replacement to fine aggregate in concrete. M_{30} grade of concrete is prepared by using ingredients such as cement, fine aggregate, coarse aggregate, vermiculite, potable water and mineral admixtures such as fly ash and silica fume. The water cement ratio (w/c) is adopted as 0.45. This project is to be carried out on concrete cubes and cylinders with various percentage of vermiculite 0%, 20%, 40%, 60%, 80%, and 100%.Compression, Split tensile and Flexural strength of vermiculite concrete specimens are observed after curing period of 7, 14 and 28 days which shows considerable increase in strength. Vermiculite plays a major filler role in concrete instead to sand. The replacement of vermiculite to fine aggregate will helps to reduce the self-weight of the structure. Thereby it reduces the price of construction.

Keyword: Vermiculite Concrete, low density, fly ash, silica fume.

ICCE150: EXPERIMENTAL INVESTIGATION OF SUSTAINABLE BRICK INCOPORATING AGRO-WASTE

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Abstract: The main objective of the project is utilization of potential bagasse residues in clay brick. The attempt has been made with trial bricks of (19 x 9 x 9 cm) were tested with bagasse proportions 0%, 10%, 20%, 30% for the replacement of fly ash. These bricks were then tested for compression, water absorption and other initial brick quality test as per Indian standards to know the optimal mixing ratios of fly ash, lime and super plasticizers. The aim of our project is to make economical green bricks to avoid ash disposal problem.

Keywords: Bagasses, Water Absorption, Fly Ash, Lime, Super Plasticizers

ICCE136: EXPERIMENTAL INVESTICATION ON CONCRETE USING BOTTOM ASH AS A PARTIAL REPLACEMENT OF FINE AGGREGATE IN ADDITION WITH PPF

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Abstract: There is a scarcity and availability of natural aggregate is due rapid development in construction technology. Now day's deforestation extraction of natural aggregates from river beds lakes and other water bodies have resulted in huge environmental problems. Moreover the filtration of rain water achieved by deposits of natural sand is being lost, there by causing contamination of water reserves used for human consumption. Hence, to prevent pollutions authorizes are imposing more and more stringent restrictions on the extractions of natural aggregates and its crushing have been banned. The best way to overcome this problem is to find alternative aggregate for constructions in place of conventional natural aggregates. In order to overcome these problems bottom ash is used as a partial replacement for fine aggregate. Bottom ash normally recognized as coal combustion residues (CCRs) from pulverized fuels power stations has been categorized as solid garbage. But, CCRs are increasingly being regarded as useful substitute materials resources. They had an appearance similar to dark gray coarse sand, and its particles are clusters of micron sized granules, up to 5mm in diameter. Present study investigates the effect of coal bottom ash as partial replacement to sand in concrete .compressive strength and tensile strength characteristics of M_{25} grade concrete were studied with bottom ash varying from 0% (conventional concrete), 10% ,20% ,30% ,40% replacement and at different curing periods.

Keywords: Bottom Ash**,** Coal Combustion Residues, PPF, Natural Aggregates

ICCE137: EXPERIMENTAL INVESTIGATION ON BEAM COLUMN JOINT BY USING POLYPROPYLENE FIBRE & E-WASTE

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Abstract: The conventional concrete has low tensile strength, low energy absorption and low ductility especially in beam column joints. Thus, the beam-column joints must be designed to resist impact loads. To resist these forces and the better flexural properties fibre is to be added. Therefore, the stability of structure can be improved. This project deals with the beam-column joint incorporating polypropylene fibre and E-waste material. The main objective of this project is to study various parameters like carrying capacity, stiffness, ductility and energy absorption capacity of beam – column joint by using polypropylene and E-waste. By using of e-waste material we can achieve green building concepts, so that effect to environment is reduced.

Keywords: Polypropylene Fibre, E-Waste.

ICCE138: EXPERIMENTAL INVESTIGATION OF HIGH DENSITY CONCRETE INCORPORATING HEMATITE

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Abstract: High Density concrete (HDC) or Heavy Weight concrete is a concrete type specially introduced for arresting ionization radiation in accordance with the limited space availability in Nuclear power plants, in hospitals and other Radiation zones. The concrete is ideal for radiation shielding in a variety of environments using less space than traditional concrete construction. HDC used for shielding applications generally has a density in the range of 3500 Kg/m^3 to 5000 Kg/m^3. Since concrete contains more than 70% aggregate, the only way to make it highly dense is to choose suitable high density aggregates. High Density concrete is commonly used for radiation shielding of nuclear-reactors and other structures like counter weights, coating of off-shore pipelines. High Density concrete or is designed by using heavy weight aggregates such as hematite, magnetite, barite etc. The material is called hematite is used in this special concrete. The mix used is for OPC grade of cement. High density concrete can be designed in same way as normal weight concretes, but the additional self-weight should be taken into account.

Keywords: High Density Concrete, Heavy Weight Aggregates.

ICCE139: AN EXPERIMENTAL INVESTICATION ON THE EFFECT OF NATURAL FIBRE AND ARTIFICIAL FIBRE IN SELF COMPACTING CONCRETE

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Abstract: Self compacting concrete can offer a convenient, practical and economical method for overcoming micro cracks and similar type of dificiencies. The fibre reinforced concrete means that in the concrete some type of materials (fibres) are used to increase the strength of concrete, because concrete week in tension more in compressive strength. So increase the tensile strength for adding the fibre to concrete because the fibres are strong in tensile strength. Generally the fibers are classified into two types. They are artificial fibre and natural fibre. In the artificial fibres steel, glass, carbon, polypropylene etc are used and in natural fiber horse hair, coir, bamboo, jute, coconut fibers, sheep wool etc are used. I have used sheep wool in natural fibre and polypropylene used in artificial fibre. Sheep wool is natural fibre and it is strong in tension, so it can be used in fibre reinforced material. Sheep wool an alternate non-degradable matter. And also available in cheap cost. Experiments were conducted on concrete cubes with various percentage of sheep wool and polypropylene fibre i.e, 0. 5%, 1.0% and 1.5% by the weight of cement in different ratio for selected mix proportions. For each combination of proportion of concrete three cubes, cylinder, and beams are tested for their mechanical properties.

Keywords: Natural Fibre, Artificial Fibre, Self Compacting Concrete

ICCE140: EXPERIMENTAL INVESTIGATION STRENGTH AND WORKABILITY STUDIES ON GLASS FIBER REINFORCED CONCRETE

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Abstract: Concrete, the widely used construction material is taken as the core for the present investigation. Due to the advent of new construction technologies & construction methodologies, the present trend is towards improving the properties of the concrete like durability, tensile strength etc. These factors can be achieved by adding materials like fibers, mineral admixtures like silica fume etc. In this thesis, i have chosen two type of grade of concrete. One is less grade of concrete M_{20} & another one is Medium grade of concrete M_{40}. Fiber chosen is chopped strand E-Glass fibre of 6mm length, were added separately in various proportions of 1%, 2%, 3%, 4%, 5%, and 10% by weight of cement into the grade of concrete M_{20} & M_{40}.Study of mechanical properties of hardened concrete such as compressive strength, split tensile strength & modulus of rupture, load deflection curve and workability studies for M_{20} & M_{40}. Cost analysis for the optimum proportion of concrete is carried out.

Keywords: Glass Fiber, Strength Workability.

ICCE141: REMOVAL OF DYE USING ALGAE FROM WASTE WATER

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Abstract: This review discusses the method for the removal of dyes from the wastewater effluents. Wastewater effluents contain synthetic dyes which cause potential hazard to the environment hence these dyes need to remove from wastewater bodies. The various dye removal technique is classified in to Chemical, Physical, Biological methods. Physical methods include Adsorption, Ion exchange and Filtration/Coagulation methods etc. while chemical methods include Ozonisation, Fenton reagent, Anaerobic Degradation, Biosorption etc. Absorption found to be very effective and cheap method among the available dye removal methods. Dyes from the industries can be separated by adsorbent such as sea algae however its cost restricts the use in large scale application. Experimental studies proved that the effective removal of dyes is obtained using this method is cheap and economical.

Keywords: Algae**,** Dyes, Wastewater Effluents.

ICCE142: EXPERIMENTAL INVESTIGATION ON UTILIZATION OF PLASTIC WASTE IN MANUFACTURING OF BRICK

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Abstract: The present work is performed to manufacture of brick from M-sand and plastic waste, which is bind with the cement. The plastic waste which is used as Polyethylene Terephthalate [PET]. The fine aggregate used as a M-sand which is sieved in size 4.75 mm. The Ordinary Portland Cement [OPC] grade53 is used. The PET waste are crushed .The mix proportions are 1:3 (cement :sand) and then PET plastic waste are Mixed together 5%, 10% ,15% & 20% by weight of brick .The main aim of this research to compare the compressive strength, water absorption and cost analysis of the plastic brick with the conventional brick .The focal point of this research is the plastic wastes are utilized in the construction work because of its cheaper , light weight and technical reasons .Therefore a good deal of work and application of utilization of plastic waste has been undertaken world over.

Keywords: Poly Ethylene Terephthalate (PET), M-sand, OPC 53 Grade Cement.

ICCE143: EXPERIMENTAL SUTDY OF AN AERATED CONCRETE USING GROUNDED E-WASTE

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Abstract: This experimental study deals with the effect of E- waste on Aerated concrete block in state of grounded condition. Grounded E-waste is used as a partial replacement for incinerated coal ash in varying percentage in order to utilize waste and create eco-friendly environment. In this study the compressive strength has been tested for the aerated blocks by stream curing. This compressive strength is compared with each other and with the standard value. The usage of the aerated concrete block is cost effective and reduces up to 20% of dead load of wall on beams and makes the structure lighter. Aerated blocks have many benefits on structures like sound and heat insulation, fire resistance, faster and easy construction. In this study the minimum compressive strength is obtained for 20% replacement of grounded E- waste to incinerated coal ash in stream curing. And it was concluded that autoclave curing gives early and better strength than the other types of curing.

Keywords: Grounded E-Waste, Aerated Concrete

ICCE144: GEOPOLYMER SAND

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Abstract: Geopolymer sand is used as an alternative method for river sand, to increase strength & durability and to reduce the sand cost. We manually create an geopolymer sand. We tried this with different types of materials, (1)Fly ash (2)Steatite. We created different mix of sand particles on site. Geopolymers is more useful on building construction, Dams, Lab, Roof, Columns, etc…We are testing with both samples on flyash and steatite. We can find the real strength of sand is flyash. Fly ash is used with geopolymer sand to increases durability. Testing is done to determine the fineness of given geopolymer sand sample, to plot a particles size of distribution curves and to find effective size. The requirement materials are required sieve, weighting balance, sieve shaker. We are testing different types (1)Sieve analysis, (2)Specific gravity test, (3)Impace value test, (4)Abrasion test, (5)Water absorption test, (6)fineness test. More testing can be done on geopolymer sand.

Keywords: Geopolymer Sand, Building Construction, Increases Durability.

ICCE145: AN EXPERIMENTAL INVESTIGATION OF MECHANICAL PROPERTIES OF CONCERETE BY PARTIALY REPLACING COARSE AGGREGATE WITH CUPOLA SLAG

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Abstract: Infrastructure development across the world creates demand for construction material. The problem arising from continuous technological industrial development is the disposal of waste material, the raw material of concrete consists of cement, sand and crushed aggregate. Partial replacement or full replacement of this raw material by waste products may decrease the cost reduced the energy consumption and also reduce the environmental pollution. The main objective of the studies is to encourage the use of waste product as construction material in cost effective manner. The high cost of materials for any conventional building is a major factor that affects the housing delivery worldwide. This has necessitated research for alternative cost effective materials in construction. The paper aims at analyzing characteristics compressive and split tensile strength of cupola slag of concrete produced. By partial replacement using cupola slag, cement and sand in M25 grade concrete. The cube and cylinder are casted, tested then physical and mechanical properties are determined.

Keywords: cupola slag, physical and mechanical properties.

ICCE146: EXPERIMENTAL INVESTIGATION ON COMPOSITE BEAM BY USING STADD PRO ANALYSIS

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Abstract: The concrete and steel are used as a most essentially material in construction industry throughout the world. But still concrete is weak in tension zone. In order to improve that tensile strength of the concrete, there are numerous technologies are introduced day by day in civil engineering field. The objective of the study also improving the flexural strength of the R.C beam provided with the channel section in bottom of tension zone of concrete. Shear connector are used to avoiding the compare between concrete and steel and also improving the shear strength of the R.C beam. In use of shear connector T-type & headed stud shear connectors use in concrete. In this work of project without reinforcement & with reinforcement use in concrete. Polyproflyne fiber added in neutral axis depth layer. Used in cement OPC43 graded of cement. Headed stud shear connector 20mm dia thickness of bolt & T-type of shear connector thickness 5mm plate of use in connector.

Keywords: Composite Beam, Stadd Pro Analysis

ICCE147: EXPERIMENTAL INVESTIGATION ON GEOPOLYMER CONCRETE

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Abstract: Every year, approximately two billion tons of cement are produced, a figure that is likely to rise in the future. The production of cement comes with an adverse release of CO_2, the cement industry accounting for 5% of anthropogenic carbon dioxide emissions alone. These emissions come from different stages of the cement production – the calcinations process of limestone, combustion of fossil fuels in the kilns, and from power generation. In the hope of reducing the carbon footprint of the industry, cement has been fully replaced by fly ash with similar hydration behavior to PPC. Fly ash is one of the naturally-occurring products from the coal combustion process and is a material that is nearly the same as volcanic ash. The aim of the project is to study the effects on alkaline activator solution on strength of geo polymer concrete. The molarity of alkaline activator solutions considered is 3M, 7M and 10M. To study the basic properties of PPC and GPC compressive strength, split tensile strength, flexural strength of the specimen were tested.

Keywords: Cement Industry, Co_2, Fly Ash, Volcanic Ash, PPC, GPC.

ICCE148: EXPERIMENTAL STUDY ON CONCRETE WITH PARTIAL REPLACEMENT OF CEMENT BY COCOPEAT AND WASTE BANANA LEAF ASH

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Abstract: In this project, it is proposed to study the behavior of concrete while adding cocopeat& waste banana leaf ash as partial replacement for cement. The world is now concentrating on alternative material source that are less harmful to environment. Generally waste materials obtained from industries are used as replacement materials.Like this,Cocopeat is an organic material which is waste material obtained from coconut. Like a sponge, CP can hold large quantities of water, it will reduce the rate of curing. Banana leaf ash contains pozzolanic reaction that usually occurs in Portland cement. Banana leaf produces large amount of Agro-waste. The BLA is replaced in cement about 10% , 20% ,30% and CP is about 4%,8%,12%. The result reveal that we can replace the BLA by 20% and CP by 8% to obtained the desired strength of M20 concrete.

Keywords: BLA- Banana leaf ash, CP-Coco Peat, Organic waste.

ICCE149: AN EXPERIMENTAL INVESTIGATION ON PROPERTIES OF CONCRETE BY THE ADDITION OF FLYASH AND SUPERPLASTICIZERS

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Abstract: This experimental investigation on mixture of concrete with admixture and fly ash by reducing the volume of cement and water content with fly ash admixture respectively. This experiment presents the effect of mixture of fly ash and mono vinyl alcohol admixture on various properties of concrete such as compressive strength , tensile strength , workability and fracture properties with various contents of fiber (0% , 0.5% , 1.0% , 1.5%).The result of this investigation indicates that by adding of mono vinyl alcohol and fly ash shows maximum compressive and tensile strength.

Keywords: Mono Vinyl Alcohol, Fly ash.

ICCE152: EXPERIMENTAL STUDY OF PERVIOUS CONCRETE WITH AND WITHOUT ADMIXTURE

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Abstract: One of the most important problems that each and everyone is facing in our day to day life is poor road condition due to stagnant of water. This may lead to damage of road surface or subgrade that causes failure that results in accidents. This problem can be solved by pervious concrete. Pervious concrete is a special type of concrete which consist of cement, coarse aggregate, water and if required, admixture and other cementious material. As there are no fine aggregate used in the concrete mix, the voids content is maximum which allows the water to flow through its body so the pervious concrete is also called as permeable concrete and porous concrete. There is a lot of research work is going in the field of pervious concrete. The compressive strength of pervious concrete is less when compared to the conventional concrete due to its porosity and voids. Hence the usage of pervious concrete is limited even though it has lot of advantages. If the compressive strength and flexural strength of pervious concrete is increased, Then, it can be used for many numbers of application. Using the common material and method, the strength of the pervious concrete is low. Using smaller sized aggregate, silica fume (SF), and superplasticizer (SP) in the pervious concrete can enhance the strength of pervious concrete greatly. The pervious pavement materials that composed of a surface layer and a base layer were made. The compressive strength of the composite can reach 20 MPa and the flexural strength 6 MPa. The water penetration, abrasion resistance, and freezing and thawing durability of the materials are also very good. It can be applied to both the footpath and the vehicle road. It is an environment-friendly pavement material. The rainwater can quickly filter into ground, so the groundwater resources can renew in time. As the pavement is air permeable and water permeable, the soil underneath can be kept wet. It improves the environment of road surface. The pervious concrete can absorb noise of vehicles which creates quiet and comfortable environment.in rainy days. The pervious concrete pavements have no plash on the surface and does not glisten at night. This improves the comfort and safety of drivers. The pervious concrete materials have holes that cumulate heat. Such pavements can adjust the temperature and humidity of the Earth's surface and eliminates the phenomenon of hot island cities.

Keywords: Pervious Pavement, Groundwater Resources, Road Surface.

ICCE153: RECENT TRENDS ON FUTURE ENERGY RESOURCE

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Abstract: Hydrogen can be produced from a variety of domestic resources, such as natural gas, nuclear power, biomass, and renewable power like solar and wind. These qualities make it an attractive fuel option for transportation and electricity generation applications. It can be used in cars, houses for portable power and in many more applications. Hydrogen energy involves the use of hydrogen and hydrogen-containing compounds generate energy to supply all practical uses needed with high energy efficiency, overwhelming environmental and social benefits, as well as economic competitiveness. Hydrogen and oxygen are converted into heat and water, producing electricity in the process. Hydrogen is an energy carrier that can be used to store, move, and deliver energy produced from other sources. Today, hydrogen fuel can be produced through several methods. The most common methods today are natural gas reforming (a thermal process), and electrolysis. Other methods include solar-driven and biological processes. Hydrogen will simultaneously reduce the dependence on foreign oil and the emission of greenhouse gases and other pollutants. Hydrogen is an eco-friendly gas. This paper focuses on the recent pastand future of hydrogen energy.

Keywords: Hydrogen, Oxygen, Greenhouse Gas, Emission, Eco-friendly.

ICCE154: AIR POLLUTION PREDICTION USING MACHINE LEARNING

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Abstract: Generally, Air pollution refers to the release of pollutants into the air that are detrimental to human health and the planet as a whole. It can be described as one of the most dangerous threats that the humanity ever faced. Driven by the increasingly serious air pollution problem, the monitoring of air quality has gained much attention in both theoretical studies and practical implementations. Here, we present the architecture, implementation and optimization of our own air quality sensing system, which provides real-time and fine-grained air quality map of the monitored area. Our objective is to minimize the average joint error of the established real-time air quality map, which involves data inference for the unmeasured data values. The Big Data Technology has been proposed for the analysis of power control problem to reasonably plan the sensing tasks of the power-limited sensing devices. We are also undergoing a future proposal for real-time power control problem using Spark Technology.

Keywords: Air pollution, Big Data Technology, Spark Technology.

ICCE155: EXPERIMENTAL ANALYSIS ON WATER QUALITY STANDARDS AROUND MADURAI CITY

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Abstract: Groundwater is one of the most important natural resources ground water has become a necessary resources over the past decades due to the increase and industrial uses etc. The ground water quality is equally important as the spatial analysis and it is tool for representation and analysis of spatial information releated to water resources. The major water quality parameters such as PH, Electrical conductivity, (EC), Total Dissolved solids, Total hardness, Turbidity, Chloride, Sodium, Potassium, Dissolved, oxygen, Total alkalinity, Temporary hardness and permanent hardness have been analysed. The spatial variation maps of these ground water quality parameters were derived and compared as per IS 10500:2012. The final integrated map shows three priority classes such as High, Medium and Low groundwater quality zones of the study area and provides a guideline for the suitability of groundwater for domestic purposes.

Keywords: Groundwater, Water Resources, Low Groundwater Quality Zones.

ICCE156: EXPERIMENTAL STUDY ON SELF-CURING CONCRETE BY USING PEG-400

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Abstract: Self-curing concrete is one of the exceptional cement in lacking relieving because of human carelessness scarcity of water in dry region. The ACI-308 Code expresses that "self-curing indicates to the procedure by which the hydration of concrete happens in view of the accessibility of extra interior water that isn't a piece of the blending water. The utilization of admixture POLYETHYLENE GLYCOL in regular concrete as an admixture enables better hydration to process and thus to accomplish better quality of the solid. Right now, impact of admixture PEG-400 on compressive quality by shifting the level of PEG-400 by weight of concrete 0.5%, 1%, 1.5% and 2%, 2.5% will be examined. The compressive quality of self-relieving concrete at 7, 14 and 28 days is contrasted and those of regularly restored concrete for a plan blend of M30 grade concrete.

Keywords: Self-Curing, Compressive Strength, PEG-400

ICCE157: EXPERIMENTAL INVESTIGATION ON BANANA FIBER REINFORCED CONCRETE WITH CONVENTIONAL CONCRETE.

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Abstract: Banana fiber reinforced concrete is high performance fiber reinforced concrete with significant behavior under tension. In this paper, examines the strength behavior of concrete reinforced with banana fibers. Banana plant (Scientific name: Musa acuminate) not only produces the delicious fruit but it also provides the textile fiber. This paper mainly focuses the banana fiber based composites which have wide applications in construction. These banana fibers have good physical and mechanical properties and can be employed more productively. Banana fibers are economical, ecological and perishable. Emphasis is placed on the influence of fiber content on the key micromechanics properties relevant to composite ductility. In this investigation, six different percentages of banana fibers (0%, 1%, 2%, 3%, 4%, 5% and 6%) having 40mm length was used. Ordinary Portland cement of grade 53 and M30 grade concrete were used. At various periodical ages, the banana fiber reinforced concrete is tested for compressive strength and split tensile strength**.** This study investigates the strength behavior of concrete reinforced with banana fibers to improve the strength and practices of concrete. Banana fibers have shown high variability along the length and between fibers, which is a characteristic of natural fibers. The Stress of banana fibers was a function of the testing speed. At lower strain rate, an increase in strain facilitates the amorphous to crystalline sharing of load. At higher speeds, however, the faults dominate with catastrophic failure at the highest strain rates.

Keywords: Banana Fiber Reinforced Concrete, Catastrophic failure.

ICCE159: EXPERIMENTAL INVESTIGATION ON CONCRETE WITH PARTIAL REPLACEMENT OF CEMENT BY USING COW DUNG ASH

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Abstract: Concrete is an essential component in the development of construction. Normally PCC mixed with Cement, Fine aggregate and coarse aggregate were used .To produce an environmental friendly concrete using the available waste material is now trending. One of the Waste materials that can be used in concrete mix is Cow Dung Ash (CDA). It contains lime and few other minerals that help in increasing the quality without compromising the strength of concrete. Cow Dung Ash (CDA) has an advantage that offers lightness of weight and low thermal conductivity. This project presents the result on study for the use of cow dung ash as partial replacement of cement in production of concrete. The compressive strength was tested for 2.5%, 5%, 7.5% and 10 % of M30 concrete with various size of aggregate (16 mm & 20mm). The tests were conducted for the periods of 7, 14 & 28 days of curing.

Keywords: Cow Dung Ash, Compressive Strength.

ICCE158: EXPERIMENTAL STUDY ON CONCRETE WITH PARTIAL REPLACEMENT OF CEMENT BY ADDING GROUND GRANULATED BLAST FURNACE SLAG AND RICH HUSK ASH

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Abstract: A mixture of binding materials , fine agrregates, coarse aggregates, cement and water in suitable proportions is called concrete. When these ingredients are mixed in suitable proportions, they form easily workable mix known as plastic ,wet or green concrete. When this plastic concrete becomes hard like stone, this is termed as harden concrete. It is estimated that between 6.0 to 7.2 million metric tons ground granulated blast furnace slag ,8.5to 9.0 million tons of rice husk ash is obtained each year in india.The primary applications for GGBFS in the United States are used as a granular base or as an cement replacement material in construction applications.The cost of concrete can be reduced by the usage of this waste product as a partial replacement of cement.The main objective of this investigation is to study experimentially the effect of partial replacement of cement by ground granulated blast furnace slag and rice hush ash on the various strength properties of concrete by using the mix design of M_{30} grade upto phase-I level the compressive strength ,split tensile strength and flexture strength of GGBFS of M_{30} grade at 7days, 14 days,28daysare determined.

Keywords: Ground Granulated Blast Furnace Slag, Rice Husk Ash, Split Tensile Strength, Flexure Strength.

ICCE163: INVESTIGATION ON CONCRETE USING E WASTE AND MICRO SILICA

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Abstract: In this experimental work the behavior of E-plastic waste in concrete as partial replacement of coarse aggregate and micro silica in concrete as partial replacement of cement was investigated and strength and workability characteristics were studied. The E-plastic waste was used to replace coarse aggregate and the percentage of replacement was carried out in this work as 0%,5%,10%,15% and 20% by total weight of aggregate and also the micro silica was used to replace cement and percentage of replacement was carried out in this work was 0%,5% and 10%by total weight of cement. The use of this waste plastic increases the stiffness of the concrete which reduces the ductility of the concrete. Also for reduces the use of natural resources and disposal of wastes, prevention of environmental pollution and saves energy.

Keywords: Compressive Strength, Flexural strength, E-Plastic Waste, Micro Silica, Workability.

ICCE160: EXPERIMENTAL INVESTIGATION ON PARTIAL REPLACEMENT OF CEMENT BY FLY ASH, NATURAL FINE AGGREGATES BY SAWDUST AND COIR AS A FIBER IN CONCRETE.

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Abstract: This paper focuses at the replacement effects on the addition of Fly Ash, Sawdust and Coir in concrete as a partial replacement of Cement and Natural Fine Aggregates, respectively. Coir, here acts as a fibre in the concrete. The experiment is carried out by finding the slump value, compressive strength, split tensile strength and flexural strength. Natural Fine Aggregates are replaced by Sawdust in 5%, 10%, 15%, 20%, 25% and 30% by weight in the concrete. Fly Ash and coir are kept constant at 20% and 4% respectively to the weight of the cement throughout the mix. Fly Ash presents good pozzolonic properties, Sawdust shares similar properties as Natural Fine Aggregates and Coir provides good split-tensile and flexural strengths to the concrete. The results are compared with the control mix of design mix M30. The specimens are tested after 7 days of curing. It is observed that while keeping Fly-Ash and Coir constant at 20% and 4% respectively, up to 20% replacement of Natural Fine Aggregates by Sawdust can be carried out in concrete without decreasing the strength. The value of slump decreases with the increase in the amount of Sawdust. Using these waste products will also benefit the environment as normally such products end up in land-fills and increase the carbon footprints.

Keywords: Fly Ash, Natural Fine aggregates, Sawdust Coir.

ICCE161: STRENGTHENING OF RC BEAMS USING FLEXIBLE CONCRETE

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Abstract: Flexible Concrete (FC) or Engineered Cementious Composites (ECC) is composed of all the ingredients of a conventional concrete but the coarse aggregate is replaced and reinforced with polymer fibres. The scope of this study is to improve the ductility of conventional concrete by addition of Polypropylene fibre (PP).Tests were carried out on cubes and prisms with cement mortar mix ratio of 1:2 and fibre content of 0, 0.25, 0.50, 0.75, 1% by volume fraction of concrete using Naphthalene based SP Conplast 430. The result shows that the maximum compressive strength was obtained at 0.5% of PP fibres and further increase in PP fibres lowered the compressive strength. The flexural strength , ultimate midspan deflection, ductility index tends to increase and act as best crack arrestor upto 0.75% addition of PP fibres and decrease at 1% of PP fibre is due to formation of balling of fibres which leads to increase in number of pores and further addition of PP fibres decrease the workability and strength. After obtaining the optimum dosage of fibre content ,the RC beams are casted and tested , the cracked RCC beam are rehabilitate and strengthen with Flexible concrete of 0.75% of fibre content with different layers of thickness ,each layer of 6mm thickness. The cracked RC beam strengthened with 2 layers of thickness shows maximum flexural strength, ultimate midspan deflection, ductility index compared to conventional RCC beams.

Keywords: ECC, Polypropylene fibre (PP), Flexural strength , Ultimate Midspan deflection, Ductility Index, crack arrestor, strengthening.

ICCE162: STRENGTHENING OF RC BEAMS IN FLEXURE USING FERROCEMENT

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Abstract: As the number of civil infrastructure system increase worldwide, the number of deteriorated building and structures also increase. Complete replacement is likely to be increasing financial burden and might certainly be waste of natural resources. Upgrading or strengthening to increase their load carrying capacities or enhance ductility under seismic loading is essential. Ferrocement is a thin walled cement based composite that traditionally makes use of steel wire mesh or expanded metal reinforcement. This experimental study is to understand the structural behavior of ferrocement slab under two point loading condition by altering different layers of mesh. Tests were carried on slab of size 1300*500*60mm ,cement mortar ratio of 1:2 and water cement ratio 0.4 are used. All the cast slab are tested after curing upto 28 days. The results shows that flexural strength of ferrocement slabs are found to be increase when compared with convectional slab. Then the conventional RC beams are casted and tested. The cracked RC beams are strengthened with ferrocement of different layers of mesh of 2,3,4,5,6 layers. The results shows that the maximum values obtained in 2 to 5 layers beyond 5th layer the flexural strength starts to decrease in strength.

Keywords: Ferrocement, Flexural Strength, Mesh.

ICCEI01: TREATMENT OF MUNICIPAL WASTEWATER FROM VELLAKKAL DUMPING SITE BY ELECTROCOAGULATION PROCESS

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Abstract: Electro coagulation is a process that involves dissolution of a metal anode with simultaneous formation of hydroxyl ions and hydrogen gas at the cathode. This study investigated the influence of operating parameters (current density, detention time, pH, electrolyte concentration, electrode type, electrode distance) on COD removal using electro coagulation process (EC) with aluminum and iron electrodes in continuous flow model. Till today researchers are mainly focused on use of electro coagulation system in batch processes. Looking to a large quantity of wastewater, continuous flow regime may offer better solution. The operational parameters including current density, detention time and pH will be optimized forstudy and it is expected for the improved efficiency of COD removal.

Keywords: Electrocoagulation, Continuous flow, Density

ICCEI02: TREATMENT OF LEACHATE FROM AVANIYAPURAM DUMPING SITE USING BATCH REACTOR

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Abstract: Leachate is highly complex and polluted waste water that is produced by the introduction of percolation water through the body of landfill treatment. Leachate treatment is essential as it could threaten the surrounding ecosystem when discharges as it is and when it mixes with groundwater. Landfill leachate is collected from Avaniyapuram Solid Waste Disposal Site. The specific composition of leachates determines its relative treatability. The treatment processes used for landfill leachates often involve a combination of appropriate techniques. They are designed as modular, multi-stage units, capable of coping with the changing leachate characteristics over the years. Several processes, drawn from wastewater and drinking water technology, have been applied for the treatment of landfill leachates, such as anaerobic and/or aerobic biological degradation, chemical oxidation, coagulation-precipitation, activated carbon adsorption, photo-oxidation and membrane processes. Various leachate treatment technologies like coagulation/flocculation, adsorption by activated carbon and precipitation are reviewed and their treatment efficiency were analysed.

Keywords: Leachate, Groundwater, Anaerobic, Aerobic Biological Degradation.

ICCEI03: OPTIMIZING TREATMENT EFFICIENCY OF ROTATING BIOLOGICAL CONTACTOR IN FRUIT JUICE INDUSTRY EFFLUENT

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Abstract: Concentrated fruit juice industries use a wide volume of water for washing and fruit processing, generating a large volume of wastewater. The ultimate goal is to develop a method for converting fruit waste water into reusable water. The industrially produced wastes through various processes such as physical, chemical, biological processes have been implemented on various scales, the trend of minimizing and/or eliminating the pollutions at the source via developing and selecting proper catalytic multiphase reactors is worth to be given proper attention and consideration. In order to achieve such goal in minimizing the wastes, these multiphase reactors must be well understood, studied, scaled up and designed. A rotating biological contactor is a successful wastewater microbial treatment system that has been developed. The rotating biological contactor (RBC) is a unique adaptation of the moving-medium attached growth bio film system which offers an alternative technology to the conventional ASP treatment process. The system was operated at different organic loading rates (OLR's) and hydraulic retention times (HRT's) in order to optimize the RBC performance. The overall removal efficiencies for Chemical oxygen demand and Biological oxygen demand was investigated. However, the effluent quality of COD soluble remained unaffected. Most of the COD was removed in the 1st stage and nitrification took place in the 2nd stage of the two stage system. The higher organic content was present in wastewater from fruit juice industry. The performance of the single stage and two stage operating system was compared.

Keywords: Fruit juice Industries, Catalytic Multiphase Reactors, Microbial Treatment, Bio Film.

ICCEI04: EXPERIMENTAL INVESTIGATION ON SELF CURING CONCRETE

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Abstract: Curing of concrete plays an important role in increasing the compressive strength and durability of the concrete. Concrete is most widely used construction material due to its good compressive strength and durability. Curing of concrete is done for 28 days to develop desired physical and mechanical properties. Self curing is a process by which the hydration of cement occurs because of the availability of additional internal water that is not a part of the mixing water. In self curing concrete super absorbent polymers and shrinkage reducing Admixture are used as self curing agents. It reduces water consumption when compared to conventional concrete.

Keywords: Compressive strength, durability, Self curing, Super Absorbent Polymers, shrinkage.

ICCEI05: COAGULATION PERFOMANCE EVALUATION OF VARIOUS NATURAL AND SYNTHETIC COAGULANTS IN POND WATER

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Abstract: Population growth, rapid urbanization and industrialization lead to increase in disposal of waste water. The current method of water treatment is not sufficient to cope up with the current rate of waste water discharge. The current method uses various chemicals which significantly synthesize byproducts which may pollute the environment and may detoriate the ecosystem at a slow rate. Our study is using various natural and synthetic materials for the process of coagulation which will be eco-friendly and efficient. Our innovative study attempts the investigation of the coagulation performance of some natural & synthetic materials. Powdered materials which passed through 75µm sieve were used in various dose are used to investigate their ability. To remove the suspended particles in wastewater. The attempt on turbidity removal followed by the removal of Total Dissolved Solids (TDS) has been investigated. Effluents from Textile Industry & Sewage Water are planned to be treated by adopting the above removal techniques. Our study can also be done in a small scale manner to utilize water which is to be disposed to farms, toilet, cooling and various other purposes.

Keywords: Sewage Water, Industry Wastewater, Turbidity, Natural, Synthetic Materials.

ICCEI06: CHALLENGES, CONSTRAINTS AND SOLUTION ON AIR POLLUTION IN SMART CITIES (MADURAI)

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Abstract: Challenges, Constraints and Solutions on Air Pollution in Smart Cities. Air Pollution occurs when harmful or excessive quantities of substances including Gases (such as carbon dioxide, carbon monoxide, Sulphur dioxide, nitrous oxides, methane and chlorofluorocarbons). Particulates (both organic and inorganic) and Biological molecules are introduced into Earth's atmosphere. It may cause diseases, allergies and even death to humans; it may also cause harm to other living organisms such as animals and food crops, and may damage the natural or built environment. Both human activity and natural processes can generate air pollution. We analysis Various Challenge, Constraint in the various part of Madurai Smart City and given the solution report for Better living in our Home Town.

Keywords: Air Pollution, diseases, Various Challenge, Smart City.

ICCEI07: REMOVAL OF LEAD AND ZINC IN CONTAMINATED SOIL BY PHYTOREMEDIATION METHOD USING SUNFLOWER PLANT AT DINDUGAL

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Abstract: Heavy metal pollution in agricultural soil is one of the most important environmental problem for the different scientists, recently years. Heavy metal contamination in the agricultural soil is not only pollution but it also has dangerous effect on wild life and human life. The solution of this pollution problem by using classical traditional physical and chemical methods is too expensive.But phytoremediation method is using for removal of heavy metal from agricultural soils, recently. This method is cheaper than classical traditional physical and chemical methods. Most of the conventional remedial technologies are expensive and inhibit the soil fertility; this subsequently causes negative impacts on the ecosystem. Phytoremediation is a cost effective, environment friendly, aesthetically pleasing approach most suitable for developing countries. Despite this potential, phytoremediation is yet to become a commercially available technology in India. Phytoremediation uses plants to clean-up contaminated soil and groundwater, taking advantage of plants natural abilities to take up, accumulate, and/or degrade instituents of their soil and water environments. This paper aims to compile some information about heavy metals of arsenic, lead and mercury (As, Pb, and Hg) sources, effects and their treatment. It also reviews deeply about phytoremediation technology, including the heavy metal uptake mechanisms and several research studies associated about the topics.

Keywords: Heavy metal, Agricultural Soil, Groundwater, Phytoremediation.

ICCEI08: WASTEWATER TREATMENT BY EFFLUENT TREATMENT PLANTS

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Abstract: The development of innovative technologies for treatment of wastewaters from various industries is a matter of alarming concern for us. Although many research papers have been reported on wastewater pollution control studies, but a very few research work is carried out for treatment of wastewater of steel industries, especially in reference to development of design of industrial effluent Treatment Plants (ETP) system. The whole technologies for treating industrial wastewater can be divided into four categories: - Chemical, Physical, Biological and mathematical approaches. The purpose of Environmental Impact Assessment (EIA) is to identify and evaluate the potential impacts (beneficial and adverse) of development and projects on the environmental system.

Keywords: Effluent Treatment Plants, Environmental Impact Assessment.

ICCEI09: REMOVAL OF MICROPLASTICS FROM WATER

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Abstract: Removal of microplastics from water was studied using extraction with oil. The aim of the project was to remove microplastics from water using an organic medium, and to analyse the amount of microplastics in the media involved. The separation of different microplastic types was done by conducting experiments in the laboratory. The microplastics were made by grinding and sieving plastics with a grinding machine before adding them to water and oil, which serves as the organic medium. The resulting solution then underwent separating funnel method for separation into two phases. The water phase was filtered in order to know the amount of microplastics in the water medium. The analysis of the amount of microplastics in the water medium was done by weighing the mass of the filter paper containing the microplastics substrate after drying. Replicate experiments and measurements were done. Results show that microplastics could be successfully extracted from water by the filtration method. This observation was supported by the results of the quantitative analysis, which indicate that an organic medium can be used to clean high density microplastics to some degree.

Keyword: Microplastic, Filtration, Organic Medium, Water Medium

ICCEI10: THE REMOVAL OF MALACHITE GREEN DYE FROM AQUEOUS SOLUTION BY ADSORPTION ON GULMOHAR SHELL

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Abstract: The objective of this work is the study of adsorption of dye solution methylene blue using low cost adsorbent like gulmohar shell powder. Liquid phase adsorption experiments were conducted. Batch adsorption studies are carried out be observing the effect of experimental parameters, namely amount of adsorbents, dye concentration and contact time. Optimum conditions for dye removal are studied like contact time required, amount of adsorbent and dye concentration. Spectrophotometric technique was used for the measurement of concentration of dye before and after adsorption.

Keyword: Adsorption, Gulmohar Shell, Dye Solution Methylene Blue, Dye Removal.

ICCEI11: TREATING DOMESTIC WASTE WATER USING AQUAPONIC

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Abstract: Aquaponic and Hydroponic; Aquaponic refers to any system that combines conventional aquaculture (raising aquatic animals such as prawns, nails and fishes) with hydroponics (cultivating plants in water) in symbiotic environment. They both use nutrient rich water that's highly oxygenated to bathe the plants roots continuously and in both the systems, plants see better growth rates in comparison with those that are grown in soil. An aquaponic tank is designed by treating domestic waste water is stocked with Tilapia fish (Oreochromis niloticus) and hydroponics species consist of tomato (Lycopersiconesculentum), while maize (Zea mays) and spring onions (Allium Fistulosum). Basically an aquaponic system water from an aquaculture system is fed into a hydroponic system where the by products are broken down by nitrifying bacteria initially into nitrites and subsequently into nitrates which are utilized by the plants as nutrients and then water is recirculated back to the aquaculture system. Nitrogen recovery, pH, fish growth, DO, TDS and growth level of plant species in aquaponic and hydroponic system are determined at the end of the study.

Keyword: Aquaponic, Hydroponic, Plant Species, Aquaculture.

ICCEI12: DETERMINATION AND TREATMENT OF FLOURIDE IN TEMPLE TANK BY ADSORPTION USING CITRULLUS LANATUS

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Abstract: The increasing industrialization, urbanization and developmental activities, to cope up with the population explosion have brought inevitable water crisis. The health of lakes and their biological diversity are directly related to health of almost every component of the ecosystem. Monitoring of water quality is the first step that can lead to management and conservation of aquatic ecosystems. The physio-chemical parameters of two temple tanks Thiruparangundram and Vandiyur mariamman kovil Temple tank in Madurai to arrive at certain conclusions of different physico-chemical parameters and to suggest ways and means for remedies of its variation, from the detailed study in two temple tanks. The studied parameters are pH, Conductivity, Turbidity, DO, BOD, COD, Chlorine, TDS and Fluoride. In both tanks, the fluoride exceeded the permissible limit. The excess fluoride was determined and will be remediated by adsorption process. The watermelon seed (Citrullus Lanatus) is to be used as adsorbent. In different height the adsorbent will be packaged and the experiment is to be done to identify the treatment efficiency of adsorbent.

Key Words – Temple tank, Adsorption, Citrullus Lanatus

ICCEI13: TREATMENT OF PERCHLORATE CONTAMINATION IN GROUNDWATER FROM FIREWORK INDUSTRY AROUND SIVAKASI BY ADSORPTION TECHNIQUE

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Abstract : Perchlorate (ClO_4^-) is a strong oxidizer and has gained significant attention due to its reactivity, occurrence, and persistence in surface water, groundwater, soil and food. The primary source of perchlorate is the ammonium salt. Perchlorate is the oxidizer ingredient used in rockets, missiles, medicine, matches, and pyrotechnics. Perchlorate causes great health concerns to the human and the environment. Potassium perchlorate salts are soluble in water and dissociate into perchlorate anion and cation. Perchlorate is used in Firecrackers because it is the oxidizing component of Flash Powder. The following study was carried out to assess the Perchlorate contamination in the water samples and the adsorption of perchlorate using locally available material. The water samples were collected from Sivakasi block of Virudhunagar District since the firework industries are predominant in the study area. Chromatographic techniques were used to detect trace level of perchlorate in the collected water samples. The adsorption process was done by using low cost naturally available material such as activated dates seed powder in different size and at different temperatures to remove the perchlorate from the water samples and to know the efficiency of the column material. This adsorbent material could be used potentially for the adsorption of other water contaminating surfactants.

Key words: Perchlorate, Chromatography, Adsroption Process, Column study

ICCEI14: ENVIRONMENTAL POLLUTION: ITS EFFECTS ON LIFE AND ITS REMEDIES

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Abstract: Environment pollution is a wide-reaching problem and it is likely to influence the health of human population is great. This paper provides the insight view about the affects of environment pollution in the perspective of air pollution, water and land/soil pollution. Diverse in nature are caused by man's interaction with nature for exploits in a number of ways. The increasing population, Urbanization and Industrial growth are causing serious environmental challenges worldwide. The major air pollution sources include transportation and petrochemical based industry

Keywords: Environmental Pollution, Particulate matter, Petrochemical

ICCEI15: INTEGRATED COAGULATION AND ZEOLITE PROCESS FOR TREATING RO REJECT WATER

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Abstract: Reverse osmosis (RO) has been commonly used in water recycling plants and produces as a by-product a concentrated brine (or rejection) flow. In this study the coagulation performance of a natural material like gooseberry seeds. Powdered materials which passed through 75µm sieve were used in various dose are used to investigate their ability. The removal of suspended particles as a function of time, dose & initial turbidity were explored. This study attempts the investigation of the coagulation performance of some natural seed of Gooseberry. The removal of suspended particles as a function of time, dose & initial turbidity arte explored. The attempt on turbidity removal followed by the removal of Total Dissolved Solids (TDS) has been envisaged. To remove the suspended particles in RO reject water was treated by coagulation and the color and suspended solids created by coagulation process was removed by zeolite process. The two integrated process were used in this process. The attempt on turbidity removal followed by the removal of Total Dissolved Solids (TDS) has been envisaged. The surface nature of coagulant was characterized by SEM and XRD.

Key words: Reverse osmosis, Coagulation, Zeolite Process

ICCEI16: EXPERIMENTAL ANALYSIS OF ADSORPTION OF SYNTHETIC COPPER SOLUTION USING LOCAL WASTE BAMBOO, CASHEW NUT SHELLS AND ACTIVATED CARBON

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Abstract: Emission of heavy metals in ground and surface waters can pose serious environmental problems affecting both human and wild life. For treatment and decontamination of polluted water, several chemical and physical techniques are available of which adsorption is one of the most efficient and widely used. In this project the adsorption techniques removal of copper ions from aqueous solutions by activated bamboo stem carbon was investigated. Several adsorption parameters were considered including the initial copper ion concentration, contact time, pH of solution, temperature, effect of bamboo stem concentration and adsorption isotherm models. The adsorption mechanism was best described using the second order model. It was concluded that activated bamboo stem may be efficiently used for the removal of heavy metals from aqueous solutions.

Keywords: Heavy metals, Adsorption, Copper Ion, Aqueous Solutions

ICCEI17: ADVANCED CONSTRUCTION TECHNIQUESFOR ECO-BUILDING

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Abstract: Eco buildingis also sometimes known as "sustainable building" or "Bioclimatic building "or "green building", although there are slight differences in the definitions. The practice of bioclimatic building can lead to benefits including reduced operating costs by increasing productivity and using less energy and water, improved public and occupant health due to improved indoor air quality, and reduced environmental impacts. Bioclimatic building is an essential component of the related concepts of sustainable design, sustainable development. Low cost housing involves the construction using special type of bond like rat trap bond for brick masonary and filler slab techniques for roof slabs. The methods give a difference of 20-30 % of cost variation between the low cost house and the traditional building. Other than these methods many such new technologies are adopted to make the building rich in all aspect and economical cost wise. This paper discusses some environment-friendly and low cost building techniques. The concept of bioclimatic building deals with the maximum usage of the naturally available resource in the building which will make the construction of building economical. Introducing low cost construction techniques for bioclimatic building is to provide the required durability which are available in traditional building in an economical way. The paper concludes by emphasizing the importance of low cost construction methods and consideration of the environmental aspects which leads to an economical and effective construction of a building with full efficiency.

Keywords: Sustainable Building, Green Building, Environmental Impact, Durability.

ICCEI18: PERMACULTURE - A HOLISTIC PLAN FOR HUMANKIND

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Abstract: Permaculture is a philosophy of working with nature. It covers the three sides of humankind Society, Economy and Environment. It is a design science that has three visions earth care, people care and future care. Permaculture farming had lots of benefits zero-cost water, more with less, saves fossil fuels and saves biodiversity. There were 12 golden principles for Permaculture. Permaculture seeks to minimize waste, human labour, and energy input and to maximize benefits. Permaculture draws from several disciplines including Organic farming, Applied ecology, Sustainable development, Agroforestry and integrated farming. The paper concludes the importance of saving the human race with the help of nature.

Keywords: Agroforestry, Applied ecology, Sustainable development, Zero-cost water, Fossil Fuels

ICCEI19: PRODUCTION OF MILKY MUSHROOM SPAWN AND COMPARING THE CULTIVATION OF MILKY MUSHROOM USING RICESTRAW, SUGARCANE BAGGASE, VERMICOMPOST AND KITCHEN COMPOST

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Abstract: Indian agriculture will continue to be main strength of Indian economy. We have achieved food security by producing over 200 million tonnes of food grains. Microbiology plays major role in developing species. The important Reduce, Reuse, Recycle-these 3R's are provided by the compost. The use of chemical fertilizer contributes largely to deterioration of environment. In this project the milky mushroom spawn is cultivate during microbiology technique and compare the cultivation of milky mushroom which has been grown using rice straw, sugarcane baggase, vermicompost and kitchen waste compost. Only natural materials are used for growth of mushroom. In conclusion the growth of mushroom in different substrate materials is compared and efficient way is depicted.

Keywords: Milky Mushroom, Microbiology, Vermicompost, Kitchen Waste Compost.

ICCEI20: RECYCLING AND REUSE OF BUILDING WASTE IN CONSTRUCTION

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Abstract: The building industry has not only become a major consumer of materials. it has also become a source of pollution. The article focuses on reuse building materials as a way for environment protection and sustainable development. There are many methods used to reduce waste and increase profits through salvage, reuse and recycling of construction waste. Reduce, Reuse, Recycle are part of waste heirarchy guidance tool which ranks waste management options for best environment and energy consumption. It aims to extract from products the maximum practical benefits and generate minimal waste. The priorities in the hierarchy are based on sustainability. This article demonstrates that alternatives to modern building materials are available.

Keywords: Waste Management, Demonstrate, Modern Building Materials.

ICCEI21: CARBON SEQUESTRATION AND PRODUCTION OF BIOMASS USING ALGADISK

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Abstract: Global warming has reached an alarming level due to increase in CO2 concentration in the atmosphere and industries contribute to nearly 33% of global CO2 emission . The present study is to investigate the feasibility of using chlorella sorokiniana for CO2 seqestration from industrial flue gas using ALGADISK technology . Generally, the flue gas emitted from industry contains nearly 10-15% of CO2 . The ALGADISK reactor will be scalable, automatic, and it can be used to capture CO2 both in liquid and gas phase along with effluent treatment simultaneously . Capturing CO2 in both phase can reduce the GHG emission by 30-40%, achieve effective nutrient removal of 23% in case of TP and 76% in case TN and it also increase the biomass production . The biomass production Ranges from 5.5 g/m2/day to 31 g/m2/day . Biomass is a resource that can be utilized as Biofuel which in turn can help to enhance and safeguard energy security by reducing the world's reliance on fossil energy source . Using Dairy waste water for microalgal culture can aid their growt with nutrient in it thereby serving as a nutrient removal treatment . Therefore, the effluent was collected from nearby dairy industry and characterized which can be used in this study of microalgae growth as suspended culture in growth in ALGADISK.

Keyword: ALGADISK Technology, Microalgai Culture, Biomass Production.

ICCEI22: WATER POLLUTION: EFFECT, PREVENTION AND CLIMATIC IMPACT

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Abstract: The stress on our water environment as a result of increased industrialization, which aids urbanization, is becoming very high thus reducing the availability of clean water. Polluted water is of great concern to the aquatic organism, plants, humans, and climate and indeed alters the ecosystem. The preservation of our water environment, which is embedded in sustainable development, must be well driven by all sectors. While effective wastewater treatment has the tendency of salvaging the water environment, integration of environmental policies into the actor firms core objectives coupled with continuous periodical enlightenment on the present and future consequences of environmental/water pollution will greatly assist in conserving the water environment.

Keywords: Chemical, Microbial Pollutants, Sustainable Development, Climate Change.

ICCEI23: ASSESSMENT OF GROUNDWATER QUALITY IN AND AROUND SRIVILLIPUTTUR TOWN

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Abstract: Inadequate and improper management of municipal solid waste disposal site pose serious environmental threats to their surrounding and nearby resident due to groundwater contamination, pollution problems and health risk. The present investigation was carried out to assess the groundwater contamination due to dumping of waste at landfill in srivilliputtur town. Srivilliputtur municipality includes 33 wards and population of more than 85000 peoples. Waste dumped in the dumpsite is 24 MT. solid wastes are openly dumped in the dumpsite. These practice leads to the infiltration of leachate to the groundwater. Water samples from wells were collected during febreury 2020 and were analyzed for the water quality parameters such as pH, BOD,COD, chloride, alkalinity, total suspended solids(TSS), electrical conductivity(EC), total dissolved solids(TDS), total solids(TS), dissolved oxygen(DO). The results shows that water samples of wells were contaminated. Therefore this landfill is threat for environment as well as for the local people and the local authority must pay their attention to prevent further contamination of the groundwater in this area.

Keywords: Groundwater, Landfill, Water Quality, Srivilliputtur

ICCEI24: TREATMENT OF DIARY WASTEWATER BY MOVING BED BIOFILM REACTOR

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Abstract: developing countries such as India are undergoing a massive migration of their population from rural to urban centers. New consumption patterns and social linkages are emerging. India will have more than 40 percent, i.e. over 400 million people, clustered the city over the next thirty years (UN 1995). It is widely known that water is the finite resource. Unfortunately, in the world we have taken water for granted as it is provided to US instantly through water fountains sinks, showers, toilet, bowls and even decorative source like fountain and manmade ponds. the wastewater reuse has emerged as a way to reduce freshwater reuse and instill in the public an awareness of water conservation. In industry particularly diary industry the large amount of used for food processing and huge amount of water comes as wastewater. This wastewater had particular advantage that is a large source with low organic content. This study considers the various waste management practice through this water treatment technology, at Avin food processing industry, KK Nagar the treatment of wastewater was processed by adopting moving bed bio reactor. Here we are going to analyze the characteristics of liquid waste and provide a cost effective technology for the treatment of wastewater and also to focus on the energy recovery from the solid waste obtained in the study area.

Keywords: Diary Wastewater, Moving Bed, Biofilm Reactor

DEPARTMENT

OF

COMPUTER SCIENCE AND ENGINEERING

ICCSE102: A SECURE CLOUD-OF-CLOUDS SYSTEM FOR STORING AND SHARING BIGDATA

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Abstract:A cloud-backed storage system capable of storing and sharing big data in a secure, reliable, and efficient way using multiple cloud providers and storage repositories to comply with the legal requirements of sensitive personal data. It implements three distinguishing features: it does not require trust on any single entity, it does not require any client-managed server, and it efficiently deals with large files over a set of geo-dispersed storage services. Besides that, we developed a novel Byzantine-resilient data-centric leasing protocol to avoid write-write conflicts between clients accessing shared repositories. With recent demand in cloud computing has raised security concerns for both service providers and consumers. The information might be personal or organizational data stored in the cloud is facing potential threat from hackers and there is a need to identify the possible security holes that can be made more secure and robust. Our work in this field will enable security theorists and researches to know the active threats that users or service providers are concerned and do analysis about the different security tools and models proposed. Evaluate using micro and application-based benchmarks simulating representative workflows from bioinformatics, a prominent big data domain. The results show that our unique design is not only feasible but also presents an end-to-end performance of up to 2.5x better than other cloud-backed solutions.

ICCSE104: DYNAMIC AND ENERGY EFFICIENT SECURITY FOR IOT BASED ON TRUST

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Abstract: Internet of things is converging with all domains of technology. Security is becoming more challenging due to the constraints of the devices that are connected in IOT. IOT connects multiple device types with different resource levels to address a common cause. Static security services will consume energy even if there is no need for security and cause waste of resources. Lack of security will lead to attacks which may even compromise sensitive information about the environment. In this paper, we propose an Energy Efficient Dynamic security for IoT based on the trust of a node. Cryptographic algorithms can provide better security in communication but consumes lot of resources. Our solution dynamically evaluates the trust and adopts cryptographic measures when needed. The results prove low energy consumption due to its dynamic behavior and still the nodes are secure in communication.

Keywords:Trust in IoT,Energy Efficient trust,Dynamic Trust

ICCSE105: APPLICATION OF MACHINE LEARNING TECHNIQUES FOR RAINFALL PREDICTION

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Abstract: Weather forecasting for an area where the weather and climate changes occurs spontaneously is a challenging task. Weather is non-linear systems because of various components having a great impact on climate change such as Temperature, Humidity, Wind speed, Water precipitation level and Density of air.Weather forecasting has traditionally been done by physical models of the atmosphere, which are unstable to perturbations, and thus are inaccurate for large periods of time. Since machine learning techniques are more robust to perturbations, this work explores their application to weather forecasting to potentially generate more accurate weather forecasts for large periods of time. The scope of this work is restricted to predicting the rainfall using the weather data for the past periods. Artificial Neural Network (ANN) and a Support Vector Regression (SVR) are proposed to predict the rainfall. This paper exhibits the performance of machine learning techniques for a robust weather prediction purpose.

Keywords:Linear Regression, Support Vector Regression, Artificial Neural Networks, Confusion matrix, Mean Absolute Error, Mean Absolute Percentage Error.

ICCSE110: INTELLECTUAL PROGRESSION TO UPHOLD WATER AND ELECTRIC POWER PREDICAMENT IN AGRICULTURAL TERRESTRIAL

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Abstract: Water use in agriculture is at the core of any confab of water and food security. Now, all over the world people is facing critical water scarcity delinquent as a result of Global warming. Coercion is in place to save and use water resources in proficient way. The purpose of the proposed research work is to extol an insolent cultivation process through Internet of Things (IoT) to utilize and preserve the water and power elements. IoT with a combination of various sensors and actuators can convey a change in modern Agriculture. The proposed work boons an intelligent agriculture field monitoring system which monitors soil moisture (humidity and temperature) with the help of soil moisture sensors and available water levels with the help of Water level sensors. Here the temperature and moisture of the soil are measured. These sensed values are stored in Thing Speak cloud. The saved data will be presented to the user via web application and allow the user to accomplish controlled water supply to the agricultural land.

ICCSE113: MINIMIZING ROUTING INTERRUPTS IN VEHICULAR COMMUNICATION NETWORKS USING SELF CONFIGURING GREEDY ROUTING

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Abstract: Vehicular Ad-Hoc Network (VANET) is a promising technology that enables road-side vehicle-assisted communication between users and infrastructures. The network is dynamic and independent in establishing communication and updating communication routes. Due to the openness of the network, routing, and data traffic handling is a challenging concern as it degrades its performance. In this manuscript, a novel self-configuring greedy routing (SCGR) algorithm is proposed to minimize the impact of congestion and route interrupts. This routing is designed to adapt relay-vehicle communication in the absence of infrastructure. The neighboring vehicles act as a relay in the network for retaining the seamlessness in com. The process of route discovery through a conventional routing protocol is modified with the evaluation of region traffic and neighbor density. Coverage range, distance, and mobility are the factors influencing congestion and routing and therefore, a local fitness evaluation is performed to ensure the lesser impact of the factors over the performance. This fitness function also confines the greedy nature of the routing process and thereby preventing unnecessary route congestion. The performance of the routing algorithm is evaluated through simulation performed using Mat lab. The performance is assessed using the metrics: end-to-end delay, packet delivery ratio, communication overhead, packet loss ratio and beacon messages

Keywords: VANET, SCGR, Routing Process, Routing Interrupts

ICCSE114: SPAMMER DETECTON AND FAKE USER IDENTIFICATION ON SOCIAL NETWORK

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Abstract: Social networking sites engage millions of users around the world. The users' interactions with these social sites, such as Twitter and Facebook have a tremendous impact and occasionally undesirable repercussions for daily life. The prominent social networking sites have turned into a target platform for the spammers to disperse a huge amount of irrelevant and deleterious information. Twitter, for example, has become one of the most extravagantly used platforms of all times and therefore allows an unreasonable amount of spam. Fake users send undesired tweets to users to promote services or websites that not only affect legitimate users but also disrupt resource consumption. Moreover, the possibility of expanding invalid information to users through fake identities has increased those results in the unrolling of harmful content. Recently, the detection of spammers and identification of fake users on Twitter has become a common area of research in contemporary online social Networks (OSNs). In this paper, we perform a review of techniques used for detecting spammers on Twitter. Moreover, taxonomy of the Twitter spam detection approaches is presented that classifies the techniques based on their ability to detect: (i) fake content, (ii) spam based on URL, (iii) spam in trending topics, and (iv) fake users. The presented techniques are also compared based on various features, such as user features, content features, graph features, structure features, and time features. We are hopeful that the presented study will be a useful resource for researchers to find the highlights of recent developments in Twitter spam detection on a single platform.

Keywords: Spammer detection, fake identification, OSNs, legitimate

ICCSE115: 3D VISUALIZATION OF SKIN CANCER USING ULTRA-HIGH- RESOLUTION MILLIMETER-WAVE IMAGING

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Abstract: The goal of this study is to develop a new skin imaging modality which addresses the current clinical need for a non-invasive imaging tool that images the skin over its depth with high resolutions while offering large histopathological-like contrasts between malignant and normal tissues. We demonstrate that by taking advantage of the intrinsic millimeter-wave dielectric contrasts between normal and malignant skin tissues, ultra-high-resolution millimeter-wave imaging (UH-MMWI) can achieve three-dimensional, high-contrast images of the skin. In this work, an imaging system with a record-wide bandwidth of 98 GHz is developed using the synthetic ultra-wideband millimeter-wave imaging approach, a new ultra-high-resolution imaging technique recently developed by the authors. Twenty-one non-melanoma skin cancer (NMSC) specimens are imaged and compared with histopathology for evaluation. A programmable measurement platform is designed to automatically scan the tissues across a rectangular aperture plane. Furthermore, a novel frequency domain imaging algorithm is developed to process the recorded signals and generate an image of the cancerous tissue. The high correlations achieved between MMWI images and histological images allow for rapid and accurate delineation of NMSC tissues. The millimeter-wave reflectivity values are also found to be statistically significant higher for cancerous areas with respect to normal areas. Since MMWI does not require tissue processing or staining, it can be performed promptly, enabling diagnosis of tumors at an early stage as well as simplify the tumor removal surgery to a single-layer excision procedure.

ICCSE121: SECURE MULTI-OWNER DATA SHARING FOR DYNAMIC GROUPS IN THE CLOUD

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Abstract: The major aim of the Secure Multi-Owner data sharing method is a secured multi-owner data sharing scheme. It implies that any user in the group can securely share data with others by using un-trusted cloud. This scheme is able to support dynamic groups. To allow new granted users to directly decrypt data files uploaded before participation without contacting the data owners. To perform extensive simulations to demonstrate the efficiency in terms of storage and computation overhead. To access the cloud, a user needs to compute a group signature for his/her authentication. To provide security and privacy-preserving access control to users, which guarantee any member in a group to anonymously utilize the cloud resource.To provide an economical and efficient solution for sharing group resource among cloud users.

ICCSE122: DETECTION AND DIAGNOSIS OF DENTAL CARIES USING SUPPORT VECTOR MACHINE (SVM)

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Abstract: In this paper, we propose a suitable textural feature for diagnosis of dental caries in digital radiographs. The dental diagnosis system consists of Laplacian filter for image sharpening, adaptive threshold and morphological operations for segmentation, and support vector machine (SVM) as a classifier. In segmented image, textural features are extracted, and applied to the classifier, to classify the image as caries or normal. Experimental results indicate that GLCM (Grey Level Co-occurrence Matrix) and GLDM (Grey Level Difference Method) textural features are giving better performance measures as compared to other types of textural features with an accuracy of 96.88%, sensitivity of 1, specificity of 0.8667 and precision of 96.08%. The data were analyzed by Analysis of Variance (ANOVA), at a significant level of 5%. This result indicates that the interaction offeature extraction methods on performance measures are significant. Hence, GLCM or GLDM features provide reliable decision support for dental caries diagnosis.

Keywords :Dental radiography, computer aided diagnosis, dental caries, textural analysis.

ICCSE123: COMBINED REGION GROWING AND ENSEMBLE CLASSIFICATION OF SPLEEN SEGMENTATION IN MRI IMAGES

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Abstract: This project proposes an automatic classification method based on region growing in liver lesions using image processing techniques. This method can yield spatial and temporal features in the arterial phase, portal phase, and post-vascular phase, as well as max-hold images. Spleen region segmentation is done by Region growing technique. The Spleen region are classified as benign or malignant liver tumor using Ensemble Classifier with a combination of selected texture features. The selected features are important for classifying liver tumor, especially for the benign and malignant classifications.

ICCSE124: PRIVACY-PRESERVING VERIFIABLE OUTSOURCED COMPUTATION FOR OPTIMAL LOCATION SELECTION

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Abstract: Optimal location selection is a common location-based analysis that seeks the best location to open a new facility optimizing an objective function given a set of existing facilities and a set of customers. However, location data owners cannot share their data with other businesses, mainly due to privacy and legal concerns. In this project, proposes privacy-preserving verifiable outsourced computation solutions, in which location-based queries can be answered by data owners without sharing their data with other businesses and without accessing and modifying sensitive information such as the customer list of the businesses that send the query. Our proposed verification scheme is universally applicable to all types of polynomial computations and allows the users to outsource new location data at any time. The key characteristic of our design is that the proposed scheme is homomorphically verifiable for any general polynomial function. In our proposed scheme, the verification cost for the client is independent with either the input size or the polynomial size so that it scales well in practice. This system, formally prove the correctness and soundness of our scheme and conduct numerical analysis and evaluation study to validate its high efficiency and scalability.

ICCSE125: SECURING TEXT & IMAGE PASSWORD FOR CONSUMER SMART DEVICES USING THE COMBINATIONS OF G-RAT WITH IMPROVED ADVANCED ENCRYPTION STANDARD

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Abstract: Security is the main aspect for any application. The main aim is to protect the system from the illegitimate users. The proposed system is considered for study and two way authentication techniques are applied on it. Two way authentication techniques are used to protect the data by using both the text and graphical passwords. Graphical password scheme is used named as g-RAT. On both the text as well as graphical password, Improved Advanced Encryption Standard (IAES) algorithm is applied to provide better security. It means system provides two step authentications with the encryption technique. In IAES, one random generated key called as SALT is added with AES key. By adding the Salt key with AES the number of combinations of attack will increase. Even if the database is compromised then also attacker cannot gain the actual text password and g-RAT of the graphical password. g-RAT is used which generates a randomized set of images every time a user tries to authenticate him/herself by maintaining the security and usability at the same time. The gRAT technique is also tested by user-centric evaluation in terms of security, usability, usefulness, and utility, and the experimental results show that the proposed technique is more secure and useful in the real-life authentication applications.

ICCSE126: IDENTITY-BASED AUDITING FOR SHARED CLOUD DATA WITH EFFICIENT AND SECURE IMAGE BASED SENSITIVE INFORMATION HIDING

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Abstract: With cloud storage services, users can remotely store their data to the cloud and realize the data sharing with others. Remote data integrity auditing is proposed to guarantee the integrity of the data stored in the cloud. In some common cloud storage systems such as the electronic health records system, the cloud file might contain some sensitive information. The sensitive information should not be exposed to others when the cloud file is shared. Encrypting the whole shared file can realize the sensitive information hiding, but will make this shared file unable to be used by others. How to realize data sharing with sensitive information hiding in remote data integrity auditing still has not been explored up to now. Here, proposes an efficient data integrity auditing scheme that realizes data sharing with image based sensitive information hiding in this project. The scheme is based on the LSB based data hiding algorithm which provides a fixed embedding capacity for images to embed authentication data. In this scheme, a sanitizer is used to sanitize the data blocks corresponding to the sensitive information of the file and transforms these data blocks' signatures into valid ones for the sanitized file. These signatures are used to verify the integrity of the sanitized file in the phase of integrity auditing. Meanwhile, the proposed scheme is based on identity-based cryptography, which simplifies the complicated certificate management. The security analysis and the performance evaluation show that the proposed scheme is secure and efficient.

ICCSE127: FACE EMOTION RECOGNITION USING KNN CLASSIFIER

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Abstract: Facial emotion recognition is the method of detecting human emotions from facial features. The task of emotion recognition involves the analysis of human expressions in the forms such as texts, audio, or video. Different emotions are detected through the information from facial expressions, body movement, gestures, and speech. Humans often use nonverbal clues such as hand gestures, facial expressions and tone of voice for communication. Human brains can recognize emotions automatically. But Human-computer interfaces are unable to provide the natural interaction to the user and thus software has now been developed that can recognize emotions as well. Hence interactions among human-computer could significantly be recognized from the emotions outcomes. To address the following needs, initially the system is comprised of an image processing stage followed by an emotion recognition stage. In the image processing stage, the subject's face and facial features (eyes, mouth) are extracted using viola jones algorithm. Next, the relevant identifying points are extracted from each facial feature. In the emotion recognition stage, the identifying points are used to classify using KNN classifier and determine the strength of different facial actions. These strengths are then used to determine the subject's displayed emotion.

ICCSE128: LESION DETECTION AND CLASSIFICATION USING CONVOLUTIONAL NEURAL NETWORK FOR DIABETIC RETINOPATHY SCREENING

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Abstract: Automatic telemedicine system for computer-aided screening and grading of diabetic retinopathy depends on detection of retinal lesions in fundus pictures during this paper. multiple instance learning (MIL) has shown an advantage over supervised learning methods for automatic detection of diabetic retinopathy (DR): only the image-level annotation is needed to achieve both detection of DR images and DR lesions, making more graded and de-identified retinal images available for learning. However, the performance of existing studies on this technique is limited by the use of handcrafted features. Here we propose a deep MIL method for DR detection, which jointly learns features and classifiers from data and achieves a significant improvement on detecting DR images and their inside lesions. Specifically, a pre-trained convolutional neural network is adapted to achieve the patch-level DR estimation, and then global aggregation is used to make the classification of DR images. Further, we propose an end-to-end multi-scale scheme to better deal with the irregular DR lesions.

ICCSE129: IOT BASED REAL TIME WIRELESS SENSOR NETWORK FOR CONTAMINATION DETECTION IN DRINKING WATER DISTRIBUTION SYSTEM

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Abstract: The rapid growing of the wide urban residential areas imposes the expansion as well as the modernization of the existing water supply facilities. Along with this one more problem is identified in the water supply channels, some people use ½ HP to 1 HP pump to suck the water directly from the channel of their home street. Process automation system based upon utilization of an industrial PLC and PC systems including all the network components represents the best way to improve the water distribution technological process. The water theft can be best monitored by the flow variations given by the flow sensors mounted on the channels. The system includes Remote Terminal Units – RTU, specific transducers and actuators distributed on a wide geographical area and control and power panels for the pump stations. The reliable instrumentation connected to PLC or RTU assure real time monitoring of the main technological parameters of large water distribution networks. The data acquired of SCADA system (Supervisory Control and Data Acquisition) represent the support for optimization of the process and data- driven Decision Support System.. Our approach is based on the development of low cost sensor nodes for real time and in-pipe monitoring and assessment of water quality on the fly. The main sensor node consists of several in-pipe electrochemical and optical sensors and emphasis is given on low cost, lightweight implementation, and reliable long time operation. Such implementation is suitable for large scale deployments enabling a sensor network approach for providing spatiotemporally rich data to water consumers, water companies, and authorities. Extensive literature and market research are performed to identify low cost sensors that can reliably monitor several parameters, which can be used to infer the water quality.

ICCSE130: INCREASING ENERGY EFFICIENCY OF MOBILE DEVICES IN MOBILE CLOUD COMPUTING ENVIRONMENT

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Abstract: Mobile Cloud computing is a recent and upcoming technology can significantly minimize the application time and maximize energy saving .Smart mobile devices are gaining enormous popularity due to their portability and compactness.Mobile cloud computing rectify the defects of smart mobile devices such as limited battery energy and insufficient storage space. Mostly one network application can be decomposed into fine-grained tasks which consist of sequential tasks and parallel tasks. With the assistance of mobile cloud computing, some tasks could be offloaded to the cloud for speeding up executions and saving energy. Maintaining energy conservation the efficiency of energy has become a major problem with increased usage of devices consuming more energy due to mobile cloud computing paradigms allow to offload some tasks to the cloud for execution. To manage this problem task are schedule in both at the mobile device and in the mobile cloud. Task scheduling is taken as the factor to reduce consumption of energy. Tasks can be assigned and scheduled based on the algorithms and so energy can be conserved.

Keywords: Mobile Cloud computing, offloading, Energy efficiency, Task scheduling.

ICCSE131: SENTIMENT ANALYSIS OF NEWS ARTICLES:A LEXICON BASED APPROACH

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Abstract: Modern technological era has reshaped traditional lifestyle in several domains. The medium of publishing news and events has become faster with the advancement of Information Technology (IT). IT has also been flooded with immense amounts of data, which is being published every minute of every day, by millions of users, in the shape of comments, blogs, news sharing through blogs, social media micro-blogging websites and many more. Manual traversal of such huge data is a challenging job; thus, sophisticated methods are acquired to perform this task automatically and efficiently. News reports events that comprise of emotions – good, bad, neutral. Sentiment analysis is utilized to investigate human emotions (i.e., sentiments) present in textual information. This paper presents a lexicon-based approach for sentiment analysis of news articles. The experiments have been performed on BBC news dataset, which expresses the applicability and validation of the adopted approach.

ICCSE132: A HYBRID LEAST SIGNIFICANT BIT (LSB) STEGANOGRAPHY AND CHAOTIC TENT MAP (CTM) BASED CRYPTOGRAPHIC ALGORITHM

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Abstract: Image encryption has been an attractive research field in recent years. The chaos-based cryptographic algorithm is a new and efficient way to develop secure image encryption techniques. This work proposes a secure image encryption scheme, which is based on the chaotic tent map. The proposed methodology is used to hide plain text information in an image which is then encrypted using chaotic tent map (CTM). Image encryption systems based on such map show some better performances. Data hiding is a group of techniques which is used to put a secure data in a host media (like images) with small deterioration in host and also the means to extract the secure data afterwards. Steganography is one such pro-security innovation in which secret data is embedded in a cover image. The chaotic tent map is modified to generate chaotic key stream that is more suitable for image encryption. The proposed methodology uses information hiding in multimedia data and then image encryption is performed using chaos-based cryptographic algorithm. Thus it improves reliability and security with faster and efficient storage, transfer and processing of digital data. It can be concluded that the proposed scheme will lead to better security and efficiency. The performance and security analysis of the proposed image encryption scheme is performed to validate the proposed method.

ICCSE133: ON $\delta g^{\ddot{}}$ CLOSED SETS IN TOPOLOGICAL SPACES

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Abstract: This paper is devoted to introduce and study a new class of generalized closed sets, namely δg¨ - closed sets and δg¨ - open sets in Topological spaces. We prove that this class of δg¨ -closed sets lies between the class of δ -closed sets and the class of g - closed sets. Also we find some relations between δg¨ - closed sets and already existing closed sets. Further we discuss the characterisation and obtained their applications.

Keywords and Phrases : ¨g -open, generalized closed sets, ˆg -closed, δ -closure.

ICCSE134: SHORT-SURVEY ON LOCATION WITH WEB SERVICERECOMMENDATION USING COLLABORATIVE ANDCONTENT-BASED TECHNIQUES

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Abstract: With the help of the search engines on the internet, people are searching the needed information things based on their requirement in their regular life. One kind of recommendation system is broadly used to find the related products, information and services for individual interests. The recommendation techniques are working through the User's profile and behavior of previous searches.RS (Recommendation Systems) are used to help the users to find the appropriate items from the broad collection mode i.e.) Internet. One of the main technique used in the recommender system is Location based Recommendation. This system based on the location of the web services. This paper provides the overview of the RS and its techniques and also location based recommendations to find the suitable web services.

Keywords: Recommendation System (RS), collaborative filtering, content-based recommendation, and hybrid approach, cold start problem.

ICCSE136: AN EXTENDED CONTROL FRAMEWORK FOR TRUST BASED PRIVACY-PRESERVING PHOTO SHARING IN ONLINE SOCIAL NETWORKS

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Abstract: Online social networks have now become the most popular platforms for people to share information with others. Along with this, there is a serious threat to individuals' privacy. One privacy risk comes from the sharing of co-owned data, i.e., when a user shares a data item that involves multiple users, some users' privacy may be compromised, since different users generally have different opinions on who can access the data. How to design a trust management mechanism to deal with such a privacy issue has recently attracted much attention. In additionally considering Security, integrity, non-repudiation, confidentiality, and authentication services are the most important factors in data-security. Maintaining Confidentiality and Security for critical data are highly challenging, especially when these data are stored in memory or send through the communication networks. Data encryption technique tries to convert data to another data that is hard to understand. In this project, propose an extended control framework for trust-based privacy preserving mechanism for sharing such co-owned photos.. The chaotic image encryption can be developed by using properties of chaos including deterministic dynamics, unpredictable behavior and non-linear transform. The trust values between users are used to weight users' opinions, and the values are updated according to users' privacy loss. Moreover, the user can make a trade-off between data sharing and privacy preserving by tuning the parameter of the proposed mechanism. Results demonstrate that the trust-based mechanism can encourage the user to be considerate of others' privacy, and the proposed bandit approach can bring the user a high payoff.

ICCSE140: HOMOMORPHISM IN BIPOLAR VALUED MULTI FUZZY SUBGROUPS OF A GROUP

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Abstract: In 1965, Zadeh introduced the notion of a fuzzy subset of a set, fuzzy sets are a kind of useful mathematical structure to represent a collection of objects whose boundary is vague. Since then it has become a vigorous area of research indifferent domains, there have been a number of generalizations of this fundamental concept such as intuitionistic fuzzy sets, interval-valued fuzzy sets, vague sets, soft sets etc. In this paper, an algebraic nature of Bipolar valued multi fuzzy subgroup under homomorphism and anti-homomorphism is studied and prove some theorems are introduced.

ICCSE141: SMART REVERSE PARKING USING ARM 11 PROCESSOR

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Abstract: Every year around 300 people are killed and 18000 are injured by drivers who are backing up, usually in driveways or parking lots. When parking space available is tight or not sufficient in that reverse parking is used. The Raspberry Pi will act as brain to control this system which uses Python programming language. This system is successfully implemented as prototype system. Reverse parking is more convenient because it can park car with minimum dimensions. In previous years various method have been proposed such as the idea of using analog circuits such as potentiometers to control the camera, Which may cause inaccurate calibration of camera. The system makes use of the ultrasonic sensor to calculate the distance in the parking area.

Keywords:Raspberry pi, IOT, Synchronization, VNC Viewer, Ultrasonic Sensor, Python, and HC-SR04.

ICCSE142: EFFICIENT OBLIVIOUS DATA STRUCTURES FOR THE DATABASE SERVICES ON THE NETWORK SECURITY

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Abstract: An anonymous Single Sign-on (ASSO) scheme allows users to access multiple services anonymously using one credential. In this new ASSO scheme, where users can access services anonymously through the use of anonymous credentials and unlink ably through the provision of designated verifiers. The verifiers cannot link a user's service requests even if they collude. When a designated verifier is unavailable, a central authority can authorize new verifiers to authenticate the user on behalf of the original verifier.The central verifier can also be authorized to trace the user's service requests. This scheme is formalized along with a security proof and provides an empirical evaluation of its performance. This scheme can be applied to smart ticketing where minimizing the collection of personal information of users is increasingly important to transport organizations due to privacy regulations such as General Data ProtectionRegulations. Index Terms-Proxy Verification, Anonymous Authentication, Designated Verification, Service Disruption.

ICCSE143: MARITIME MULTI-HOP WIRELESS NETWORK [SHIP] USING TWO STATE ROUTING PROTOCOL

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Abstract: Problem Statement: The expensive satellite communication currently accessible from ships is ill equipped to meet the needs of a growing number of seafaring Internet users. In order to provide cheap and high-speed Internet access to ships, the radio coverage of existing broadband networks can be extended through a multi-hop network that provides wireless links between neighboring ships. One of the most important issues in such networks is the appropriate choice of a routing protocol that provides efficient and reliable communication. In this paper, a maritime two-state routing protocol for a multi-hop ship network is proposed that provides efficient and reliable communication with a minimum of overhead. The maritime path loss model considered for simulations and the mobility model used in this paper represent real traffic of ships. In this paper, the proposed routing protocol is compared to the leading alternatives and simulation results are presented to quantify the performance.
Results: The proposed work is implemented in NS2 and the performance metrics like throughput, packet delivery ratio; delay and bandwidth are measured and compared with existing protocol. Conclusion/Recommendations: This System shows that our gateway selection to improve the quality of service, network throughput and packet delivery ratio with low energy power consumption per node.
Keywords :VANET, QoS, gateway selection, GMA

ICCSE144: TRANSLATIONS OF BIPOLAR VALUED MULTI FUZZY SUBHEMIRINGS OF A HEMIRING

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Abstract: In 1965, Zadeh introduced the notion of a fuzzy subset of a set, fuzzy sets are a kind of useful mathematical structure to represent a collection of objects whose boundary is vague. Since then it has become a vigorous area of research in different domains, there have been a number of generalizations of this fundamental concept such as intuitionistic fuzzy sets, interval-valued fuzzy sets, vague sets, soft sets etc. In this paper, some translations of bipolar valued multi fuzzy subhemiring of a he miring are defined and studied and some translation theorems are introduced.

ICCSE145: DNA COMPRESSION USING RLEAND HUFFMAN ENCODER

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Abstract: Recently, the ever-increasing growth of genomic sequences DNA or RNA stored in database poses a serious challenge to the storage, process and transmission of these data. Hence effective management of genetic data is very necessary which makes data compression unavoidable. The current standard compression tools are insufficient for DNA sequences compression algorithm based on One-Bit Compression method(OBComp) that will compress both repeated and non-repeated sequences. Unlike direct coding technique where bits are assigned to each nucleotide resulting compression ratio of 2 bits per byte (bpb),OBComp used just a single bit 0 or 1 to code the two highest occurrences nucleotides. The positions of the two others are saved. To further enhance the compression, modified version of Run Length Encoding technique and Huffman coding algorithm are then applied respectively. The proposed algorithm has efficiently reduced the original size of DNA sequences. The easy way to implement our algorithm and the remarkable compression ratio makes its use interesting.

ICCSE146: PRODUCT REVIEW "SENTIMENTAL ANALYSIS" USING PYTHON

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Abstract: Now a day's more and more people are buying products online. In order to enhance customer shopping experience, it has become a common practice for online merchants to enable their customers to write reviews on products that they have purchased. As a result, the number of reviews that a product receives grows rapidly. Manual analysis of customer opinions is very time consuming due to the multitude of contributions. So the sentiment analysis is used to extract, aggregate and analyze the opinions on product from discussion forums. Sentiment analysis has gained much attention in recent years. Sentiment analysis is a kind of text classification that classifies texts based on the sentimental orientation (SO) of opinions they contain. Sentiment analysis of product reviews has recently become very popular in text mining and computational linguistics research. In the field of sentiment analysis there are many algorithms exist to tackle Natural Language Processing problems. Each algorithm is used by several applications. In this proposed work we have revised the various sentiment analysis based neural network methods. Data used in this study are online product reviews collected from Amazon Experiments for neural network methods which are performed by using "Naïve Bayes" algorithm.

ICCSE147: MULTIPLE KERNELIZED CORRELATION FILTERS (MKCF) FOR EXTENDED OBJECT TRACKING USING X-BAND MARINE RADAR DATA

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Abstract: Conventional Tracking filter in Marine Radar only concerns the position or shape of the object. When the target encounters the clutter interruption or Ship Occlusion, the tracker is easy to drift away due to the wrong target association. Since in shortrange Marine time surveillance, the X-band Marine Radar captures the object in an extended region with varying intensities, in this paper, combining position, shape, and appearance of the target together, Multiple Kernalized Correlation Filters (MKCF) are proposed to conduct a single object tracking in the real Marine Radar. By Automatic initializing KCF on a target in different time steps and fusing these multiple KCFs via the maximum likelihood, the proposed tracker implicity uses multiple instances of the target to improve the robustness of the long term tracking. Bounding rectangles of the multiple trackers also enhance the reliability of ship segmentation via a voting procedure. In the real Ship tracking experiment, the proposed tracker performs favorably against the conventional Radar tracker and top-ranked visual tracker in the cases of clutter interruption, Ship Occlusions, and scale changing. We believe that our proposal sheds light on that the intensity distribution of the extended object could be valuable for target association in Marine Radar data. To encourage further research , our tracking framework is made open-source.

ICCSE148: LEAF DISEASE DETECTION USING PYTHON ALGORITHM

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Abstract: India is fast developing country and agriculture is the back bone for the countries development in the early stages. Due to industrialization and globalization concepts the field is facing hurdles. On top of that the awareness and the necessity of the cultivation need to be instilled in the minds of the younger generation. Now a day's technologyplays vital role in all the fields but till today we are using some old methodologies in agriculture. Identifying plant disease wrongly leads to huge loss of yield, time, money and quality of product. The objective of this research is to make use of significant features and prediction is done using Data Mining technique. This method mainly captures the image of a leaf, it is uploaded and then it is retrieved from the server. Generally we can observe the symptoms of disease on leafs, stems, flowers. so here we are using the leafs for identification of disease affected plants. First we need to select the plant which is affected by the disease and then collect the leaf of the plant and take a snapshot of leaf and load the leaf image into the system. It means representation of the image in more meaningful and easy to analyze way. In segmentation a digital image is partitioned into multiple segments can define as super-pixels. The main objective of this project is to find out whether the leaf is defected or not. if the leaf is in green color, then there is no defect in the leaf . if the leaf is spotted with black dots then it is shown to be affected by some disease and then we are predicting the disease of leaf and its lifetime is also too low. This approach can significantly support an accurate detection of leaf disease. By computing amount of disease present in the leaf, we can use sufficient amount of pesticides to effectively control the pests in turn the crop yield will be increased. We can extend this approach by using image processing technique. The user can also able to view the result in the mobile using the mobile app development.

ICCSE149: DETERMINING AND MONITORING AIR POLLUTION USING LORAWAN

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Abstract: Recently, the frequent environmental safety accidents have caused serious casualties and huge economic losses. This project proposes a lightweight mash up middleware to achieve remote monitoring and control automation of environmental physical sensor devices. First, the cluster tree based on Lora Wireless Sensor Network (WSN) is deployed in a monitoring environment, and proposes an Open Service Gateway initiative based uniform devices access framework. With the help of visualization technology, the graphical user interface of different physical sensor devices could be created through the IoT technology, which allows the sensors to combine with other resources easily. Besides, few types of safety monitoring and control automation scenarios are illustrated, and the performance has also been measured and analyzed.

ICCSE150: BLOCKCHAIN METHOD BASED SMART CITY BANKING APPLICATION

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Abstract: Cooperative inter-system applications rely on the exchange of broadcast single-hop status messages among system. It is long known attackers may use forged source IP address to conceal their real locations. To capture the spoofers, a number of IP trace back mechanisms have been proposed. The hacker watches and collects some user account to trace and benefit for hacker side. But loss is bank customer. But the problem will be solved some Block chain algorithm is using.

ICCSE151: AN EFFICIENT CLOUD PROTECTION SCHEME OVER DATA SPLITTER USING AES AND SHA

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Abstract: Cloud storage provides a convenient, massive, and scalable storage at low cost, but data privacy is a major concern that prevents users from storing files on the cloud trustingly. One way of enhancing privacy from data owner point of view is to Securely encrypt the files before outsourcing them onto the cloud and decrypt the files after downloading them. However, data encryption is a heavy overhead for the mobile devices, and data retrieval process incurs a complicated communication between the data user and cloud. Normally with limited bandwidth capacity and limited battery life, these issues introduce heavy overhead to computing and communication as well as a higher power consumption for mobile device users, which makes the encrypted search over mobile cloud very challenging as real cloud as AES, SHA. The proposed architecture offloads the computation from mobile devices to the cloud, and we further optimize the communication between the mobile clients and the cloud. It is demonstrated that the data privacy does not degrade when the performance enhancement methods are applied.

ICCSE155: AUTOMATICALLY IDENTIFYING, COUNTING AND DESCRIBING WILD ANIMALS IN CAMERA TRAP IMAGES USING DEEP LEARNING

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Abstract: Having accurate, detailed, and up-to-date information about the location and behaviour of animals in the wild would improve our ability to study and conserve ecosystems. Investigating the ability to automatically, accurately, and inexpensively collect such data, which could help catalyse the transformation of many fields of ecology, wildlife biology, zoology, conservation biology, and animal behaviour into "big data" sciences? Motion-sensor "camera traps" enable collecting wildlife pictures inexpensively, unobtrusively, and frequently. However, extracting information from these pictures remains an expensive, time-consuming, manual task. Here, deep convolution neural networks to identify, count, and describe the behaviours of 48 species in the 3.2 million-image Snapshot Serengeti dataset.Motion-sensor cameras in natural habitats offer the opportunity to inexpensively and unobtrusively gather vast amounts of data on animals in the wild. A key obstacle to harnessing their potential is the great cost of having humans analyse each image. Here, we demonstrate that a cutting-edge type of artificial intelligence called deep neural networks can automatically extract such invaluable information.

Keywords: Internet of thinks, Artificial intelligence, deep learning.

ICCSE156: LOW COMPLEX MULTI AUTHENTICATION PROTOCOL FOR RESOURCE CONSTRAINT M2M COMMUNICATION IN IOT

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Abstract: The Internet of Things (IoT) area shown great improvement in recent years than the time of launch. Almost everything around us acts as IoT device and gathers useful information. IoT is deployed in all the fields around us. With the widespread application, it also suffers from certain security issues. In this project, we attempt to reduce the impacts of security issues in the IoT setup through the secure password based authentication scheme. We implemented four different protocols between the entities in the network and performed the authentication. For encryption and decryption, we deployed the symmetric encryption algorithm. As a result, the time and resources required for key generation and management is largely reduced. The four entities present in our system are: mobile devices, M2M service provider (MSP), sensors and gateway. In this paper we implemented four different protocols, each for separate authentication scenarios. The first protocol provides authentication between mobile devices and the gateway. The second protocol provides authentication between mobile devices and the sensor. The third protocol provides authentication between sensor and sensor with the gateway. The fourth protocol provides authentication between sensor and sensor without the gateway. The experimental analysis proved the hypothesis of the proposed system in term of reduced computation time and cost.

ICCSE157: LATENCY AWARE LIGHT WEIGHT ONE TIME PAD GENERATION TO SECURE ANOMALY SWITCHES IN SDN

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Abstract: Technologies are advanced but also the security risks have evolved. An authentication mechanism is used to switch ID and allow only authenticated switch. ID of switch is verified by OTP, data mixing and distributive corrective mechanism. This light weight authentication mechanism reduces the over load largely and improve the performance.

ICCSE158:A NEW FEATURED BASED ML TECHNIQUE TO DESIGN LIGHT WEIGHT IDS FOR THE RESOURCE CONSTRAINT IOT ENVIRONMENT

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Abstract: Internet of Things (IOT) is one of the fast emerging technologies with increased benefits. In recent years, the threats to the data are on the rise with many new technological enhancements. Though many security measures currently exist, the threats have evolved and found a way to crack inside those security measures. In this project, we put forth a novel approach to detect the Denial of Service (DOS) attacks in the IOT environment. The main objective of the proposed system is to effectively identify the presence of DOS attacks in the system with reduced energy consumption and computation overheads. For the purpose of feature extraction we considered the mean, maximum and median value of the packet arrival rate. Based on these values, the classification is performed in order to detect the DOS attack. We implemented the Support Vector Machine (SVM) classifier algorithm to detect whether or not the DOS is present in the system. We perform cross-validation to find out the value of the kernel. This kernel will decide the packets as normal or DOS affected. The proposed approach is implemented and the observed results are presented to prove the hypothesis of the system. Unlike other existing system, we have considered the significant parameter in addition to the other parameters. It is clearly seen that the detection accuracy is high in case of our system than the other existing systems.

ICCSE159:THROUGHPUT BALANCED PRIVACY PRESERVING MODEL FOR DATA TRANSMISSION IN IOT ENVIRONMENT

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Abstract: Cloud computing has made a firm impact in the field of IoT devices such that IoT environment cannot be setup without the implementation of cloud. In general cloud services are obtained in three different forms as: Public, Private and Hybrid. Out of these most of the applications focus on private cloud as it offers high security compared with the public cloud. In this project, we implement our approach in untrusted cloud service (i.e.,) public cloud service. We develop and deployed a Semi-Outsourcing Privacy Preserving (SOPP) scheme. In this project, the data from the IoT devices are first sent to the cloud for storage. The cloud verifies the identity of the IoT device and stores the data in the datacenter. The main objective of our proposed approach is to create a model that is suited for small-scale industries who cannot afford on storage from a trusted cloud. For the purpose of key generation we used, Elliptic Curve Diffie Hellman (ECDH) algorithm and Advanced Encryption Standard (AES) for the process of encrypting the IoT data. In order to verify the integrity of the data being stored in the cloud and to reduce the cost of communication, we have implemented One-way Hash function. With our proposed system, the data is stored securely in an untrusted cloud. The experimental results show that our proposed system is durable (i.e.,) supports long-term battery, and reduced throughput and thereby reducing the communication and computation overhead largely.

ICCSE160: AN EDA-GA HYBRID ALGORITHM FOR MULTI OBJECTIVE TASK SCHEDULING IN CLOUD COMPUTING

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Abstract: Cloud computing is one of the trending research domains with countless advantages and used by most of the leading industries and companies in the world. Though most of the time cloud is utilized for storage, it can also be utilized for the other purposes. Cloud offers many services and resources at a reasonable price. Due to these features, many people prefer the use of cloud and results in increased the load in the cloud. To schedule the arriving tasks and balance the load on the cloud, Develop a multi-objective task scheduling algorithm and implement the same is essential. This project involves the task manager (receive the task and provide it to the scheduler), scheduler (receives the tasks and VM and maps them) and the resource manager (monitor the load and resource availability of each virtual machine (VM)). Select one optimal VM for the task based on the factors such as total task completion time and load balancing degree. This project use an hybrid algorithm as a combination of estimation of distribution algorithm (EDA) and Genetic Algorithm (GA). This hybrid algorithm is used for scheduling the tasks. Finally, the performance of the system is evaluated and the results are presented.

ICCSE161:ENHANCING THE SECURITY OF DATA AUDITING INCLOUDENVIRONMENT

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Abstract: Cloud environment allows users to shares the data. In order to provide data accuracy it is must to verify the data seriously. Existing auditing procedure allows team persons to change the data's that shared among a team. Also existing auditing procedure rely on team persons to do light weight calculation. By using SHA-512 method and TPM enhanced security auditing procedure is proposed. A virtual TPM is formed by joining the sliding window and interconnected functions. We evaluate our audit procedure by using various analysis schemes and experiment results shows that our proposed scheme ensures security of data.

ICCSE163: REALTIME BUSINESS ANALYTICS WITH COMPLAINT TRACKING THROUGH WEB APPLICATION

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Abstract: Complaint tracking system are mainly used in organizations with big number of Customer compared to the number of supporters. While there are several solutions available many of them are commercial and there are just a few free tools. E-helpdesk is a web application aimed at providing different services to the customers for which they normally have to wait too long. This application can be accessed throughout the world. The present system which is totally consumes a lot of time for a request to be satisfied manually. Complaint tracking system will allow customer to easily request for different services via this online portal. The problem can even be sent by messages and also pictures. The corresponding facility heads will then take necessary actions and to fulfill the requests. Any business that uses webmail for support tends to resolve customer support issues quicker and sees an increase in support productivity when they switch to help desk software. Help desk software automates handle ticket categorization and prioritization, ticket routing, alerts and notifications, ticket status management, and so on. With the right help desk solution, workload is cut down into as many tasks such as issue tracking, assigning, and automatic ticket management. This system is used to assign the jobs to the agent intelligently. After completing the problem information will be intimated to the company by the agents.

ICCSE164:VOICE BASED ONLINE EXAMINATION FOR VISUALLY CHALLENGED CANDIDATES USING NLP ALGORITHM

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Abstract: Examinations are the basic building block for academic progress. Person gets promoted to higher level or completes a course once they complete some tests. 80% of competitive examinations in India are of objective type. They generally contain 8 or10 optional questions. Reading questions during examinations are really tough for the blind or semi blind people due to their limited visibility. Being software engineers we hold responsibility to help those people. I propose to develop a complete system which solves all these problems in real time by reading questions written in during examination. Even it reads the objective answers. Audio can be listened for headphone. We used SAPI tool inbuilt with the VB to convert text to audio. The system will be verified for its efficiency in real time. Even for future enhancement we have ideas to add voice commands activated likerepeat,nextpage,stopetc.Wehope our system provide the blind people efficiency to tackle their examination related problems in realtime.

ICCSE178: SECURITY ANALYSIS OF REALTIME CLOUD ACCESS CONTROLLED VIA CLIENT FEEDBACK

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Abstract: File distribution and storage in a cloud storage environment is usually handled by storage device providers or physical storage devices rented from third parties. Files can be integrated into useful resources that users are then able to access via centralized management and virtualization. High volumes of files will result in wasted hardware resources, increased control complexity of the data center, and a less efficient cloud storage system. Client side and server side established large amount of data in common place. Place is called cloud storage area (Globus and SQL). Concept working is the user act one cloud member and retrieval the data and collect the data source in CDC (Cyclic Data Consistency) and user feedback to overcome the security purposes.

ICCSE177:ON ABSTRACT INTELLIGENCE: TOWARDAUNIFYINGTHEORYOFNATURAL, ARTIFICIAL, MACHINABLE AND COMPUTATIONAL INTELLIGENCE

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Abstract: Artificial intelligence is a human enquiry of both natural and artificial intelligence at the reductive embodying levels of neural, cognitive, functional, and logical from the bottom up. This paper describes the taxonomy and nature of intelligence. It analyzes roles of information in the evolution of human intelligence, and the needs for logical abstraction in modeling the brain and natural intelligence. A formal model of intelligence is developed known as the Generic Abstract Intelligence Mode (GAIM), which provides a foundation to explain the mechanisms of advanced natural intelligence such as thinking, learning, and inferences. A measurement framework of intelligent capability of humans and systems is comparatively studied in the forms of intelligent quotient, intelligent equivalence, and intelligent metrics. On the basis of the GAIM model and the abstract intelligence theories, the compatibility of natural and machine intelligence is revealed in order to investigate into a wide range of paradigms of abstract intelligence such as natural, artificial, machinable intelligence, and their engineering applications.

ICCSE176: REALTIME MONITORING OF ROCKET ENGINE PERFORMANCE USING ETHERCAT

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Abstract: Analysisofrocketengineperformanceincludes sensingoftemperatureofthecryogenicfuelintheengine,thrustexhibit duringthepropulsionandvibrationproducedintherocket'sbody.Thesenseddatawillbereceivedasanalo gsignalthen convertedtodigitalform byusingAnalogtodigitalconverterthenthedigitateddatawillbeprocessed.UsingEthernetforprocessin gdataisindeterministicintimeandcausemorecomplexityinhardwarestructure.Ether CAT(EthernetControl AutomationTechnology)isatechnology,employedcommonlyusedtoperformtherealtimemonitoring andcontrollingofsystems.EtherCATtechnologyovercomestheinherentlimitationsofEthernetsolutio ns. InthisprojecttheEther CATtechnologyisusedto fetchthedata(i.e.thedatasentbythesensors)fromtheslavecontrollerto themastercontroller.Theacquireddatawillbecomputedwith Twin CAT(avisualstudioLibrary)whichwillbeintegratedwithvisualc++.Thedatafromtheslavewillbefeedt

oTwinCATthroughtheEthernetinterfacesin thepc.

ICCSE175:ARTIFICIAL INTELLIGENCE IN HEALTHCARE

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Abstract: Artificial Intelligence (A.I.) is a multidisciplinary field whose goal is to automate activities that presently require human intelligence. Artificial intelligence (AI) is gradually changing medical practice. With recent progress in digitized data acquisition, machine learning and computing infrastructure, AI applications are expanding into areas that were previously thought to be only the province of human experts. In this review article, we outline recent breakthroughs in AI technologies and their biomedical applications, identify the challenges for further progress in medical AI systems, and summarize the economic, legal and social implications of AI in healthcare. Recent successes in A.I. include computerized medical diagnosticians and systems that automatically customize hardware to particular user requirements.

ICCSE173: ENCRYPTION PROTOCOL FOR RESOURCE CONSTRAINT DEVICES IN FOG BASED IOT USING ONE TIME PAD

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Abstract: Over the past few years, the internet of things (IoT) and cloud computing exhibited great applicability in most of the real-time situations. Now, these two technologies are combining to produce even more comforts through the technological advancements. In this project, we develop a novel approach that will safely store the data sensed by the IoT devices in the cloud. The cloud technologies have proved to have increased storage space by reduced security level. To overcome these adversities, we introduced the concept of Fog as well. The main objective of our proposed system is to allow secure transfer of data from the resource constrained devices. In this project, the resource constrained devices are the wireless sensor nodes. We implemented an encryption protocol that will work well even in the resource constrained devices. We use the One Time Pads (OTP) encryption protocol to achieve the objective of our proposed approach. The significance of OTP is that, it can be used only once and cannot be decrypted easily by the attacker. This OTP is generated by using the Random Number Generators thus making the protocol more secured. The experimental analysis confirmed that our proposed approach is suitable for the application or environment with resource constrained devices. Also, the time, energy, latency and packet overhead is considerably reduced than the existing systems considered for this project.

ICCSE186: DUAL LEVEL COOPERATIVE GAME APPROACH FOR ENERGY AWARE RESOURCE ALLOCATION IN DATA CENTERS

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Abstract: With the increased benefits of cloud computing technology, many rsearch works have been carried out to obtain its full potential. In this project, we have proposed a dual-level game approach for the purpose of controlling the energy consumption in the data centers present in the cloud. The main objective of the proposed project is to minimize the energy consumed by data centers and thereby reducing the total energy and heat dissipation which is obtained by effective task scheduling. Initially, the control parameters are configured in a way that is suitable to our proposed system. When a new task arrives, it is assigned to the scheduler. For the purpose of scheduling, we implement the relative utilitarian bargaining solution (RUBS) concept. In this concept, each scheduler will estimate its own utility. For determining the utility factor, we make use of game approach. In order to select the scheduler, we consider utility factor, resource usage and computing resources. After scheduling the tasks, the energy dissipation from the Data Center (DC) has to be controlled. The computing room air handling (CRAH) units implemented in our system will estimate the cooling energy. After that, the system parameters are dynamically updated in an online manner to adapt the current DC conditions. The experimental observations showed that the proposed approach obtained reduced energy consumption at the DC comparable to the other existing approaches.

ICCSE171: SMART MONITORING AND MANAGING THE MEDICINE DETAILS OF THE PATIENT DIGITALLY USING ANDROID APPLICATION

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Abstract: Emerging technologies in the areas of telecommunication are widely used in healthcare sector. The system Hospital Management System is a centralized database contains the records of patients, doctors, pharmacy details, etc. Since the patient enters the hospital the workflows start as the reception user creates new record by entering the personal information and sends the record to the assigned department. The procedure continues as long as the patient still in the hospital. Also, there are advance search that can help to make of statistical report and researches of the physicians. The concept of the report production has been computerized hence, no more delay in report generation to the hospital manager. These systems is considered as time and cost effective to healthcare.

ICCSE174: CREDIT CARD FRAUD DETECTION USING HIDDEN MARKOV MODEL

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Abstract: As a milestone in the development of outsourcing services, cloud computing enables an increasing number of individuals and enterprises to enjoy the most advanced services from outsourcing service providers. As credit card becomes the most popular mode of payment for both online as well as regular purchase, it provides cashless shopping. It will be the most convenient way to do online shopping, paying bills etc. Hence, risks of fraud transaction using credit card has also been increasing. In the existing credit card fraud detection system, fraudulent transaction will be detected after transaction is done. It is difficult to find out fraudulent and regarding loses will be barred by issuing authorities. It uses the sequence ofoperations in credit card transaction processing using a Hidden Markov Model (HMM) and show how it can be used for the detection of frauds. An HMM is initially trained with the normal behavior of a cardholder. The key to the robust fairness and compatibility lies in an all-or-nothing checking-proof protocol and a top-down checking method. In addition, our experimental results show that G Pay is computationally efficient.

ICCSE179:HETEROGENEOUS INTELLIGENCE DEPORTATION IN VIDEO DESIRE REALIZATION, ATTRIBUTION AND CHARACTERIZATION

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Abstract: The rapid growth in multimedia services and the enormous offers of video contents in online social networks, users have difficulty in obtaining their interests. Therefore, various personalized recommendation systems have been proposed. In addition, none of them has considered both the privacy of users' contexts (e.g., social status, ages and hobbies) and video service vendors' repositories, which are extremely sensitive and of significant commercial value. To handle these problems, it's been proposed a cluster-assisted differentially private video recommendation system based on distributed online learning. In our project we proposed the new optimization technique for recommendation. The video recommendation is based on user's behavior (user's interest) and also using the pattern mining for video tag search recommendation. We have search option as sub category search and global search in our application. Facing massive multimedia services and contents in the Internet is based the content provider. In that group of providers, we need to find out the irrelevant content promoters. Content promoters are usually trying to promote their contents to social media service or video service sites in internet. In our project based on the user's interest we can detect and avoid the irrelevant content and content promoters.

ICCSE180: WOMAN APPLICATION USING QR CODE

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Abstract: The phrase "Violence against women" is a technical term used to collectively refer to acts that are primarily or exclusively committed against women to harm them. Woman security is a critical issue and it is much needed for every individual to act over such issue to safeguard them. When safety and security is concerned, a smart phone can become a powerful tool to prevent violence against women. Keeping this in mind, an android app has been developed which is dedicated to provide relief to the person in trouble. By clicking on a button (provided on the app) alert message is sent to the user's already saved contacts. The application shares the user's location with the registered contacts in the form of message. The application has other key features like "Alarming neighbors by loud noise", "Autodialing", "Finding location of nearby police station and hospitals" etc. The work is developed in Java Development Kit using Android Studio. Thus, the app acts like a sentinel following behind the person till the user feels she is safe.

ICCSE182:REAL-TIME IOT SOLUTIONS FOR HAZARDOUS GAS MONITORING DEVICE AND DASHBOARD FOR SMART CITIES AND INDUSTRIES

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Abstract: Air Pollution has a very crucial impact on the ecosystem and human beings. With the growth of industrialization and the automobile industries, the air gets highly polluted by the harmful toxic and gases released from their emissions which results are many diseases such as asthma, lung cancer, mental illness, heart, bloodstream, and pneumonia, etc., Hence the air pollution should carefully be monitored and efficiently shows the results to the users to protect them from various hazardous chemicals and gases. In this Proposed System, using IoT (Internet of Things) and Cost-effective Air Pollution Monitoring device be designed and its collected the data from the highly explicit areas than its send to the Centralized Unit (i.e Google Firebase Real-Time.Data Base), and monitoring unit (i.e Web Application) which is suitable for the people and the government to view the levels of hazards from locating the kit in various places.

Keywords - Air Pollution, IoT (Internet of Things), Google Fire base Real Time Data Base, AirQuality

ICCSE184: MICROBIVORES IN MEDICINAL FIELD

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Abstract: Microbiovores is a powerful new tool for the treatment of human diseases and the improvement of human biological systems. Microbivore is a device which is been a part of medical electronics. This device will surely play a vital role in the future**.** Microbiovores nothing but artificial w.b.c. This nanorobot scaling study for artificial mechanical phagocytes of microscopic size, called "microbivores," whose primary function is to destroy microbiological pathogens found in the human bloodstream using a digest and discharge protocol. The microbivore is an oblate spheroidal nanomedical device measuring 3.4 microns in diameter along its major axis and 2.0 microns in diameter along its minor axis, consisting of 610 billion precisely arranged structural atoms in a gross geometric volume of 12.1 micron3. The device may consume up to 200 pW of continuous power while completely digesting trapped microbes at a maximum throughput of 2 micron3 of organic material per 30-second cycle. Microbivores are up to ~1000 times faster-acting than either natural or antibiotic-assisted biological phagocyticdefences, and are ~80 times more efficient as phagocytic agents than macrophages, in terms of volume/sec digested per unit volume of phagocytic agent.

ICCSE185: CRYPTOGRAPHICALLY PROTECTED DATABASE SEARCH

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Abstract: With databases being a critical component in many applications, there is significant interest in outsourcing them securely. Hardware enclaves offer a strong practical foundation towards this goal by promising secure execution, but they still suffer from access pattern leaks that can reveal a great deal of information. Oblivious SQL database has remained out of reach. Systems like Opaque and Cipher base support complex oblivious SQL queries but only for analytic queries that require scanning all the data. On the other hand, POSUP and Oblix support oblivious index lookups, but do not address the security or performance challenges of running general-purpose SQL queries over their indexes.

ICCSE187: AI GOOGLE VOICE ASSISTANT BASED MONITORING AND CONTROL SYSTEM

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Abstract: Internet of Things (IOT) conceptualizes the idea of remotely connecting and monitoring real world objects (things) through the Internet. When it comes to our house or office, this concept can be aptly incorporated to make it smarter, safer and automated. This IOT project focuses on building a smart wireless and cost-effective home and industrial automation system by using Google assistant and Adafruit. The leverage obtained by preferring this system over the similar kinds of existing systems like Google Home, Alexa etc., is that the inbuilt WI-FI controller NODE MCU (Esp8266) used here, costs very low when compared with Raspberry Pi which is used in the Google Home. Here, we use if this then that (IFTTT) which is a free web-based service to create triggers between Google Assistant (THIS) and Adafruit (THAT) depending on the voice commands we give to the Google Assistant. This project is utilized for monitoring and controlling industrial and home appliances from anywhere in theworld.

Keywords: IOT, Esp8266, IFTTT, Google Assistant, Adafruit, Google Home, Alexa, Raspberry Pi

ICCSE116: A DECISION SUPPORT SYSTEM FOR AN OPTIMIZED CLINICAL SCHEDULING

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Abstract: Healthcare Management is the major concern in now-a-days to care about and the waiting time for every hospitals or clinics are growing day by day. For avoiding this patient's waiting time problem, many schemes are introduced by hospitals, but all are in some sort of arrangements to manage. However, a permanent solution is required to solve this issue and makes the patient to calm and relax while coming for treatment. The current health care landscape desired efficiency and patient satisfaction for optimal performance. The outpatient of most clinics in developing countries is faced with plethora of issues. In this paper, a new Decision-Support environment is formed to help patients to be relaxed while coming to clinic without any hardness to consult doctor for their respective needs. The past implementations have grown how to model a simulation dependent on process mining strategies. In any case, applying this technique for out-patient forms clearly, specifically therapeutic planning, is complex, such as: (a) the gathered information from automatic health record framework requires a progression of procedures to gain reproduction parameters from the raw-information and (b) regardless of whether the inferred reenactment model completely mirrors the truth, there is no deliberate way to deal with determining successful upgrades for recreation investigation, that is trial situations. This paper focuses on developing a system to improve upon the efficiency and quality of delivering a web based appointment system to reduce waiting time. To rectify these difficulties, this proposed system introduces a Novel Decision Support System (NDSS) for a clinician's schedule analysis via experimental setup. In the proposed system, information driven prototypical model is built dependent on process discovery, patient arrival rate analysis, and service time analysis. Likewise, a progression of steps to infer the ideal improvement technique from the prototypical investigation is remembered for the system. To exhibit the helpfulness of our methodology, we present the contextual analysis results with genuine information in an emergency situation over clinical environments.

ICCSE183:A NOVEL FEATURE EXTRACTION BASED PERSON RECOGNITION USING LPQ

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Abstract: Traditional approaches are mainly focused on motionless and single face image based facial expression recognition. When compared to a motionless image, a video sequence can not only provide spatial appearance but also include facial motions and convoyed speech. But it is very hard to scrutinize the facial expressions in multi assessment. Besides, consistent spatiotemporal motion, such as facial expressions, can be seen as a generalization of dynamic textures and can be similarly represented. Moreover, the ability to discriminate dynamic patterns based on visual cues affects several applications, such as human-computer interaction, biometrics, psychology, surveillance, and video retrieval and indexing.Noise related issues like blurring of image, capturing the facial textures with different angle will leads to difficulty in person recognition. Lack of optimization techniques in extracting best features alone. Finding an accurate classifier which provides high classification accuracy and less consumption cost is challenging. In order to overcome these issues, a novel framework is introduced in this research work for facial expression recognition. To design an efficient person recognition methodology by extracting features using Local phase quantization and Geometric based techniques. To find the optimal path to obtain best features using directional graph-based features.

ICCSI01:DYNAMIC LEARNING CONTENT SELECTION AND COURSE COMPOSITION USING SPREADING ACTIVATION AND REINFORCEMENT LEARNING

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Abstract: While developing e-learning systems, many challenges still exist from the perspectives of assisting the end users, facilitating the learning process and enhancing the learning outcomes. This paper presents an approach to dynamically compose the adaptive e-learning courses based on the learner activities, learning objectives and instructional design strategies thus attempting to adapt to learner, learning and instructor requirements. We present dynamic learning content selection mechanism for learners to obtain their appropriate learning modules at each stage and compose the learning courses dynamically for e-learning using Spreading Activation and Reinforcement Learning. We apply Instructional Design policies while designing the dynamic course modules. While the learner learns through the learning content of the course, the system continues utilizing Spreading Activation Network to analyze pre and post learning conditions and furnish course agenda that move towards achieving the learning objectives. Reinforcement Learning learns the behavior of the users automatically, and provides the course materials dynamically based on the positive and/or negative learning reactions of the learners. We evaluate our system based on the learners' performance and show the improved results by using Reinforcement Learning technique. In addition, we compare our Spreading Activation approach with baseline system approach.

ICCSI02:IMPLEMENTATION OF AUTOMATED INTRUSION DETECTION AND SURVEILLANCE FOR CLASSIFIED LOCATIONS

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Abstract: Video surveillance is the process of monitoring a situation, an area or a person. With the Introduction of IOT, everything can be connected to the internet and can be accessed anytime and anywhere. When it comes to Security, everything can be monitored without the help of human.This IOT project focuses on building a security system which detects whether the person is authorized or an intruder with the help of Radio-frequency identification (RFID) tag and image processingtechnology.The leverage obtained by preferring this system over the similar kinds ofexisting systems is that it uses both RFID tag and Facial recognition which double-checks and improves the security for classifiedareas.Additionally, the system includes a night vision monitoring which is used to monitor the intruder in darkness. With the help of this device we might also avoid the risk of losing human personnel.Thus the system keeps continuous surveillance of restricted areas without the need for manual operator, cross checks the identity with both RFID and facerecognition and set out an alarm / pop-up message in case of unwarrantedintrusion.

ICCSI03:PROVIDING NETWORK SECURITY USING HONEY POT SECURITY SOLUTION

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Abstract: As public and private organizations migrate more of their critical functions to the Internet, criminals have more opportunity and incentive to gain access to sensitive information through the Web application.Gartner group estimates that 75% of Web site hacks that occur today happen at the application level and this number is expected to increase. Hackers target the Web application because it easily provides access to the most valuable business assets, such as employee & customer data (Like health records and credit card information's) as well as corporate proprietary information.This paper explains the techniques used by the Hackers to pervert the Web application and discuss the most common way of attacking the Web application.This paper discuss about how to develop a secure application using proper development cycle.This paper also details how to protect against these attacks using honey pot method and protect our mission critical information.

ICCSI04:CLOUD COMPUTING OF E-COMMERCE

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Abstract: Cloudcomputingaffectsondifferentsectors,including:E-learning,healthcare,andE-commerce.Itoffersonline services in high efficiency and minimal cost which provide a high economic value. It is undoubtedly the next revolution in the Internet world as well as the businessworld.Currently, more E-commerce enterprises move to Cloud Computing to achieve high practical value. This paper introduces an overview for Cloud computing in E-commerce through discussing various definitions for both concepts, highlighting the benefits and challenges for applying Cloud Computing in E-commerce, and discussing a suggested cloud computing E-commerce framework.

ICCSI05:INFLUENTIAL GENE IDENTIFICATION FOR CANCER CLASSIFICATION

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Abstract: This project aims in detecting the Cancer Genes using the data mining concept. The Classification rule and the Cluster Analysis is being used under the data mining concept. For some types of cancer, the damaging variations are inherited. Thus, our parent's medical history might provide clues to disease risks to look for in ourselves. Thus the damaged cell will get affected. The affected genes are divided into two broad categories. Oncogenesisare genes that promote cell growth and reproduction. Tumour suppressor genes are genes that inhibit cell division and survival. Typically, changes in many genes are required to transform a normal cell into a cancer cell. The objective of this project is to detect the cancer gene using the data mining concept. The Classification rule in the data mining is approached to classify and detect the type of gene. After which, the normal cell and the cancer cell will get separated using the Cluster Analysis process. The normal cell will be apart, whereas the cancer cell will provide different types of cancer genes that are present. Hence, the different type of genes are also classified. It will also show the difference between a normal cell & cancer cell.

ICCSI06:PRIVACY PRESERVING USER PROFILE MATCHING IN SOCIAL MEDIA

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Abstract:A user queries a user profile database, maintained by a social networking service provider to find out other users whose profiles are similar to the profile specified by the querying user. Example of application is online dating. We give a privacy-preserving solution for user profile matching in social networks by using multiple servers. Uploading his/her profile to a social networks, each user encrypts the profile by a homomorphic encryption scheme with a common encryption key. Uploading his/her profile to a social networks, each user encrypts the profile by a homomorphic encryption scheme with a common encryption key. Even if the user profile database falls into the hand of a hacker, the hacker can only get the encrypted data. When a user wishes to find people in the social media network, the user encrypts his/her preferred user profile and a dissimilarity threshold and submits the query to the social networking service provider. Based on the query, The profile id is correct which secretly share the decryption key, compare the preferred user profile with each record in the database. Finally predict the duplicate record.

ICCSI07:A REVIEW OF MACHINE LEARNING TECHNOLOGIES FOR NETWORK INTRUSION DETECTION

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Abstract: The Main aim of this project is detecting the intrusion that are presented in the online. In this project, the KDDCUP 99 Dataset is used for detecting the intrusion. The KDDCUP 99 data to survey and evaluate a research in IDS by identifying attack or normal and feature selection method to reduce the complexity of these datasets. IDS (Intrusion Detection System) is a software tool that controls all events occurring in a computing system or network and analyse them to find the malicious activities either within the system or outside the system. Recently, many researchers have adopted four approaches based IDS such as clustering, classification, information theory, and statistical theories to deal with intrusion detection problems. In this project, the random forest classification algorithm is used for increasing the accuracy of the classification results by classifying the normal and then attacks.

DEPARTMENT

OF

ELECTRICAL AND ELECTRONICS ENGINEERING

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ICEEE101: MULTI-INPUT SWITCHED-CAPACITOR THIRTEEN LEVEL INVERTER FOR HIGH-FREQUENCY AC POWER DISTRIBUTION

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Abstract: The multilevel voltage source inverter is recently applied in many industrial applications such as ac power supplies, static VAR compensators, drive systems, etc. One of the significant advantages of multilevel configuration is the harmonic reduction in the Output waveform without increasing switching frequency or decreasing the inverter Power output. The output voltage waveform of a multilevel inverter is composed of the number of levels of voltages, typically obtained from capacitor voltage sources. The so called multilevel starts from three levels. As the number of levels reach infinity, the output THD approaches zero. The number of the achievable voltage levels, however, is limited by voltage unbalance problems, voltage clamping requirement, circuit layout, and packaging constraints.

Keywords: Static VAR compensators, Multilevel inverter, THD.

ICEEE102: SMART SUPPORTING SYSTEM FOR MINE WORKERS USING LORA COMMUNICATION

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Abstract: Thousands of people die due to underground accidents every year. The death rate of underground workers increases every year. The safety measures to prevent the accidents are very less. Our aim is to provide a costless, more efficient system to protect the life of underground workers. We have developed a system which monitors the hazardous environment condition alerts the workers about it. The Hazardous parameter in underground is land sliding, rapid increasing the temperature level, leakage of unwanted hazardous gases, fire, smoke. Apart from above condition vibration is a major issue which is caused due to drilling or digging of underground system such as mines, well. Our intelligent system consists of three units namely field unit, data monitoring unit, and workers unit. The field unit consists of wireless sensing network which is used to monitor the hazardous condition. The detected information is transmitted using LORA communication to the workers unit and the alert is made using voice. The detected information is again passed to the data monitoring unit and an alert is also made from here. This system completely ensures on the safety of underground workers.

Keywords: LORA, Wireless sensing network, Data monitoring unit.

ICEEE103: MUNICIPAL WASTE HANDLING

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Abstract: The main part of upgrading a city into a smart city involves, using the digital advancements in favour of city functioning. As a step towards a smart city, our project tends to manage the municipal waste collection bins using IoT. The wastes dumped into the municipal bins are separated into organic and inorganic wastes by a conveyor belt setup, driven by a DC motor and monitored by a smart camera. The camera is computed to recognize different wastes. When organic waste is detected, the belt will move towards the bin for organic waste and for inorganic waste, the belt will move in other direction. Once they are segregated, the waste level in the bin is sensed by an ultrasonic sensor, which is connected to the micro controller. As the waste level in the bin reaches a pre-set level, an alert message indicating the fullness of the bin, along with its location, will be sent to the operator. Following this, a truck will be dispatched to collect the segregated waste. The segregated organic waste is recycled in a mechanical setup, by treating the wastes at an optimum temperature, pH level and moisture level. The treated wastes serve as organic fertilizer.

Keywords: Waste separation, IoT, Smart camera, recycle, Fertilizer.

ICEEE104: FOR(E)SIGHT - A PERCEPTIVE DEVICE TO ASSIST BLIND SURVIVAL

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Abstract: Blind mobility is one of the major challenges faced by the visually impaired people in their daily lives. Many electronic gadgets have been developed to help them but they are reluctant to use those gadgets as they are expensive, large in size and very complex to operate. This paper presents a novel approach to facilitate normal life to the visually impaired people. FOR(E)SIGHT is a device that helps the blind person to communicate with the mute people effectively, as it identifies the gesture language of mute using RASPBERRY PI and its camera module. FOR(E)SIGHT is specifically designed to assist visually challenged people in identifying the objects, text, action with the help of ultrasonic sensor and converts them to speech with the help of RASPBERRY PI 3.At times of emergency, FOR(E)SIGHT intimates the location of the visually challenged people to their relatives with the help of MEMS sensor and RASPBERRY PI 3.While performing the above mentioned process, the data is collected and stored in cloud. The sensors used in this device are of low cost, small size and easy incorporation, making it possible for the device to be widely used as consumer and user friendly device.

Keywords: RASPBERRY PI 3, Blind navigation, Object detection, OPENCV.

ICEEE105: SMARTCARD BASED GROCERY DISPENSING SYTEM

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Abstract: This paper proposes automation in ration distribution using smart card based on Aadhar card technology. In this system, we are using a prototype model based on ATM machine. Using this technology, we can achieve secure and interactive approach for atomization for ration distribution. Aadhar card contains all related information such as name, contact number, address, bank account details, biometric information and demographic data. Customer details are stored in the central data base which is provided by the government authority. In automated system, we replace the conventional ration card by smart card (RFID based), which contains unique Aadhar identification number of all the family members, card holder type APL or BPL which is used for user authentication to buy their ration. OTP and SMS will be sent to the card holder and after each transaction the government data base will be updated. An alarm is used to alert and notify the government authority during theft. After customer purchases the material amounts get deducted from the base registered bank account.

Keywords: RFID,GSM SIM 800L, Finger Print Module R305,AADHAR CARD, ARM7 LPC2148,OTP.

ICEEE106: MODELING AND CONTROL OF DOUBLE PIPE HEAT EXCHANGER USING DISTRIBUTED CONTROL SYSTEM (AC 800 F)

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Abstract: In modern Distributed Control Systems (DCS), an industrial computer network protocol known as fieldbus is used in chemical, Petro-chemical and other process industries for real-time communication between digital controllers, sensors, actuators and other smart devices. Here, Double pipe Heat exchanger system that is controlled and programmed by Control builder F software in ABB DCS (AC800Freelancer). This project is coded in control builder F in pc and loaded in ABB and further communication between the ABB and the system is done by FI830F. Here, Configure and interface both the Heat exchanger and DCS. It's interfaced and create some basic open-loop function program in software (Control builder F) with the help of function block diagram (FBD). The open-loop function for the control valve in Heat exchanger and it's completely controlled now. Therefore, the programming and configuration in between the Heat exchanger and DCS are successfully done.

Keywords: DCS AC 800F, Heat exchanger, control builder F.

ICEEE107: INTELLIGENT PARKING SYSTEM WITH REAL TIME SCHEDULING USING ADAPTIVE UTILITY SCHEDULING ALGORITHM

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Abstract: The problem of electric vehicle (EV) charging scheduling in commercial parking lots has become a meaningful study in recent years, especially for the parking lots near the workplace that serve fixed users. It focuses on the optimization of the EV charging in the parking lot integrating energy storage system (ESS) and photovoltaic (PV) system. A smart charging management system is first established. The charging optimization problem is formulated as a cost minimization problem. Then, adaptive utility oriented scheduling is introduced as a method to find the optimal solution. Considering the constraint conditions in the optimization problem, an improved adaptive utility oriented scheduling is proposed, which can improve the convergence speed and optimization accuracy. Finally, a real-time EV charging scheduling strategy based on short-term PV prediction and IBGWO is proposed. Several cases are simulated to analyze the performance of the proposed strategy. The experimental results show that the proposed algorithm is superior in solving the proposed charging scheduling problem compared with other meta-heuristic algorithms. Moreover, the proposed strategy can effectively improve the utilization rate of the PV and reduce the electricity cost of operators.

Keywords: Energy storage system, Utilization rate.

ICEEE108: AN EFFICIENT APPROACH OF FUZZY BASED REAL TIME MANAGEMENT OF GROUND WATER RESOURCES

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Abstract: This study explores groundwater management policies and the effect of modeling assumptions on the projected performance of those policies. Groundwater plays a vital role in the arid inland river basins, in which the groundwater management is critical to the sustainable development of area economy and ecology. First, a simulation–optimization model was constructed to optimize the pumping rates of the study area according to the groundwater level constraints. Three different groundwater level constraints were assigned to explore sustainable strategies for groundwater resources. The results indicated that the simulation–optimization model was capable of identifying the optimal pumping yields and satisfy the given constraints. Second, the simulation– optimization model was integrated with wireless sensors network (WSN) technology to provide real-time features for the management. The results showed time-varying feature for the groundwater management, which was capable of updating observations, constraints, and decision variables in real time. Furthermore, a web-based platform was developed to facilitate the decision-making process. This study combined simulation and optimization model with WSN techniques and meanwhile attempted to real-time monitor and manage the scarce groundwater resource, which could be used to support the decision-making related to sustainable management.

Keywords: Fuzzification, Flexibility.

ICEEE109: PLANT LEAF DISEASES IDENTIFICATION AND CLASSIFICATION USING BIO INSPIRED ALGORITHM

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Abstract: India, the country where the main source of income is from agriculture. Farmers grow a variety of crops based on their requirement. Since the plants suffer from the disease, the production of crop decreases due to infections caused by several types of diseases on its leaf, fruit, and stem. Leaf diseases are mainly caused by bacteria, fungi, virus etc. Diseases are often difficult to control. Diagnosis of the disease should be done accurately and proper actions should be taken at the appropriate time. Image Processing is the trending technique in detection and classification of plant leaf disease. This work describes how to automatically detect leaf diseases. The given system will provide a fast, spontaneous, precise and very economical method in detecting and classifying leaf diseases. First, the affected region is discovered using segmentation by clustering, then features (color and texture) are extracted. Lastly, classification technique is applied in detecting the type of leaf disease. The proposed system effectively detects and also classify the disease.

Keywords: Plant, Leaf disease identification.

ICEEE110: PRIVACY PRESERVING ONLINE RIDE HAILING BASED ON EUCLIDEAN DISTANCE TRANSFORM

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Abstract: Nowadays, problems of congestion in urban areas due to the massive usage of cars, last minute travel needs and progress in information and communication technologies have fostered the rise of new transportation modes such as ridesharing. In a ridesharing service, a car owner shares empty seats of his car with other travelers. Recent ridesharing approaches help to identify interesting meeting points to improve the efficiency of the ridesharing service (i.e., the best pick-up and drop-off points so that the travel cost is competitive for both driver and rider). In particular, ridesharing services, such as Blablacar or Carma, have become a good mobility alternative for users in their daily life. However, this success has come at the cost of user privacy. Indeed in current's ridesharing services, users are not in control of their own data and have to trust the ridesharing operators with the management of their data. In this paper, we aim at developing a privacy-preserving service to compute meeting points in ridesharing, such that each user remains in control of his location data. More precisely, we propose a decentralized architecture that provides strong security and privacy guarantees without sacrificing the usability of ridesharing services. In particular, our approach protects the privacy of location data of users. Following the privacy-by-design principle, we have integrated existing privacy enhancing technologies and multimodal shortest path algorithms to privately compute mutually interesting meeting points for both drivers and riders in ridesharing. In addition, we have built a prototype implementation of the proposed approach. The experiments, conducted on a real transportation network, have demonstrated that it is possible to reach a trade-off in which both the privacy and utility levels are satisfactory.

Keywords: Privacy, Trade-off.

ICEEE111: SECURE AND SCALABLE WATERMARKING SCHEME FOR MEDICAL IMAGES

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Abstract: In this paper, we propose an image secure and scalable watermarking scheme in DWT domain, by utilizing adaptive neuro fuzzy interference system, the watermark can be adaptively embedded without degradation of the original image. In order to improve the robustness, we embedded watermark several times, and watermark can be extracted without referring to the original image. Simulations of various attacks will be given to demonstrate the robustness of the proposed algorithm. The proposed method uses single scaling factor to embed the watermark in all the selected blocks which is obtained by performing a large number of experiments on all images. In future, based on the noise sensitivity of each block, watermark strength is decided using evolutionary approaches to enhance the robustness.

Keywords: Watermarking, Fuzzy.

ICEEE112: ADAPTIVE AGGREGATION BASED A WIRELESS NETWORK SOLUTION FOR FACTORY AUTOMATION

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Abstract: The Wireless Sensor network is distributed event based systems that differ from conventional communication network. Sensor network has severe energy constraints, redundant low data rate, and many-to-one flows. Aggregation is a technique to avoid redundant information to save energy and other resources. There are two types of aggregations. In one of the aggregation many sensor data are embedded into single packet, thus avoiding the unnecessary packet headers, this is called lossless aggregation. In the second case the sensor data goes under statistical process (average, maximum, minimum) and results are communicated to the base station, this is called lossy aggregation, because we cannot recover the original sensor data from the received aggregated packet. The number of sensor data to be aggregated in a single packet is known as degree of aggregation. The main contribution of this paper is to propose an algorithm which is adaptive to choose one of the aggregations based on scenarios and degree of aggregation based on traffic. We are also suggesting a suitable buffer management to offer best Quality of Service. Our initial experiment with NS-2 implementation shows significant energy savings by reducing the number of packets optimally at any given moment of time.

Keywords: Aggregated, Quality of Service.

ICEEE113: FUZZY INFERENCING MODEL BASED INTRUSION DETECTION SYSTEM

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Abstract: The Wireless Sensor network is distributed event based systems that differ from conventional communication network. Sensor network has severe energy constraints, redundant low data rate, and many-to-one flows. Aggregation is a technique to avoid redundant information to save energy and other resources. There are two types of aggregations. In one of the aggregation many sensor data are embedded into single packet, thus avoiding the unnecessary packet headers, this is called lossless aggregation. In the second case the sensor data goes under statistical process (average, maximum, minimum) and results are communicated to the base station, this is called lossy aggregation, because we cannot recover the original sensor data from the received aggregated packet. The number of sensor data to be aggregated in a single packet is known as degree of aggregation. The main contribution of this paper is to propose an algorithm which is adaptive to choose one of the aggregations based on scenarios and degree of aggregation based on traffic. We are also suggesting a suitable buffer management to offer best Quality of Service. Our initial experiment with NS-2 implementation shows significant energy savings by reducing the number of packets optimally at any given moment of time.

Keywords: Aggregated, Quality of Service.

ICEEE114: OPTIMUM TILT ANGLE OF SOLAR PV INSTALLATION FOR RESIDENTIAL BUILDINGS OF TAMILNADU – DIFFERENT CLIMATE ZONES

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Abstract: This paper presents, determining optimum Tilt Angle of solar PV installation on Residential Buildings of Tamilnadu for six different climate zones. The investigations involved tilting the module at different slope angles of 10°, 15°, 20°, 30° and 40° using PVGIS simulation tool. Analysis of the results show that the best tilt angle for optimum energy yields from solar PV installation in these six regions. Details of the In-plane irradiation, Annual energy production, Angle of incidence losses, Performance ratio, Temperature and low irradiance losses are analyzed and presented in this paper.

Keywords: Tilt angle, optimum energy, In-plane irradiation, Annual energy production, Angle of incidence losses, Performance ratio, Temperature and low irradiance losses.

ICEEE115: STATIC AND DYNAMIC PERFORMANCE ANALYSIS OF FUZZY BASED MPPT TECHNIQUES FOR STAND ALONE PV SYSTEM

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Abstract: Solar Photo Voltaic (PV) Energy is one of the promising renewable energy sources. The main issue in even lot of effect taken improves PV efficiency. In this among all, MPPT plays vital roles. PV energy utilization is its power poor efficiency. Hence efficient utilization of PV energy relies on the successful implementation of Maximum Power Point Tracking (MPPT). This paper is aimed at the comparative study of different Fuzzy Based MPPT techniques for standalone PV system. The proposed Performance of four MPPT approaches namely Fuzzy Assisted Perturb and Observe (P&O), Fuzzy Assisted Incremental Conductance (InC), Fuzzy Control Based on Power and Voltage deviations as Inputs and Fuzzy Control Based on Power and Duty ratio deviations as Inputs are compared under static and dynamic atmospheric and load conditions. Simulation is done with one diode model of a 200W PV panel supplying a resistive load. MPPT is implemented using Boost Converter with a carrier frequency of 2kHz. Simulation results show that Fuzzy Assisted InC and fuzzy based on f ΔP and ΔD as input gives good performances of duty.

Keywords: PV system, Maximum Power Point tracking, Boost converter, Fuzzy Logic Controller.

ICEEE116: STATE SPACE MODELLING OF MMC WITH STANDALONE PV SYSTEM

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Abstract: The Modular Multilevel converter (MMC) is rapidly evolving and highly inevitable Multilevel Converter topology for medium and high voltage applications. The MMC profoundly adapted for power conditioning in renewable energy sources applications like solar Photovoltaic and Wind energy systems.The solar PV system is one of the most promising technologies of renewable energy sources in electric power generation. The main features of Solar PV system are eco-friendly, pollution free and inexhaustible.The vital detriment of the solar PV system is low efficiency. Over the decade year, several kinds of research are conducted in power electronics interface devices to improve the performance solar PV system. This paper presents a model of a three-phase MMC with half bridge cell configuration in the state space approach using differential equations which precisely describe the dynamic characteristics of the converter. Also, the simulation of a stand-alone PV system with this MMC model in MATLAB m-script file is presented. Finally, the simulation results validate the effectiveness of the converter with low Total Harmonic Distortion (THD) output voltage**.**

Keywords: Modular Multilevel Converter (MMC), state-space model and MATLAB M-File.

ICEEE117: INTERGRATION OF SOLAR PV INTO DISTIBUTION NETWORK

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Abstract: Distribution systems hold a very significant position in the power system since it is the main point of link between bulk power and consumers. The traditional distributions systems are passive in nature where the power flow is from the substation towards the consumer. Here the radial and downstream power flow may create line regulation problem at the far end of the distribution feeder which can be mitigated by employing tap changing transformers at the substation.

In smart Grid paradigm with the availability of communication infrastructure is possible to integrate the distributed energy resources (DER) in the distribution network called active distribution networks. Here in active distribution network the power flow is no longer unidirectional. DER may inject power into the main grid during the light load periods. These upstream power flow will eventually create unacceptable voltage profiles in distribution networks. These voltage profiles can be controlled by controlling the reactive power outputs of solar PV inverters which connects the solar PV sources in to the main grid. This project explores the feasibility for the above mentioned control in a systematic way by first simulating the various operating scenarios of DER in Distribution systems.

Keywords: Radial Distribution Network, Distribution Energy Resources, photovoltaic source.

ICEEE118: A FUZZY CONTROL ARCHITECTURE TO COORDINATE RENEWABLE ENERGY SOURCES AND ENERGY STORAGE SYSTEM IN ISLANDED MICROGRIDS

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Abstract: The scares of conventional energy resources and negative environmental impact of non-renewable energy recourses are accelerating the technologies for new non-conventional environment friendly energy options. Most of utility the grids are saturated with bulk energy resources but there are plenty of available small scale energy resources distributed around regions. Most of them are identified as wind, photo voltaic (PV), solar thermal and waste heat from industries and cooling tower of combined cycle power plants. It is difficult to gain full potential from these renewable energy resources as when they are connected to the power system individually, it leads to hindering the system stability. Micro grid is an attractive option to harness the benefits offered by distributed generation, eliminating constraints on high penetration of Distributed Energy Resources (DER). The micro grid provides an interface between central grid and micro devices to overcome these individual integration issues. So micro grid should capable to address those issues to optimize grid stability and power quality. Control system of the micro grid can be discriminated as voltage and frequency control, power flow balancing, load sharing, and protection as well as islanding and resynchronization. (Coordination of individual components with a well-defined energy management scheme). In this work, a coordinated architecture of islanded ac micro grids with smooth switching droop control (SSDC) is derived using fuzzy controller to improve the performance of the system.

Keywords: Photo voltaic, Micro Grid, Smooth Switching Droop Control (SSDC).

ICEEE120: CLOUD BASED PRECISION FARMING & ANDROID BASED SOFT MARKETING

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Abstract: Agriculture is the basic source of food supply for all countries in the world. Water is the Essential resources for agriculture. The automated irrigation and crop field monitoring system is used to optimize the use of water resource for agriculture. The system consists of sensor network for humidity, temperature, soil moisture, soil pH and NPK. Internet of the things(IoT) is an ecosystem of connected physical objects that are accessible through the internet. Real time monitoring data can be utilized and the performance can be tracked. Hence high yield can be achieved.

Numerous seasonal, economic and biological patterns influence the crop production but unpredictable changes in these patterns lead to a great loss to farmers. These risks can be reduced when suitable approaches are employed on data related to soil type, temperature, atmospheric pressure, humidity and crop type. Whereas, crop and weather forecasting can be predicted by deriving useful insights from these agricultural data that aids farmers to decide on the crop they would like to plant for the forthcoming year leading to maximum profit. The ultimate aim of making this as a liable model is to put an end to the trauma and difficulty faced by the farmers because of the middlemen.

Keywords: Internet of the things(IoT), Soil moisture, Soil pH.

ICEEE121: "OVER VIEW ON NOVELTY IN RECENT ADVANCED MATERIALS" APPLICATIONS IN ELECTRONICS ENGINEERING

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Abstract: The advanced materials used as its nano scale , that are economically promising for the future include those that have applications in information technology, electronics, building materials, household appliances, environmental technologies, energy technologies etc., Wearable electronics sensor are one example of a real-world application that benefits from nanomaterial innovation. These Sensors are directly attached on skin as seen here or integrated in clothes, these electronics collect data to monitor human health and activity. A recently developed Nano scale thermal switches that are key to thermal management of nano scale devices, refrigeration, data storage, thermal computing and heat management of buildings .MOtiF materials technology used to collect and recycle unused chemicals, we can create MOF batteries to recharge smart mobile phones.

Keywords: Advanced Materials, Electronic sensors, Thermal Switches.

ICEEE122: AADHAR CARD BASED ELECTRONIC VOTING MACHINE USING ARDUINO

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Abstract: This paper describes an online electoral system for Indian election is proposed for the first time. The voting system is managed in a easier way as all the users should login by Aadhar card number and password and click on his/her favorable candidates to cast the vote. This features a larger security in the sense that voter high security password is confirmed before the vote is accepted in the main database of ECI. The extra feature of the model is that the voter will ensure if his/her vote has gone to correct candidate/party. The votes are going to be done automatically, therefore saving an enormous time and facultative ECI to announce the result at intervals a very short period. This is often a time consuming method because the person needs to check the voter ID card with the list he has, make sure it as an authorized card and then enable the person to poll his vote. Thus, to avoid this type of issues, designed a finger print based voting machine wherever the individuals no ought to carry his ID which contains his entire details. The person at the booth should show his Finger. This Finger print reader reads the details from the tag. This information is passed to the controlling unit for the verification. The controller reads DATA from the reader and compares this data with the already existing data. If the data matches with the already stored information, the person is allowed to poll his vote. If not, a message is displayed on LCD and therefore the person isn't allowed to poll his vote.

Keywords: ECI, LCD, Aadhar card.

ICEEE123: SMART BLOOD OXYGEN WITH AUTOMATED DATA SAVING SYSTEM

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Abstract: Health related issues and parameters are of utmost importance to man, and it is essential to his existence and influence and thus he has sought for an improved system that would be able to capture and monitor the changes in health parameters are irrespective of time and location so as to provide for measures that will forestall abnormalities and cater for emergencies. This work presents a system that is capable of providing real time remote monitoring of the heartbeat with the improvement of an alarm and SMS alert. This project aims at the design and implementation of a low cost but efficient and flexible heartbeat monitoring and alert system using GSM technology. It is designed in such a way that the heart pulse rate is sensed and measured by the sensors which sends the signals to the control unit for proper processing and the determination of the heartbeat rate which is displayed on the LCD, it then proceeds to alert by an alarm and SMS sent to the mobile phone of the medical expert or health personnel, if and only if the threshold value of the heart beat is maximally exceeded. Thus this system proposes a continuous, real-time, remote, safe and accurate monitoring of the heartbeat rate and helps in patient's diagnosis and early and preventive treatment of cardiovascular aliments.

Keywords: Parameters, Sensors, Emergencies, GSM technology, SMS, Real-time monitoring, Heartbeat rate.

ICEEE125: CONTROL OF INDUCTION MOTOR USING NEURAL NETWORK

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Abstract: This paper presents The induction machine has proved to be an appropriate solution for most industrial applications; Moreover, it presents the future of sustainable automotive industry due to the strategies of control and command of which it can be equipped. This paper presents a study of advanced methods applied to the control of induction machine in order to obtain a system satisfying the criterion of robustness. This work has been done as a comparison between the conventional controller and the advanced techniques of control such as fuzzy logic and artificial neural network. The results of various simulation tests highlight the robustness properties of the different control strategies based on orientation of the rotor flux. A relative comparison between the PI controller and the proposed NNM based ANN controller indicates that the ANN mapping controller yields superior performance.

Keywords: GA Genetic Algorithm, IM Induction Motor ANN Artificial Neural Network.

ICEEE126: DQ BASED INVERTER FOR SOLAR GRID INTEGRATION

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Abstract: This paper is devoted to implement DQ control scheme for three phase grid connected inverter powered by renewable energy source. Grid connected renewable energy systems feed electricity directly to the electrical network operating parallel to the conventional source. A standard grid-connected inverter system is operated in total degree of freedom to integrate the renewable energy powered system to improve the penetration of total useful power. However, in practical it is necessary that renewable energy sources connected to the grid must not negotiate the grid parameters under fault conditions. This paper deals with design and simulation analysis of a three-phase inverter in MATLAB SIMULINK environment which can be a part of photovoltaic grid connected systems. The converter used is a Voltage source inverter (VSI) which is controlled using synchronous d-q reference frame to inject a controlled current into the grid. Phase Locked loop and harmonic oscillator is used to lock grid frequency and phase. In this paper the reduction in harmonics is achieved.

Keywords: THD, Park Transformation, MATLAB / SIMULINK, PLL, SVPWM.

ICEEE127: HUMAN ACTIVITY RECOGNITION IN SMART HOME WITH DEEP LEARNING APPROACH

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Abstract: Today is a hi-tech world. Innovative projects are on the rise with great competitions. Smart technologies progressed provide quick solutions in less time. The other part has also led to an increase in crime, threats and intrusions in the society. It is mandatory for all of us to be safe and secure. Home security is one of the major issue today irrespective of our presence or absence at home and especially when only senior citizens are at home living far away from their beloved ones due to number of reasons. The main goal of this project is to focus on a security system which could be helpful for the old age people to be safe from thieves. Examining the existing work on security systems and challenges, the proposed system here is a hybrid of cameras and sensors with vibration and human detector with the Raspberry Pi as the main device being added for alerting the people in and out of the house using IoT. It also capture the image of the incidence and send it to the owner of the house.

Keywords: Raspberry Pi, IoT, Human detector.

ICEEE128: DETECTION OF ALIVE HUMAN IN EARTH QUAKE AREAS USING ROCKER BOGIE SUSPENSION IN REAL TIME

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Abstract: Today is a hi-tech world. Innovative projects are on the rise with great competitions. Smart technologies progressed provide quick solutions in less time. The other part has also led to an increase in crime, threats and intrusions in the society. It is mandatory for all of us to be safe and secure. Home security is one of the major issue today irrespective of our presence or absence at home and especially when only senior citizens are at home living far away from their beloved ones due to number of reasons. The main goal of this project is to focus on a security system which could be helpful for the old age people to be safe from thieves. Examining the existing work on security systems and challenges, the proposed system here is a hybrid of cameras and sensors with vibration and human detector with the Raspberry Pi as the main device being added for alerting the people in and out of the house using IoT. It also capture the image of the incidence and send it to the owner of the house.

Keywords: Raspberry Pi, IoT, Human detector.

ICEEE129: THREE PHASE AUTOMATIC CHANGE OVER SWITCH IN REAL TIME USING IoT

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Abstract: Power supply instability in developing countries creates a need for automation of electrical power generation or alternative sources of power to back up the utility supply. For a very long time, power outages, power interrupts and also unexpected routine power line maintenance is one of the major problems faced in industries, hospitals, offices, and homes whole over the world. For that case, this project provides an automatic operation of electrical power distribution systems; the rapid and reliable transfer of the system from one power source to another during specific events such as routine power line maintenance, This automation becomes necessary as the rate of power outage becomes predominantly high. Most industries and commercial processes are partly dependent on three phase and public power supply which is epileptic especially in tropical Asian countries where Tamilnadu forms a part. Therefore, if the processes of power change-over between these two power-supplying sources are manual, human error during change-over connections may occur; leading to machine damage, electric shock/electrocution as well as increased down time consequently introducing massive losses. In this project, we are practically approaching with that concept of automatic three phase switching.

Keywords: Power interrupts, IoT, Automation.

ICEEE130: HYSTERESIS MODULATION OF LINE CONDITIONER WITH MULTILEVEL INVETER

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Abstract: The analysis, design, and simulation performance verification of a serial type line conditioner. Since it processes only a fraction of the load power, the overall converter losses tend to be lower and the efficiency of the conditioner higher. Regarding the dynamic performance, the line inductance, which results in a positive zero in the transfer function of the plant, is taken into consideration when designing a voltage controller with higher bandwidth for faster response. In addition, a virtual resistance is included in the control of the system to damp oscillations often seen for operations at light load and with nonlinear load conditions. In the proposed system the analysis of line conditioner with multilevel inverter. The control technique used is hysteresis modulation. The multilevel inverter decreases the harmonic content in the output voltage. Hysteresis modulation can provide better control than the conventional system. By using the recently developed multilevel hysteresis modulation approaches, the advantages of using several accessible dc potentials in a multilevel inverter have been fully exploited.

Keywords: Multilevel inverter, Hysteresis modulation, Voltage controller.

ICEEE131: REAL TIME INTELLIGENCE SMART ENERGY MONITORING AND CONTROLLING SYSTEM

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Abstract: Internet of Things (IoTs) idea which can be applied for explaining the developing issue of intensity/vitality the executives. A modest simple to actualize and oversee vitality checking framework for our day by day use of electric force. So as to conquer the human mistakes, physical work and cost diminishing in vitality utilization with more productivity for the force the board framework, right now, center basically around IoT's vitality observing. The proposed structure is to actualize a minimal effort remote sensor system and convention for keen vitality and web application prepared to do naturally perusing the unit and sending the information consequently for the force clients to see their present vitality meter perusing. By utilizing this framework, the clients will know about the power utilization in his/her home to decrease the force wastage and cost of utilization. The framework comprises of an advanced vitality meter, ESP8266 Wi-Fi module and web applications for the board framework. The ESP8266 Wi-Fi module will be installed into the meter and actualize the TCP/IP convention for the correspondences between the meter and web application. The exploratory outcomes show that the proposed framework works very well with productivity, and it is attainable to actualize in useful applications for ease construct programmed vitality meter perusing. The structure depends on a minimal effort PZEM-004T, utilizing non-intrusive current sensor electric vitality estimation chip and ESP8266 Wi-Fi module smaller than normal microcontroller for recovering information from sensor hubs and sending information to server by means of web.

Keywords: Wi-Fi module, PZEM-004T, IOT.

ICEEE132: A NOVEL CONTROL FOR A CASCADED BUCK BOOST PFC CONVERTER OPERATING IN DISCONTINUOUS CAPACITOR VOLTAGE MODE

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Abstract: The arrangement and improvement of a sharp watching and controlling system for vitality meters constantly has been talked about right now. With the ultimate objective to screen the vitality thus, decrease creation cost, the Remote Meter Reading System is delivered. Remote vitality meters were organized with prepaid apportionment system. Structure of which uses virtual instrument with web of things. The structure essentially screens the imperativeness necessities and status of usage of power. The system can screen the status and send information to webserver and moreover a prepared SMS through GSM will sent normally, if the conditions get peculiar, to a concerned specialists mobile phone and furthermore sum to be paid by client toward the finish of month naturally for the following month with current utilization insights. The concerned master can control the high force used devices on or off to improve the system through online interface. The website page which we will use is mystery express guaranteed by including username and secret phrase alongside made sure about API keys. This structure finds a wide application in locales where physical proximity isn't possible each of the a chance to control the gadgets. The structure will be work with ARM processor used in the use of sensor module and other correspondence condition. The system offers an aggregate, insignificant exertion, historic and simple to utilize technique for progressing watching and remote control of Appliances.

Keywords: Buck-boost, Power factor, Discontinuous capacitor voltage.

ICEEE133: SMART HOME OPTIMIZATION USING ENERGY MANAGEMENT APPROACH WITH BIG DATA ANALYTICS

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Abstract: The arrangement and improvement of a sharp watching and controlling system for vitality meters constantly has been talked about right now. With the ultimate objective to screen the vitality thus, decrease creation cost, the Remote Meter Reading System is delivered. Remote vitality meters were organized with prepaid apportionment system. Structure of which uses virtual instrument with web of things. The structure essentially screens the imperativeness necessities and status of usage of power. The system can screen the status and send information to webserver and moreover a prepared SMS through GSM will sent normally, if the conditions get peculiar, to a concerned specialists mobile phone and furthermore sum to be paid by client toward the finish of month naturally for the following month with current utilization insights. The concerned master can control the high force used devices on or off to improve the system through online interface. The website page which we will use is mystery express guaranteed by including username and secret phrase alongside made sure about API keys. This structure finds a wide application in locales where physical proximity isn't possible each of the a chance to control the gadgets. The structure will be work with ARM processor used in the use of sensor module and other correspondence condition. The system offers an aggregate, insignificant exertion, historic and simple to utilize technique for progressing watching and remote control of Appliances.

Keywords: GSM, ARM processor, Remote Meter Reading System.

ICEEE134: A REAL-TIME IOT -BASED POWER STATION MONITORING SYSTEM OF PETROCHEMICAL FACILITIES

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Abstract: Petrochemical industry not only consumes a large amount of electricity every year but also requires high-quality power supplies. Any unexpected power failure could shut down the entire production line and cause significant financial loss. Meanwhile, due to the large electricity consumption and intensive power demand, in-house cogeneration plants have been equipped for most petrochemical facilities. Thus, any power interruption or disturbance between a petrochemical facility and interconnected power grids could affect both sides of the power systems. Therefore, having high power quality becomes one of the most critical parts for petrochemical facilities. To avoid unexpected power failure and to provide a better understanding of the power system at petrochemical facilities, a fast, precise and reliable power monitoring system is required. A novel Real- IOT -Based Power Monitoring system is developed in this Project for a power substation at the petrochemical facility. Besides the data collecting with event triggering mechanism and measurement data recording functions, Sub synchronous Oscillation (SSO) detection application is also developed in this system. This monitoring system could provide precise data to help engineers with insightful analysis of the electric system to prevent a power failure, and it also could help system operators to have a better understanding ofthe system operation characteristics.

Keywords: Sub synchronous Oscillation (SSO), Power grids, IOT.

ICEEE137: SMART IRRIGATION SYSTEM USING ONLINE AND OFFLINE COMMUNICATION MODULES

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Abstract: Automation of farm activities can transform agricultural domain from being manual and static to intelligent and dynamic leading to higher production with lesser human supervision.This project proposes an automated irrigation system which monitors and maintains the desired soil moisture content via automatic watering. Microcontroller is used to implement the control unit. The setup uses soil moisture sensors which measure the exact moisture level in soil. This value enables the system to use appropriate quantity of water which avoids over/under irrigation. IOT is used to keep the farmers updated about the status of sprinklers. Information from the sensors is regularly updated on a webpage using GSM and ESP8266 modem through which a farmer can check whether the water sprinklers are ON/OFF at any given time. Also, the sensor readings are transmitted to a Thing speak channel to generate graphs for analysis. Online and offline communication methods are proposed in this system. When project get power it'll initialized ESP Module which is used to communicate the hardware with the web server. The appropriate commands are used to initialize the ESP Module. In case any problem occur like weak Wi-Fi signal or else server response error controller automatically change the inner system to communicate with the offline using GSM module.

Keywords: GSM, ESP Module, IOT.

ICEEE138: RASPBERRY PI BASED TRANSMISSION LINE MONITORING AND CONTROLLING USING IoT

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Abstract: Automation of farm activities can transform agricultural domain from being manual and static to intelligent and dynamic leading to higher production with lesser human supervision. This project proposes an automated irrigation system which monitors and maintains the desired soil moisture content via automatic watering. Microcontroller is used to implement the control unit. The setup uses soil moisture sensors which measure the exact moisture level in soil. This value enables the system to use appropriate quantity of water which avoids over/under irrigation.IOT is used to keep the farmers updated about the status of sprinklers. Information from the sensors is regularly updated on a webpage using GSM and ESP8266 modem through which a farmer can check whether the water sprinklers are ON/OFF at any given time. Also, the sensor readings are transmitted to a Thing speak channel to generate graphs for analysis. Online and offline communication methods are proposed in this system. When project get power it'll initialized ESP Module which is used to communicate the hardware with the web server. The appropriate commands are used to initialize the ESP Module. In case any problem occur like weak Wi-Fi signal or else server response error controller automatically change the inner system to communicate with the offline using GSM module.

Keywords: GSM, ESP Module, IoT.

ICEEE139: CIRCUIT BREAKER MONITORING AND CONTROLLING BY USING IoT

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Abstract: This Paper Presents circuit Breaker monitoring and control by using Internet of Thing (I.o.T). Circuit breaker is an important component of industrial Electrical System. It is used for protection and switching. The reliable operation CBs are of utmost importance. The IoT based system allows objects to be sensed or controlled remotely across existing network infrastructure, creating opportunities for more direct integration of the physical world into computer based systems and resulting in improved efficiency, accuracy and economic benfits with the added merits of human intervention. In this paper, an attempt was made to develop monitoring and control scheme of typical circuit breakers using Arduino UNO WIFI rev2 embedded microprocessor along with Ethernet shield for integration of Internet of Things. Circuit breakers parameters like load current, trip coil current, close coil current, spring charging motor current, number of closing operation, number tripping operations etc. are monitored. To monitoring and control the overvoltage & overcurrent. The monitored data are uploaded to Internet of Things platform "ThingSpeaks" in order to make circuit breaker data available on the fly for effective decision making. This paper is on effort to develop automated circuit breaker monitoring and control system that diagnose the electrical and mechanical health of circuit breaker in real time.

Keywords: Arduino UNO, circuit breaker, IoT.

ICEEE140: DESIGN OF HIGH STEP UP QUASI Z-SOURCE DC-DC CONVERTER

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Abstract: A high step up Quasi-Z Source DC to DC converter is proposed in this paper. This converter utilizes Switched capacitors and inductor strategy so as to reach high voltage gains. The proposed converter have settled the voltage gain impediment of the essential QZS DC DC converter while keeping its fundamental favourable circumstances, for example, and less stress on capacitors. Contrasted with the fundamental converter, the duty cycle isn't restricted, and the voltage stress on the diodes and switch isn't expanded. Renewable energy such as solar energy is taken as the input and battery issued for storage purpose. The proposed converter has an adaptable structure, what's more, additional stages could be added to it so as to accomplish even higher voltage gains without expanding the voltage stress. The proposed converter is simulated using the MATLAB software.

Keywords: Z-source converter, PV system, Maximum Power Point, Irradiation, High gain.

ICEEE141: ELECTRIC VEHICLE BATTERY CHARGER BASED ON INTERLEAVED CUK CONVERTER USING PID CONTROLLER

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Abstract: This paper presents the design and implementation of battery charger with interleaved (IL*)* Cuk converter followed by a fly back converter for constant current and voltage control without current feedback. This constant current charging control can be done by limiting the duty cycle of charger. So, the current feedback signal is not necessary and in that way reducing the cost of A/D converter, current sensor, and computation complexity necessary for current control. Additionally, when the battery voltage is improved to the preset voltage level by means of constant current charge, the charger changes the control mode to constant voltage charge. A fly back converter based charger is designed and employed for Uninterrupted Power Supply (UPS) system. Additionally, IL CUK Converter is implemented to obtain the stability of the fly back converter.

Keywords: Electric Vehicle, Battery Charger, Cuk Converter, DICM mode, Power Quality (PQ)

ICEEE142: CONTROL OF GRID CONNECTED PV INVERTER USING MODULAR MULTILEVEL CONVERTER BASED ON ARTIFICIAL INTELLIGENCE CONTROL

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Abstract: The control and modeling of modular multilevel converter (MMC) with grid-connected photovoltaic system comparing the analysis with fuzzy logic based on MPPT for tracking maximum power from photovoltaic modules. The mathematical modeling and simulation of photovoltaic energy is implemented in the MATLAB/SIMULINK are tested and validated. In this project, the fuzzy tuned PI controller is designed and implemented to overcome this problem. The fuzzy logic controller strain the controller gain based on the operating point of the system. The improved performance parameter such as tracking of the reference current with low overshoot, faster transient response and short settling time with system parameter changes under partial shading of the proposed controller are validated.

Keywords: Photo Voltaic (PV), Maximum Power Point Tracking (MPPT), Modular Multilevel Converter (MMC), Boost converter.

ICEEE143: DESIGN AND IMPLEMENTATION OF SMART AGRICULTURE SYSTEM USING SOLAR POWER

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Abstract: A Solar powered pumping system method needs to take proper account of the fact that demand for irrigation system water varies throughout the year. Solar-powered systems are being preferred for use in developing countries instead of other forms of alternative energy because they are extremely durable and can also exhibit long-term economic benefits. Solar powered water pumping systems can be the most appropriate solution for grid-isolated rural locations in poor countries where the levels of solar radiation are extremely high.The solar PV panels have proven in time their ability to reliably produce sufficient electricity directly from solar radiation to power livestock and solar irrigation systems. Solar water pumps find their use mainly in small scale or community based irrigation fields, as large scale irrigation requires large volumes of water which in turn requires a solar PV array extremely large in size. As the water maybe required only during some parts of the year, a large PV array would provide excess energy which isn't necessarily required, thus making the system in efficient. Drip irrigation is artificial method of supplying water to the roots of the plant. It is also called micro irrigation. In past few years there is a rapid growth in this system.

Keywords: Solar powered pumping system, Drip irrigation, Solar PV panels.

ICEEE144: SOLAR POWERED SEMI AUTOMATIC PESTICIDE SPRAYER

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Abstract: The solar sprayer has many advantages. Besides reducing the cost of spraying, there is a saving on fuel/petrol. Also, the transportation cost for buying petrol is saved. The solar sprayer maintenance is simple. There is less vibration The operation of solar powered pumps is more economical mainly due to the lower operation and maintenance costs and has less environmental impact than pumps powered by an internal combustion engine (ICE).

Keywords: Solar sprayer, Internal Combustion Engine (ICE).

ICEEE145: SOLAR POWER USING SEPIC CONVERTER FOR VARIABLE LOADS

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Abstract: Photovoltaic (PV) energy is one of the most important renewable energy sources. The most advantage using Solar Energy is that this is distributed over a wide geographical area, ensuring that developing regions such as India have access to electricity generation at a stable cost for the long – term future. The methodology is based on connecting a pulse width modulated dc/dc SEPIC converter, which is controlled by a microprocessor based unit. The SEPIC converter is one of the buck-boost converters which maintain the output voltage as constant irrespective of the solar isolation level. By adjusting the switching frequency of the converter the maximum power point has been achieved. The resulting system has high efficiency, low cost and can be easily modified. The tracking capability has been verified experimentally with a 10 W solar panel under a controlled experimental setup.

Keywords: Photovoltaic (PV) energy, SEPIC converter, Switching frequency.

ICEEE146: PLASMONICS: PRINCIPLES AND APPLICATIONS

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Abstract: Nano photonic structures that can yield improvement of the eminent robust light matter interactions on condition that by plasmonic material. To influence and control the light at nano scale dimensions by plasmon formed on nanostructure. In research lateral, the more recent progress of Nano- science has made a revolution. Surface plasmon polaritons (SPP) are formed when plasmonic materials are in metallic structures that support electromagnetic oscillations. Surface plasmon resonances (SPRs), has good responds to the dielectric materials in contact with the metallic surface at visible/near-infrared wavelength. Plasmonics has provided plenty of application likesensors, waveguides and optical devices.

Keywords: Plasmonics, Fabrication, Finite element method

Introduction

An electromagnetic field generated at the interface between a metal and a dielectric material can oscillate the free electrons in the metal as the field (at the same frequency). Such a collective excitation of electrons or oscillations of electrons known as a surface plasmon (SP). When scattered by a surface imperfection such as a ridge or groove, it will travel along the interface (under the correct conditions) and can be transformed back into a freely propagating field. When compared to the wavelength of the EMF by which it is generated, the wavelength of an SP is much smaller. The possibility of ultra-compact "plasmonic" devices is suggested by the previous comparison. In such devices information carrying electromagnetic fields generate SPs that are then processed before being turned back again into a free field. The discovery of plasmon-enhanced transmission via sub wavelength size hole arrays and single sub wavelength holes in metal plates sparked a flurry of research into Nano scale plasmonic devices. Plasmonic couplers, waveguides, interferometers, lasers, and dichroic splitters have all been shown. However, controlling the direction in which SPs are fired is required for the field of plasmonics to reach its full potential.

This paper defines the plasmonic phenomena and describes the Drude, Drude Sommerfeld, Drude Lorentz Debye; Brende Borman models for calculations of dispersion permittivity of plasmonic Material like gold etc. are discussed. Helholtz's equations for surface plasmon polariton (SPP) waves, their solution and dispersion characteristics on the flat and cylindrical interface insulator semiconductor) conductor are described. The dispersion characteristics of EM waves propagating along the flat gold/silver Tin interfaces and also dispersion characteristics of polarized modes for gold cylinders with different radii are discussed.

Basic Principle

The rapid development of micro- and nanofabrication technology stimulated the studying of nano photonics and its branches such as plasmonics, meta materials (composite materials engineered to have a property that is not found in nature) for high-speed data transmission, sensitive optical detection, manipulation of ultra-small objects, and visualization of Nano scale

patterns. Nano photonics studies the interaction of nanometer-scale objects such as nano metal particles, Nano crystals, semiconductor Nano dots (very small semiconductor particles) with light.

Plasmonics considers the interaction between EM waves (light) and free (conduction) electrons in conductors (metals, semimetals, semiconductors). The collective oscillations of free electrons in semiconductors stimulated by electric field components of an EM wave can have a frequency close to that of the acting EM wave. Plasma oscillations are fast oscillations of the electron density in conductingmedia such as metals or plasmas.

Plasmonic Material

The optical density of states (DOS) in diverse materials substantially influences all types of light- matter interaction, which is a fundamental aspect of radiation-induced energy conversion processes. The DOS specifies the number of 'channels' in a medium for storing and/or routing electromagnetic radiation. Plasmonic materials are appealing for many of these applications because of their sub-wavelength light focusing capacity and DOS modification. The resonant collective oscillations of charge carriers known as plasmons that can be triggered by external light sources, implanted emitters, or thermal fluctuations give plasmonic materials their unique features. Long-range Coulomb forces drive the collective dynamics of volume plasmon oscillations, which can be modulated by modifying the spatial region occupied by electron plasma. Plasmons limited to metal-dielectric surfaces or thin metal films, in particular, interact with photons to create surface plasmon-polariton (SPP) waves. SPPs have flat dispersion characteristics and a shorter wavelength than free-space propagating waves, which have been investigated for information processing.

The plasmonic devices are capable of sub wavelength confinement and hence plasmonics forms the basis of the research area of nano photonics. Plasmonics and the recent birth of meta materials and Transformation Optics are currently driving the development of a family of novel devices with unprecedented functionalities such as sub wavelength waveguides, optical nano antennas, super lenses, optical invisibility cloaks, hyper lenses, planar magnifying hyper lens and light concentrators. Plasmonic materials are metals or metal-like materials that exhibit negative real permittivity. Most common plasmonic materials are silver and gold. However, many other materials show metal-like optical properties in specific wavelength ranges.

Plasmonic Meta materials can also be used to exploit surface plasmons to achieve optical properties not seen in nature. Plasmons are produced from the interaction of light with metal-dielectric materials. Under specific conditions, the incident light couples with the surface plasmons to create self- sustaining, propagating electromagnetic waves knew as surface plasmon polaritons (SPPs). Once launched, the SPPs ripple along the metal-dielectric interface. Compared with the incident light, the SPPs can be much shorter in wavelength. The properties stem from the unique structure of the metal- dielectric composites, with features smaller than the wavelength of light separated by subwavelength distances. Light hitting such a metamaterial is transformed into surface plasmon polaritons, which are shorter in wavelength than the incident light.

The plasmonic applications require materials with negative permittivity, clearly indicates that this requirement is satisfied for materials with a plasma frequency higher than the desired frequency of application. Because metals tend to have large plasma frequencies and high electrical conductivity, theyhave traditionally been the materials of choice for plasmonics.

Table: 1 Drude model parameters for metals. ω_{int} is the frequency of on set for inter band transitions

Metals	εint	ω_p(eV)	Γ(V)	ω_{int}(eV)
Silver	3.7	9.2	0.02	3.9
Gold	6.9	8.9	0.07	2.3
Copper	6.7	8.7	0.07	2.1
Aluminum	0.7	12.7	0.13	1.41

Applications

Various strategies for using surface plasmons in bio sensing applications have been developed:

1. For measurement of biomolecule absorption - Surface-plasmon-resonance (SPR) technology
2. As optical labels for biomolecule detection - Plasmonic nanomaterial
3. SERS - Surface-enhanced Raman spectroscopy
4. Surface - plasmon - enhanced fluorescence technology

The most mature bio sensing technology seems to be SPR but there are some other emerging approaches that offer higher sensitivity with less complicated instrumentation. Ranging from thin gold films to plasmonic nanoparticle and single plasmonic nanoparticle assemblies, different plasmonic materials are synthesized and engineered for various bio sensing strategies. Sandwich immuno-assay structures are usually applied for surface plasmon-based bio sensing. In this technique, plasmonic materials either serve as signal-transducing labels (strategies 1 and 2) or as signal-enhancing substrates (strategies 3 and 4). Surface plasmon-based bio sensing technologies are used to measure various types of biomolecules such as proteins, lipids, peptides, small molecules, RNA and DNA. On measuring such molecules, surface plasmon-based bio sensing can assist in diagnostics of infectious diseases, autoimmune diseases, cardiovascular diseases, inflammatory diseases, cancer, etc. The four bio sensing strategies using surface plasmons is focused on the following sections.

Surface-plasmon-resonance (SPR) technology based on surface plasmons is the most well established bio sensing technology. SPR captures protein targets since it detects variation in the reflectance properties of the surface of a sensor coated with probe protein. A beam of polarized light directed through a prism onto a noble metal (e.g., gold) film and reflected toward a light-collecting sensor. At a unique incident beam angle, the film reaches maximum surface plasmon resonance and this incident light is significantly absorbed as the electromagnetic energy transforms into surface plasmons. The angle depends on the wavelength of light, properties of the metal film, and protein absorption. Protein probes immobilized on the gold film capture target proteins and cause observable change of this angle, thus enabling measurement of the target protein.

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ICEEE147: FORECAST AND EFFICIENT ENERGY MANAGEMENT OF A MICROGRID WITH RENEWABLE ENERGY SOURCES

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Abstract: Substituting a single large power grid into various manageable micro grids is the emerging form for maintaining power systems. The hybrid power generation system is composed of a photovoltaic array, wind turbines, public power grid, electric loads, battery bank as a storage system and most importantly, an efficient energy management system (EEMS). An EEMS is responsible for the core functioning of a micro grid, which includes establishing continuous and reliable communication among all distributed generation (DG) units and ensuring well-coordinated activities. This project focuses on improving the performance of EMS. The problem at hand is the optimal scheduling of the generation units and battery storage in a micro grid. Therefore, EEMS should ensure that the power is shared among different sources following an imposed scenario to meet the load requirements, while the operational costs of the micro grid are kept as low as possible. We proposed new algorithm which is a new Demand Side algorithm which is done by forecasting. This project also focuses on low carbon emission to our environment.

Introduction

The low population density and plenty of natural resources, Chile's electricity supply shortage is a paradox. The Atacama Desert, Andes Mountains, long coastline, and strong agriculture provide the country with abundant distributed renewable energy resources that could, according to recent estimations, largely surpass the fast growing system's electricity demand. In addition, due to the geoconditions of extreme points in Chile, there still are several small settlements deep into the mountains isolated from the interconnected power system. In this context, renewable based technologies offer a solution to gather the distributed energy resources. Now a renewable based micro grid can be understood as a particular case of a more general concept called 'Smart grid', which is an interdisciplinary term for a set of technological solutions for electric power system management. Smart grid is understood to be the key enabling technology for renewable energy development, electric vehicle adoption, and energy efficiency improvements. It represents a vision for a digital optimization of electric power distribution and transmission grids as applied to current operations, enhancing the grid security, and opening up new ways of tapping alternative energy sources. By using the Internet protocol on home devices, the smart grid would be able to shuttle information back and forth between the distributed electric utilities and customers. In fact, the US Department of Energy has characterized a smart grid with the following set of attributes.

This microgrid is composed by a photovoltaic system, a wind park, 10 thermal units and a battery bank. The first step is to set up an initial feasible solution for thermal unit commitment, considering the use of renewable energy to meet the load. From these solutions is determined the start-up and shut-down of thermal units solving again a thermal unit commitment problem. The final step is to optimize a non-linear renewable-thermal dispatch, considering the nonlinear constraints associated to the modeling of renewable energy sources and assuming the start-ups and shut-downs of thermal units are known. The non-linear optimization problem is solved using genetic algorithms. Tsikalakis & Hatziargyriou describe a centralized control system for a micro grid. The controller is to optimize the operation of the micro grid during interconnected operation, i.e. the production of local generators DG and energy exchanges with the

distribution network are maximized. Two market policies are assumed to offer options to the demand for controllable loads, and this demand side bidding is incorporated in the centralized control system. The aforementioned characteristics and research proposals are applicable to a smart micro grid concept. An isolated grid with these new features is able to offer new development opportunities and perspectives for the local community. The resulting solution is also able to be interconnected to a power grid as a micro grid solution allowing the integration of the local energy resources. In this work, based on a specific real location in the north of Chile, a novel energy management system (EMS) for a renewable based micro grid is proposed. The EMS considers two days ahead forecast of renewable sources and a two days ahead prediction for electric consumption based on neural network model. Also EMS integrates a new demand side management scheme that provides signals for consumers. The EMS includes the non-linear constraints associated to the modelling of both units, and objective function. These constrains are represented by piecewise linear models, binary variables, etc. Therefore, the optimization problem is solved using mixed integer linear programming ensuring the near-optimality. This advantage is not presented in the previous works described that used Lagrange relaxation, genetic algorithms and others.

Block Diagram

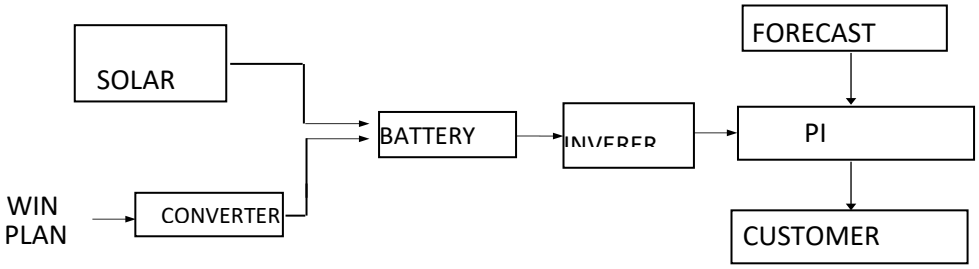

Figure.1 Block diagram

Solar Plant

Knowing the fact that fossil fuels are not going to last forever, solar power generation seems to be leading the path in clean and renewable energy generation among all other renewable sources of energy production. China which once seems world's largest polluter has now developed the largest solar power plant. Furthermore by 2020 India is aiming to produce 100,000 MW of electricity from solar power plant only. Tesla has taken the initiative to power up the Kauai island of Hawaii through solar power plant only. Tesla is providing its industrial battery packs, to store the energy of sun to be used at night. They are ensuring that they can light up the entire island without sunshine for as long as 3 days. And gets recharged back in just 7 hours of sunlight, isn't that amazing! Efficient production of power from sunlight is the leading topic of research all around the globe. Let's just figure out what it takes to convert sunlight into electricity.

Working Principle

The working principle is that we use the energy of photons to get the drift current flowing in the circuit using reversed bias p-n junction diode (p-type and n-type silicon combination).

Main Components

Solar Panels:

It is the heart of the solar power plant. Solar panels consists a number of solar cells. We have got around 35 solar cells in one panel. The energy produced by each solar cell is very small, but combining the energy of 35 of them we have got enough energy to charge a 12 volt battery.

Solar Cells

It is the energy generating unit, made up of p-type and n-type silicon semiconductor. It's the heart of solar power plant.

Battery

Batteries are used to produce the power back or store the excess energy produced during day, to be supplied during night.

D.C. to A.C. Converter (Inverter):

Solar panels produce direct current which is required to be converted into alternating current to be supplied to homes or power grid.

Working of Solar Power Plant

As sunlight falls over solar cells, a large number of photons strike the p-type region of silicon. Electron and hole pair will get separated after absorbing the energy of photon. The electron travels from p-type region to n-type region due to the action of electric field at p-n junction. Further the diode is reversed biased to increase this electric field. So this current starts flowing in the circuit for individual solar cell. We combine the current of all the solar cells of a solar panel, to get a significant output.

Energy Storage

Storage of the energy generated by the solar panels is a important issue. Sometimes the unused energy generated during daytime is used to pump water to some height, so that it could be used to generate electricity using its potential energy when required or mainly at night time. For current being Tesla is providing its industrial energy pack to store energy and currently it is lighting up an entire island. Tesla has also made an offer to Australia that it could provide its battery pack for emergency blackouts. The cost of manufacturing of solar panels has decreased rapidly in last few years, same is said to be true with the industrial energy pack (Lithium ion batteries), as the production and demand increases their cost is going to decrease in coming few years.

Basic Types of Inverters

During the conversion process, the voltage is also increased. But due to Ohms Law we know that an increase in voltage also leads to a decrease in current, so the overall output current is decreased when the DC Signal is converted into an AC one. Depending upon this working, there are two main types of inverters:

- Stand Alone Inverters
- Grid Tie inverters

A small description of these inverters is given below so that you can know the basic difference in their working principles. In our later tutorials, they would be described the best possible detail.

Stand-alone Inverters

These are the basic type of inverters, which along with the inversion of DC to AC, also produce increase the amplitude of the voltage and hence produce a change in the frequency. The output of these types of inverters is a sine wave usually, but in some cases the output gets distorted due to several reasons and appears in the form of a modified sine wave or a square wave.

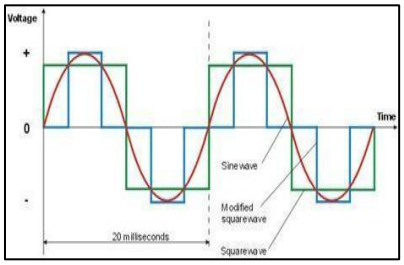

Figure.2 Modified Sine Wave

Full-Bridge Boost Converters

Full-bridge boost converters are very attractive for applications where an output dc voltage that is considerably larger than the input voltage is needed. Such applications include fuel cell power conversion, medical power supplies, and power supplies for electrostatic applications. These converters are essentially boost converters that contain a step-up transformer so that they can do additional voltage "boosting" without the very large duty ratios (D) needed with the boost converter. The converter operates like a boost converter as the current in inductor Lin is increased whenever switches from the same leg are on and it is decreased whenever a pair of diagonally opposed switches is on as energy is transferred to the output through the transformer and the output diodes. It should be noted that there must always be a path for the input inductor current to flow through the full bridge switches at all times.

Soft-Switching in PWM Bidirectional Dc-Dc Converters

Bidirectional Dc-Dc converters allow transfer of power between two dc sources in either direction. In recent years the use of these converters has increased in fuel-cell applications, photovoltaic applications, un interruptible power supplies (UPS) and hybrid electric vehicles. In order to reduce the size and weight of the converter, higher switching frequencies are used to operate these converters so as to decrease the size of the filtering components. When the switching frequency increases, switching losses and EMI (electromagnetic interference) rise in the circuit, which deteriorates the efficiency of the converter, so soft switching techniques are applied to high frequency converters.

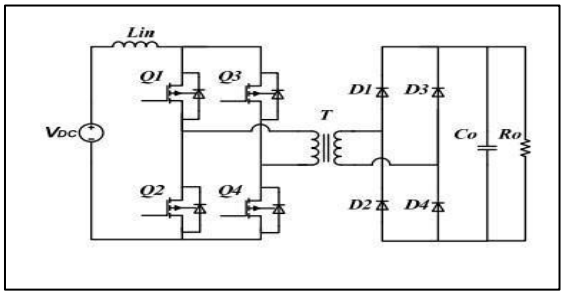

Figure.3 Full-bridge boost Dc-Dc converter

Zero voltage switching (ZVS) or zero current switching (ZCS) is used to create soft switching in conventional PWM converters using auxiliary circuits. In [1] the auxiliary circuit used could achieve ZCS for the main switch in one direction and ZVS in the other direction, but forced the use of different types of switches for each direction of power flow. Due to the complexity of power flow in bidirectional converters, it is more challenging to develop soft switching techniques in these circuits; therefore it is desirable to use an auxiliary circuit to provide soft switching in both power flow directions (buck and boost mode). In some of the previously proposed bidirectional converters two auxiliary circuits are employed to achieve soft switching when the power flows in both directions.

A novel series-resonant (SR) BDC topology and its control strategy are proposed in this paper. Close observation indicate that the proposed resonant BDC has the following features:

- The voltage gain of the converter is only determined by the duty cycle of primary-side switches. Therefore, simple PWM control is used to regulate the transferred power
- Voltage regulation in a wide voltage range is realized through simple PWM control
- Zero-voltage-switching (ZVS) for all of the Switches is achieved within wide voltage and load ranges
- The switching frequency is fixed at the resonant frequency of the series-resonant tank, which simplifies the design of the magnetic components.

PI Controller

PI control is needed for non-integrating processes, meaning any process that eventually returns to the same output given the same set of inputs and disturbances. A P-only controller is best suited to integrating processes. Integral action is used to remove offset and can be thought of as an adjustable

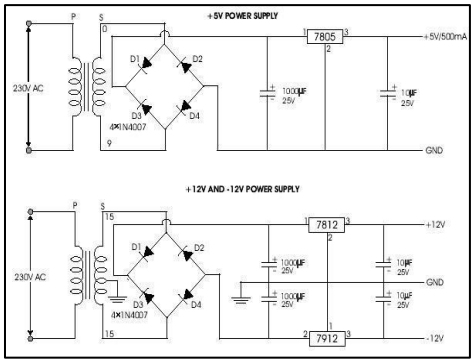

Figure.4 Circuit Diagram of Power Supply

Working Principle

The AC voltage, typically 220V rms, is connected to a transformer, which steps that ac voltage down to the level of the desired DC output. A diode rectifier then provides a full wave rectified voltage that is initially filtered by a simple capacitor filter to produce a dc voltage. This resulting dc voltage usually has some ripple or ac voltage variation. A regulator circuit removes the ripples and also remains the same dc value even if the input dc voltage varies, or the load connected to the output dc voltage changes.

Block Diagram

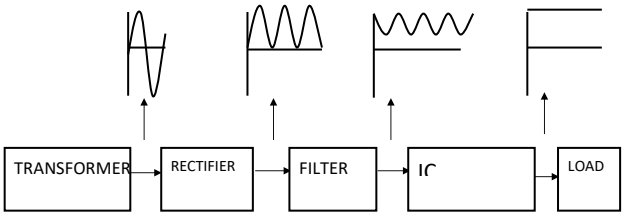

Figure.5 Block diagram of power supply

Transformer

The potential transformer will step down the power supply voltage (0-230V) to (0-6V) level. Then the secondary of the potential transformer will be connected to the precision rectifier, which is constructed with the help of OP-amp.

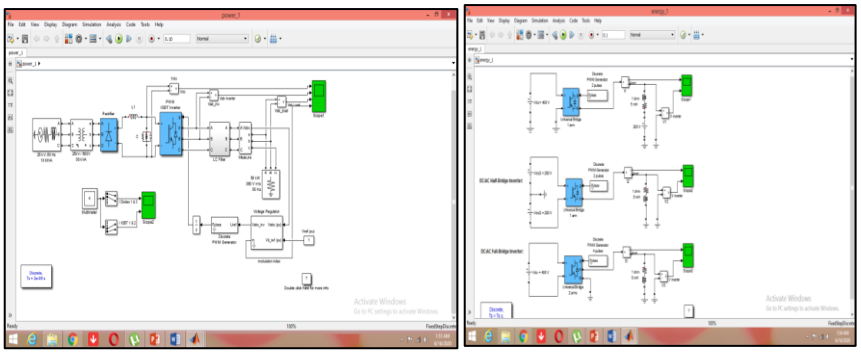

Figure.6 Excepted outcome

Hence, the design aspects of renewable energy based micro grid are discussed in this paper. The study is conducted for an urban building having 3.4 MWh/day priority load along with a 3.3 MWh/day deferrable load. The levelized cost of energy of such system is expected to be 0.092 $/kWh which is less than the grid-only connected system. From sensitivity results, it is expected that the system works satisfactorily in a range of varying scenarios such as solar radiation, Wind speed and increase in energy consumption. Besides, the system is environment friendly and beneficial for sustainable development which leads to annual cost savings and reduces CO_2 emissions.

Discussion

Hence, the design aspects of renewable energy based micro grid are discussed in this paper. The study is conducted for an urban building having 3.4 MWh/day priority load along with a 3.3 MWh/day deferrable load. The levelized cost of energy of such system is achieved as 0.092 $/kWh which is less than the grid-only connected system. From sensitivity results, it was observed that the system work satisfactorily in a range of varying scenarios such as solar radiation, wind speed and increase in energy consumption. Besides, the system is environment friendly and beneficial for sustainable development which leads to annual cost savings and reduces CO_2 emissions.

Result

The study was conducted for an urban building having 3.4 MWh/day priority load along with a 3.3 MWh/day deferrable load. The levelized cost of energy of such system is expected to be 0.092 $/kWh which is less than the grid-only connected system. From sensitivity results, it was achieved that the system works satisfactorily in a range of varying scenarios such as solar radiation, Wind speed and increase in energy consumption. Besides, the system is environment friendly and beneficial for sustainable development which leads to annual cost savings and reduces CO_2 emissions.

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ICEEEI01: AN EFFICIENT DIRECT MPPT FOR PV SYSTEM UNDER EXTREMELY FAST CHANGING IRRADIANCE

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Abstract: Photovoltaic cells require of Maximum Power Point Tracking (MPPT) algorithms to ensure the amount of power extracted is maximized. True seeking, direct duty cycle control MPPT algorithms are a simple and straightforward solution that can provide high tracking efficiency. In these algorithms the duty cycle is traditionally modified to reach a new steady state prior performing a new MPPT iteration. Therefore, the MPPT update period must be larger than the converter's settling time to reach a new steady state, which limits the dynamic trackingperformance. This work proposes a novel direct duty cycle control method that does not require the converter to achieve steady state in between MPPT updates. The proposed method benefits from the natural oscillations occurring in the converter to obtain extreme dynamic tracking improvements while maintaining simple implementation with no need of employing temperature or irradiance sensors. The scheme being introduced combines MPPT concepts with large-signal geometric control to achieve a reliable, high-performance solution very suitable for applications with rapidly changing irradiance such as wearable technology and rooftop EV. The proposed onevalidated by simulations and experimental results.

Keywords: Maximum Power Point Tracking (MPPT), Duty cycle, Irradiance sensors.

ICEEEI02: A NEW TOPOLOGY OF MULTIPORT FIVE LEVEL INVERTER WITH REDUCED NUMBER OF SWITCHES

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Abstract: Presents a five-level multilevel inverter with reduced switching count, discussing its design features which contribute to less switching losses and Total Harmonic Distortion for motor drives .The proposed multilevel inverter in its circuit layout has solved the challenges of using more than one independent DC sources and many power components to achieve 5 -level voltage with less harmonic contents, and thus the conduction and switching losses are reduced.

It is depicted that the design produces the output with THD in a recommended standard range, which ensure reasonable voltage stress to motor bearings. To demonstrate these contributions in real time, experiments on the circuit design based on nonlinear constant load have to beperformed. Also in future researches, this THD can be improved more by the use of another digital modulation control technique.

Keywords: Total Harmonic Distortion (THD), Five-level multilevel inverter.

ICEEEI03: A NOVEL TPC CONVERTER FOR HYBRID RENEWABLE ENERGY SYSTEM

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Abstract: This project presents the design, modeling and control of a three-port (TPC) isolated dc-dc converter based on interleaved-boost-full-bridge with pulse-width-modulation and phase-shift control for hybrid renewable energy systems. In the proposed topology, the switches are driven by phase-shifted PWM signals, where both phase angle and duty cycle are controlled variables. The power flow between the two inputs is controlled through the duty cycle, whereas the output voltage can be regulated effectively through the phase-shift. The primary side MOSFETs can achieve zero-voltage switching (ZVS) operation without additional circuitry. Additionally, due to the ac output inductor, the secondary side diodes can operate under zero current switching (ZCS) conditions. In this work, the operation principles of the converter are analyzed and the critical design considerations are discussed. The dynamic behavior of theproposed ac inductor based TPC is investigated by performing state-space modelling. The experimental results show that the two decoupled control variables achieve effective regulation of the power flow among the three ports.

Keywords: Interleaved-boost-full-bridge, Zero current switching (ZCS).

ICEEEI04: IoT BASED SOLAR PANEL FAULT MONITORING AND CONTROL

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Abstract: This project presents a hardware design of smart grid home gateway that integrates smart home network to be compatible for smart grid integration with solar system for fault location identification. Solar power plants need to be monitored for optimum power output. This helps retrieve efficient power output from power plants while monitoring for faulty solar panels, connections, and dust accumulated on panels lowering output and other such issues affecting solar performance. The Internet of Things (IoT) is the network of physical objects or "things" embedded with electronics, software, sensors, and network connectivity, which enables these objects to collect and exchange data.The project is based on microcontroller board designs, manufactured by several vendors, using various microcontrollers.

Keywords: Internet of Things (IoT), Smart grid.

DEPARTMENT

OF

ELECTRONICS AND COMMUNICATION

ENGINEERING

ICECE102: LOW POWER SCALABLE, HIGH PERFORMANCE VOLATILE MRAM BASED FPGA

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Abstract: In this paper, we propose a new structure of FPGA based on Low Power MRAM technology; we name it LP-MFPGA (magnetic FPGA). FPGA based on SRAM technology has been developed in the last years, because of its high speed and near limitless number of reprogramming, however SRAM is volatile thereby the configuration information and the intermediate data will be lost when power is turned off. By using MTJs (magnetic tunnel junction) as the storage elements of FPGA, we can realize the non-volatility of FPGA, and then we will not need the external memory. In our simulation, the start-up time of circuit can be decreased up to some hundred pico seconds. Except for the rapid start-up time, we can also configure the algorithm and logic function of the FPGA circuit very simply and rapidly. The other advantage of using LP-MRAM technology is that we will not enlarge the circuit surface, because the storage element MTJs are on the semiconductor surface. The proposed cell is dynamically reconfigurable in the background, which makes it a proper alternative to replace the SRAM cells of conventional field-programmable gate arrays (FPGAs) for the development of NV-FPGAs.

In this design the cache memory architecture allows to change the memory organization and size of its memory by using a cache size controller unit and way controller unit, to improve the processor performance and reduces the energy consumption, and using all available memory size for all possible organization that can be selected. The results show the simulation of the design. This design is synthesized using (Xilinx ISE Design Suite 12.1) and simulated using (Xilinx ISim simulator).

Keywords: NV-FPGAs, SRAM, Magnetic tunnel junction

ICECE103: BABY MONITOR AND ALARAM SYSTEM USING IOT

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Abstract To design the system that automatically detects baby's humidity (moisture sensor), falling detection and crying detection sensor. The system continuously monitor the baby's body wetness , movement, and while the baby is crying it will automatically make a sounds of rattle in the cradle,this inform the parents or care taker on high temperature by buzzer. The information is given as sound using local alarm.

Keywords: Humidity,Cradle

ICECE104: AN ADAPTIVE BACK GROUND SUBTRACTION BASED ON MOVING OBJECT DETECTION

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Abstract To provide fast and reliable algorithm for moving object detection for making of video surveillance systems. Propose a new method to detect moving object based on adaptive background subtraction. reduce the amount of noise and the time delay caused by processing of pixels by grouping the pixels in the picture frame as 2 × 2 non-overlapped blocks . reduce normalization process & update time of background model using adaptive threshold parameter

Keywords: Back Ground Subtraction, Picture Frame

ICECE105: IOT BASED CROP FIELD MONITORING AND IRRIGATION AUTOMATION

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Abstract: The monitor the crop field using sensors. The identify temperature & moisture level of the soil.The send the data of sensor to node mcu & send to the adafruit IO to display the data & to ON/OFF the motor and stored in database after that data processing and decision making is done based on threshold value & automatic irrigation is done. The retrieve the data from the sensor for every 5 sec for monitoring the field.
.

Keywords: Monitor,Threshold value

ICECE106: APPLICATIONS OF COMPLEX ANALYSIS IN ELECTRONICS ENGNEERING

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Abstract: Complex analysis is a mathematical tool as extensive applications in mathematics, physics and engineering. Complex numbers are used to analyzing and understanding alternating signals much easier. In electrical engineering, the Fourier transform is used to analyze varying voltages and currents. The treatment of resistors, capacitors, and inductors can then be unified by introducing imaginary, frequency-dependent resistances for the latter two and combining all three in a single complex number called the impedance. The complex analysis use is also extended into digital signal processing and digital image processing, which utilize digital versions of Fourier analysis (and wavelet analysis) to transmit, compress, restore, and otherwise process digital audio signals, still images, and video signals. In this mathematical concept we try to is used in 3-D designing of electrical network both AC & DC circuits.

Keywords: Complex analysis, 3-D AC & DC Circuits.

ICECE107: DESIGN AND IMPLEMENTATION OF THE RF POWER DETECTOR USING VARACTOR DIODE

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Abstract: This paper presents the design and implementation of the RF power detector using varactor diode that is operating at 2.4GHz using microstrip. The design of diode detector circuit is simulated using Keysight ADS software tool. The design of the diode detector includes matching network, varactor diode and the low pass filter. RF power detector is a device which changes the sinusoidal RF signal in the DC voltage for the purpose of measuring the power level of a signal .A high sensitivity and a video detector are implemented in standard 65nm CMOS technology with resistive input matching. The DC power consumption of the high sensitivity detector and the video detector is 0.029mW and 0.8mW. The paper also present the fabrication and the measurement of the designed circuit. Varactor are operated in a reverse-biased state , so no current flow through this variable junction capacitance , but varactor are manufactured to and the analyzed parameter are the S11,S21, and VSWR. A good design of return loss which is less -20dB.Diodes being used for the RF and microwave power measurement since long time ago but were only limited to frequencies . RF detectors are mainly used in many applications. There are mainly used for transmitter output power measurement and control.

Keywords: VSWR, CMOS, ADS

ICECE109: RFID USING WINDOWS PC LOCK/UNLOCK

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Abstract: How often have you felt tired of typing in the password to unlock your PC/laptop every time it got locked? I'm used to locking it down quite a number of times, everyday, and nothing is more annoying than typing the password/pin over and over again, every-time I want to unlock it.Although Keeping An Easy Password may lead to risk of easily being hacked. When the need for something becomes essential, you are forced to find ways of getting it. As the saying goes, "necessity is the mother of invention", the lazy mind in me started to think of an easy and a cheap way to unlock my personal Computer/Laptop every time I had to lock it. As I went through my stuff I found a RC522 RFID module. That's when I decided to make an RFID system. RFID**:** Radio-frequency identification (RFID) is one of the oldest wireless technology. RFID chips are used to store information digitally, which can then be shared between objects through electromagnetic fields and radio waves. It may not be super-advanced, but many makers see real potential in the technology, no matter how old.In this project I'll be explaining how to make a simple RFID system that can lock/unlock your windows computer with just a flick of an RFID card/tag. With this system in place no more hassles of unlocking your Laptop/PC every-time you lock it down.

Keywords: RFID,Lock/Unlock

ICECE110: PROLIX SLOTED MICROSTRIP PATCH ANTENNA FOR ISM BAND APPLICATION

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Abstract: Due to the exponential growth in wireless communication, the compact antenna is needed to be more advanced and accurate. So, the designs of the antenna must have better output results. This paper presents the design of prolix slotted microstrip patch antenna for Industrial, scientific and medical (ISM) band applications. This antenna design is having one spiral shaped slot, eight circle shaped slots and two rectangle shaped slots into it and it resonates at 2.4GHz frequency. Microstripline feed is used as the feeding technique in this design. In this spiral slotted shaped antenna, the conducting material copper is used with ground structure about 0.026 mm thickness, patch structure about 0.026mm and it was printed on 2mm thick with dielectric Rogers substrate(dielectric constant=9.8) which has high permittivity. The result of the antenna is gain-2.18dBi,VSWR-1.490, reference impedance 50 ohms and return loss is -14dB are investigated. The simulation is done by using the CST(computer simulation tool) Software

Keywords: CST, ISM, roger, copper, gain, bandwidth, VSWR, return loss

ICECE111: HIGH GAIN TRIPLE BAND NOTCHED UWB PLANAR MONOPOLE ANTENNA DESIGN

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Abstract: In this project presents a design of planar monopole antenna with triple band notched for achieving UWB characteristics and simulation of its parameter using Computer Simulation Technology. The antenna has a unique shape and has been fed through a 50 Ω microstrip feedline. The strength of the antenna lies in three band notched properties for WiMax system at 3.3 - 3.7 GHz, WLAN IEEE 802.11a at 5.15 - 5.85 GHz and X band satellite communication at 7.25 - 8.395 GHz. The notched bands have been achieved by incorporating an inverted Uslot etched on the radiator patch, an inverted C-slot also on the radiator patch and a U-slot on the microstrip feed line. In order to achieve FCC defined impedance bandwidth of 7.5 GHz, a rectangular cut in the ground plane has been introduced along with staircase structure in the bottom edge of the radiator. The proposed antenna is having a compact size of 30 X 30 X 1.6 mm3 and exhibits a large bandwidth from 2.8 GHz to 10.7 GHz. The antenna has been successfully simulated and fabricated. The radiation pattern is Omni-directional in H-plane and the E-plane exhibits dipole like radiation pattern. The gain of the antenna is stable across the whole operating frequency band except at three notched bands.

Keywords: Ultra-wideband (UWB), Triple band-notched antenna, planar UWB antenna, slotted ground plane, C-shaped slot, U-shaped slot, WLAN, WiMax

ICECE113: DESIGN A WEARABLE ANTENNA USING JEAN FABARIC

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Abstract: In field of wearable technology one testing improvement is wearable material reception apparatus. Essential necessity for wearable material receiving wires are adaptable development materials which incorporates texture with planar structure. Properties of the material receiving wire, for example, data transfer capacity, proficiency, input impedance and so on rely on sort of substrate materials utilized. These properties are for the most part controlled by the substrate dielectric steady. Texture material dielectric steady precise worth is to be determined from resounding recurrence of fix antenna.In this venture, we exhibited a recreation put together investigation with respect to a wearable material (pants) recieving wire for 5G innovations with parametric examination. Ideal lengths of measurements for the radio wire is available for best return misfortune, increase and VSWR, radiation effectiveness and free space way misfortune. The transmitting component for fix and ground plane is produced using slender film copper foil. The proposed material recieving wire may discover its appropriateness in wearable applications, for example, the medicinal field and BAN (Body Area Network).

Keywords: VSWR, BAN (Body Area Network).

ICECE14: AUTOMATED INTELLIGENCE ROBOT USING RASPBERRY PI

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Abstract: Most of the robots are single task robots such as line follower, wall follower etc.these has to be developed to multifunctional. So that they can work based on their intelligence. Thus it has been developed by using raspberry pi with open-cv.Therefore here the robot detects the shape of each and every object. In order develop the function of robot the opencv has been used and they perform based on their intelligence.In this project the robot proves its intelligence by detecting the shapes and colors of the particular object based on the command given by the master to it.The previous version of robot was only mono tasking like line follower, wall follower, and obstacle avoidance etc.This robot is completely based on intelligence system.

Keywords: Robot,Intelligence.

ICECE15:A BRAIN WAVE SIGNAL FOR BIO-METRIC BASED WHEEL CHAIR CONTROL

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Abstract: This paper basically provides a real time model of a low cost wheel chair based on the guiding movement of the voice, for the persons disabled with quadriplegia.This model expected to benefit the poor paralyzed people as it provides a simplified low cost model of the wheel chair.The model is realized through data comparison in serial communication with the special purpose microcontroller IC.This is detected like an object cross in a transmitter and receiver, and it will intimate. In this paper voice is our object detected by using infrared signal serially interact with controller, which in turn, controls the wheel chair movements based on brain wave signal.Currently it is difficult for the persons suffering from stokes, amyotrophic lateral sclerosis (ALS) lead to complete paralysis and cannot communicate with the real world. Therefore the BCI system can be used to improve the quality of life of such patients.The system could also be realised as a standalone hardware unit and the same would be tested in the medical field

Keywords: ALS,BCI.

ICECE16: RFID BASED SMART SHOPPING MART MANAGEMENT SYSTEM USING ANDROID APPLICATION

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Abstract: We propose the use of RFID technology in the smart shopping system, as RFID passive tags have a longer range, from 1 to 5 m.Previous research on the design of smart shopping systems mainly focused on using low/high frequency RFID, which have inadequate ranges, and leave customers to manually scan items with an RFID scanner. In our proposed system, each smart cart is equipped with a RFID reader, a micro controller, an LCD display, a Wi-Fi Module.The smart cart is able to automatically read the items put into a cart via the RFID reader. A micro controller is installed on the cart for data processing and an LCD display and using that android mobile application can do QR reader payment through from our bank account.Then all the data's will be stored in our server. So admin can see all the details about product what are the products are sold out.

Keywords: RFID,LCD,Micro controller

ICECE17: OBJECT TRACKING

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Abstract: The use of change detection algorithms to identify regions of interest in video sequences has long been a stepping stone in high level surveillance applications. In their simplest form, they allow the subtraction of static background from scenes where relevant objects are always in motion. In most cases however, "foreground" objects may move intermittently (e.g. cars at a traffic light), they may not be focal points in a camera's field of view, and uninteresting background regions may also exhibit dynamic behavior. Foreground/background segmentation via change detection in video sequences is often used as a stepping stone in high-level analytics and application.The complex nature of dynamic scenes in real surveillance tasks. In this paper, we present a universal pixel level segmentation method that relies on spatiotemporal binary features as well as color information to detect changes.

Keywords: Traffic Light, surveillance.

ICECE119: DESIGN OF MICROSTRIP PATCH ANTENNA FOR WIRELESS COMMUNICATION

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Abstract: Double band U-shaped microstrip Patch Antenna array. High-speed wireless local area networks (IEEE 802.11a standard) and other wireless communication systems covers. Frequency bands – Wi-Max and C band with the mounted on a low-cost FR-4 substrate.FR-4 whose relative permeability is 4.4 H/m and a loss tangent of 0.02 is used for proposed design.CST , a planar 3D electromagnetic simulator is used in this work.

Keywords: 3D Electromagnetic Simulator,Wi-Max.

ICECE122: IMAGE DEBLURRING USING FUSION AND ELASTIC-NET

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Abstract: Image restoration technique is the process of recovering the high-resolution image from a Low-resolution image. It is an essential problem in computer vision. Existing methods can be addressed the quality of restored image, the computational efficiency of the algorithm, and the estimation of necessary parameters such as the point-spread function (PSF).The proposed method has been used wiener filter to produce an estimate of a desired filtering of an observed noisy image and minimizes the mean square error and innovative technique to solve this correspondence problem using an Intersection matrix and Elastic-net regularization along the canny edge detection. The proposed method provides the better elucidations that are effective in deblurring the blurry images with better computational complexity compared to the state-of-art methods.

Keywords: Point spread function (PSF), Wiener filter, Logical OR, Intersection point, Canny edge, Elastic-net.

ICECE123: IMPLEMENTATION OF BRAIN WAVE CONTROLLED ROVER

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Abstract: A brain computer interface is a new communication methodology between the human brain and a digital computer. An electroencephalogram (EEG) based brain computer interface, In which different brain states are the result of neural interaction .These patterns lead to waves characterized by different amplitude and frequencies. The signal generated by brain is received by the brain sensor data is transmitted to wireless medium (Bluetooth) the wave measuring unit will the brain wave raw data and it will convert into activation signal. The mind wave Bluetooth communicates with the external Bluetooth which passes the instruction to the controller and finally the rover executes the operations of the actuator will be developed from the electrical signal into mechanical operation (forward, backward, left, right movement of rover).

Keywords: Electroencephalogram (EEG), Bluetooth.

ICECE124: AUTOMATIC DETECTION OF CT LUNG IMAGE BY USING ARTIFICIAL NEURAL NETWORK WITH GAUSSIAN FILTER

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Abstract: Lung cancer is one of the dangerous and life taking disease in the world. Data today can indicate that its incidence continues to increase in women at 3.1% annually over the past 20 years; on the other hand, in men, an annual decline of 0.8% is also observed for the past 20 years However, early diagnosis and treatment can save life. Although, CT scan imaging is best imaging technique in medical field, it is difficult for doctors to interpret and identify the cancer from CT scan images. The main aim of this research is to provide a system for detection of lung cancer nodules from the Chest Computer Tomography image using the Artificial neural network with Gaussian filter.

Keywords: CT scan, Lung cancer.

ICECE125: DESIGN AND PERFORMANCE ANALYSIS OF 1:2 POWER DIVIDER FOR MICROWAVE CIRCUITS

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Abstract: This paper introduces a novel compact 1:2 power divider.It is a passive device used to couple and define the amount of electromagnetic power in the transmission line.It also called us power combiners when we use it in vice versa.The power divider has one input port and more than one output ports. In this work 1:2 power divider is proposed ,which provides the operating frequency above 2.4 GHz on microstrip lines used for microwave applications.This paper is to possess the splitted power equally at the output by transmission line.This work is simulated and verified by ADS software.The proposed methodology is to obtain stepped structure ,that designed on FR-4 substrate with thickness of 0.6mm.This simulation results indicates the 1:2 ratio gives half the input power to its output ports. The proposed power divider has a return loss of -37db and insertion loss of -3 db is finalized for testing and fabrication.

Keywords: ADS, Microstrip.

ICECE127: SMART SENSOR INTERFACE FOR ELECTRIC VEHICLE MONITORING IN IoT

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Abstract: The internet of things (IoT) provides a virtual view, via the Internet protocol, to a huge variety of real objects, ranging from a car, to a teacup, to a building, to trees in a forest. Life time extension possibilities, which are the result of application characteristics, by (i) reducing energy consumption (ii) easily find out the problems (iii) to improve the efficiency of vehicles (iv)to avoid vehicle theft. The internet of things is a network of physical object interface with software sensor, Network connectivity and electronics, which enables these objects to collect the data and exchange. Wireless sensor networks (WSN) are well suited for long-term electric vehicle data acquisition for IoT. This paper deals with the functional design and implementation of WSN platform that can be used for long-term electric vehicle monitoring in IoT application. The application requirements for low cost, high quality of service, long life time, low maintenance, fast deployment, low power are considered in the specific of this platform.

Keywords: Wireless sensor network, internet of things.

ICECE128: LEAF DISEASE DETECTION USING CONVOLUTION NEURAL NETWORK

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Abstract: Plant diseases problem can cause significant reduction in both quality and quantity of agricultural products. The main aim of this project is to develop an appropriate and effective method for diagnosis of the Anthracnose disease of Mango leaves and its symptoms, therefore espousing a suitable system for an early and also detect the fungal disease. The latest generation of Multilayer convolutional neural networks (MCNNs) has achieved impressive results in the field of image classification. The proposed system is classified by detection of Mango leaves infected by Anthracnose diseases using Multilayer convolutional neural network (MCNN).

Keywords: Multilayer Convolution Neural Networks.

ICECE129: SPY CAMERA AND MOBILE PHONE DETECTOR

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Abstract: The main scope of project is to sense the presence of an activated mobile phone and camera from a distance of one-and-a-half meters to prevent the use of same in the examination halls. Certain places where uses of mobile phones are not allowed like exam hall, temple, offices and theaters, in those places to detect and restrict the use of mobile phones this proposed system is very helpful. This system can detect any active cell phone i.e. when someone is trying to make a call or receive a call, sending a message or receiving a message. In the above mentioned conditions a buzzer will sound, in the presence of an active cell phone in the radius of one and half meters. In our day to day life the usage of mobile phones has been increased in restricted area such as exam venues, places of important meeting, offices, conference halls, prison etc. and the hidden wireless camera in trial rooms and hotels, public toilets. The radio frequency signals are transmitted from wireless camera and mobile phone during the video transmission, incoming call and outgoing call, text messages from one gadget to another. The detector will detect the transmitted signal and then it is gives as input to Arduino microcontroller. As soon as the Arduino microcontroller receives the signal, it will turn ON the beep alarm and the information will be displayed on the LCD display .This system will be used to detect the mobile phones and the wireless hidden camera present in a room by the radio frequency signals which are transmitted by them

Keywords: Wireless, Microcontroller

ICECE130: GLAUCOMA DETECTION IN RETINAL IMAGES USING IMAGE PROCESSING TECHNIQUES

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Abstract: Glaucoma is the second leading cause of loss of vision in the world. Examining the head of optic nerve (cup to disc ratio) is very important for diagnosing glaucoma and for patient monitoring after diagnosis. Image of optical cup and optical disc are acquired by fundus camera as well as Optical Coherence Tomography. These techniques are used to isolate the relevant parts of the retinal image and to calculate the cup to disc ratio. The main objective of this paper is to review "Morphology" methods and techniques for the disc and cup boundaries which are utilized to calculate the disc and cup geometrical parameters and accurately to help the professionals in the glaucoma to have a wide view and more details about the optic nerve head structure using retinal fundus images.

Keywords: Morphology, Glaucoma

ICECE132: OBJECT TRACKING ROBOT BY USING RASPBERRY PI WITH OPEN COMPUTER VISION (CV)

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Abstract: The primary point of the venture is to distinguish and follow the constant article it is significant idea in PC vision. So as to distinguish the article first make the essential and important stride to assemble data structure the numerous PC vision applications. This thought is utilized for reconnaissance reason, screen the military base, traffic observing and human machine communication. In this undertaking robots can recognize the object and pivot as left and right position and afterward push ahead and in reverse relies on the item development. It keeps up the consistent separation between the item and the robot. In the equipment arrangement we utilize the arm 11 raspberry pi camera to join the robot for identification of item. Camera is appended to the servos for dish and tilt. We use Linux OS with python coding to distinguish the item with open cv.

Keywords: PC Vision,Raspberry pi.

ICECI01: FACE TRACKING ALGORITHM FOR TRACKING TARGET IN WSN

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Abstract: Target tracking in wireless sensor network (WSN) is most important in surveillanceapplications. In existing work, a tracking framework called Face Tracking is used. A polygon region called face is constructed. The nodes that are grouped inside a face can communicate only among them. Brink detection algorithm is used to find a edge in which two nodes are connected has the best coverage area. An Optimal selection algorithm is used to select the nodes which cantrack the target with less energy usage. But if the target moves out of coverage area or if energyof the tracking node becomes low then the target may not be tracked exactly. To overcome this problem, a tracking scheme, called t-Tracking is proposed with an objective to achieve quality of tracking (QoT). Distributed tracking algorithm sends queries about the energy level and coverage area, to all the nodes in the face in which the target has to be tracked next. Based on the reply from all nodes, a node with best energy level and coverage area node will be selected for target tracking. Since a best node is selected, target can be tracked with accuracy.
.

Keywords: Wireless Sensor Network (WSN), Distributed Tracking Algorithm and t-Tracking.

ICECI02: FRAMELET BASED BLIND MOTION DEBLURRING FROM A SINGLE IMAGE

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Abstract: The goal of this paper is to develop a robust algorithm to recover a high –quality clear image of the scene from motion-blurred images. In our setting, the input images are passively captured by a commodity digital camera without any specific hardware. It is noted that the proposed wavelet algorithm could also be applied to removing motion blurring in the image with little modifications. Early works on motion deblurring usually use one single blurred image. Most such methods require a prior parametric knowledge of the blur kernel such that the blur kernel can be obtained by only estimating a few parameters. These methods usually are computationally efficient but only work on simple blurrings such as symmetric optical blurring or simple motion blurring of constant velocity. To remove more complicated blurring from images, an alternative approach is using a joint minimization.

Keywords: Blurrings, Commodity

ICECI03: SPACE-TIME BLOCK CODING (STBC) FOR WIRELESS NETWORKS

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Abstract: transmitter and receiver. The simulations have been done in MATLAB. The STBC which includes the aamouti Scheme as well as an orthogonal STBC for 4 transmit antenna case has been simulated and studied. Wireless designers constantly seek to improve the spectrum efficiency/capacity, coverage of wireless networks and link reliability. Space-time wireless technology that uses multiple antennas along with appropriate signalling and receiver techniques offers a powerful tool for improving wireless performance. More advanced MIMO techniques are planned for future mobile networks in wireless Local Area Network (LANs) and Wide Area Network (WANs). Multiple antennas when used with appropriate Space-Time Coding (STC) techniques can achieve huge performance gains in multipath fading wireless links. The Space Time Coding has evolved as a most vibrant research area in wireless communications.Recently, Space-Time Block Coding (STBC) has been trying to incorporate in the forthcoming generation of mobile communication standard which aims to deliver true multimedia capability. This paper presents the Space-Time Block Codes (STBC) for wireless networks that uses multiple numbers of antennas at both

Keywords: Space-Time Coding (STC), Maximal Ratio Combining (MRC), Rayleigh Fading, Transmit Diversity, Smart Antennas, Multiple Input Multiple Output (MIMO), QPSK, QAM

ICECI04: ADAPTIVE CLUSTERING BASED UNDERWATER WIRELESS SENSOR NETWORK COMMUNICATION

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Abstract: Water Pipeline Monitoring Systems have emerged as a reliable solution to maintain the integrity of the water distribution infrastructure. Various emerging technologies such as the Internet of Things, Physical Cyber Systems, and machine to-machine networks are efficiently deployed to build a Structural Health Monitoring of pipeline and invoke the deployment of the Industrial Wireless Sensor Networks (IWSN) technology. Efficient energy consumption is imperatively required to maintain the continuity of the network and to allow an adequate interconnection between sensor nodes deployed in the harsh environment. In this context, to maximize the Lifetime of the WSN underwater Distribution system domain is a primordial objective to ensure its permanently working and to enable a promising solution for hydraulic damage detection according to diverse performance metrics. In this context, the data aggregation techniques are welldesigned and various smart algorithms are developed to reduce the quantity of transmitted data and to minimize the energy consumption. In this project, we combine between data aggregation and clustering algorithm in order to improve the WSN Lifetime. Data aggregation applied in order to eliminate redundant data either from different sensor nodes at the same time or from the same sensor node at various time steps. NS2 simulator tool has been used to evaluate existing and proposed system performance. Then, efficient data aggregation allowing the redundancy elimination at the cluster and sensor node level improves more the results and reduces the energy consumption.

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Keywords: Wireless Sensor Networks,Physical Cyber Systems

ICECI05: INDIAN FOOD IMAGE RECOGNITION USING A DEEP LEARNING APPROACH

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Abstract: In Computer Vision, food image recognition is one of the most significant and interesting applications for visual object recognition. Due to huge diversity and varieties of food available across the globe, food recognition becomes very challenging. In this paper, a deep learning algorithm is implemented to recognize and classify 21 Indian food image categories. Since Convolutional Neural Network (CNN) is considered to be the best for image classification tasks because it automatically extracts and learns the features from the input images, we have developed a transfer learning approach using AlexNet for our task. For the experimentation, we used the dataset India-Food-21Categories-Small from Kaggle and we fine tuned the AlexNet architecture for our application. Since the dataset has only limited amount of images, the available dataset is augmented to enhance the system's performance. The fine tuned AlexNet architecture and augmented dataset has resulted an accuracy of 96.6% while trained for just 5 epochs which is a promising result.
Keywords.

Keywords: Deep Learning, Convolutional Neural Network (CNN), Indian Food Image Recognition, Data Augmentation.

DEPARTMENT

OF

MECHANICAL ENGINEERING

ICME101: PERFORMANCE ANALYSIS OF SOLAR DRYER WITH/WITHOUT PCM BASED STORAGE SYSTEM

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Abstract: Solar drying has recently received much attention, especially in tropical countries, since it is a process that requires low capital and operation costs and is also environmental friendly. Due to the inconsistency of the availability of solar energy, for continuous drying operation supplementary energy or storage based energy is required. The aim of the present work is to design and investigate the performance of a solar dryer for various mass flow rates. The performance analysis is made for with/without PCM was observed and useful heat gain and efficiency was calculated and both results are compared in this project.
Keywords: Solar energy, PCM

ICME106: FABRICATION AND ANALYSIS OF PCM HEAT EXCHANGER FOR FREE COOLING

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Abstract: Free cooling/Night ventilation is the process of storing the cool energy available in the night time ambient air in a storage device. During the day time the cool energy is retrieved from the storage device in order to cool the building using mechanical ventilation system. The modular heat exchanger developed in this work is a shell and tube type with phase change materials in the shell portion of the module and passage for the flow of air through the tubes. The modules of the modular heat exchanger are stacked one over other with air spacers in between each module. This modular heat exchanger arrangement is suitable for free cooling application where the diurnal temperature variation is low. Transient and steady state CFD modeling is carried out for a single module and two air spacers. Conjugate heat transfer analysis is carried out for the fluid and PCM of heat exchanger module. The latent heat value of the PCM is modeled using apparent heat capacity method with suitable profile approximated from the experimental results. The steady state CFD analysis is useful to determine the pressure drop across the module and the spacers and to know the flow and temperature variation of heat transfer fluid in the module so as to select the geometrical and flow parameters for a given surface temperature and inlet condition. The air spacers provided between the module increases the retention time of the air for better heat transfer and its effect is more pronounced at the lower velocities and decreases as the frontal velocity increases and its effect is negligible above the frontal velocity of 2 m/s.

Keywords: Phase change material, Heat exchanger

ICME102: DESIGN AND ANALYSIS OF WIND TURBINE ROTOR BLADE AND WINGLET STUDY

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Abstract: The project is centered on the design and analysis of winglets for wind turbine rotor blade. This project involves varying the sweep and cant angle of the attached winglets , selecting the high aerodynamics machinery and power output is 400KW.Winglet data for implementing it in the wind turbine rotorblades. In this work, CFD, ANSYS has been used to design blades effectively. In orderto increase the use of wind energy, it is important to develop wind turbine rotor blades with winglets with high rotation rates and power coefficients. The existing turbine blade and the modified blade with the winglet are compared for their results.

Keywords:CFD, ANSYS, Aerodynamics

ICME105: EVALUATION OF MECHANICAL PROPERTIES OF NATURAL HYBRID FIBERS REINFORCED POLYMER MATRIX COMPOSITES

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Abstract: In recent years, natural fibers reinforced composites have received much attention because of their lightweight, non-abrasive, combustible, nontoxic, low cost and bio-degradable properties and the usage of composites increasing drastically because of their salient features. The project is based on Polymer reinforced composites, attempting to compare two different type of manufacturing process Plates in polymer reinforced composite. One set of plate are manufactured Random Orientation process and the orientation for the fiber (PANEER)and ACACIA fiberwhich is treated with Noah and the other set of plates are manufactured with unidirectional orientation of Paneerfiber and Acacia fiber (Udai) in unidirectional which is treated with Noah. The tensile and impact test are tested for the following plates and compared the results of both the process. From the result am going to conclude that Random Orientation plates and unidirectional orientation plates which has the maximum strength. The required specimen is prepared with different orientated.

Keywords: Acacia fiber, Random Orientation

ICME104: ANALYSIS OF MECHANICAL PROPERTIES IN FIBER REINFORCED POLYMER COMPOSITES

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Abstract: Composite materials have occupied major part in current year due to its light weight, good stiffness, high specific strength and flexible nature. Due to large availability of naturally occurring fibers and their capability the applications of these fibers vary according to purpose. This research work study with the preparation and investigation of fiber polymer composites of natural fibers in polyester resin. Natural fibers used here are sisal fibers which are mixed with polyester in weight fraction basis of 0%, 10%, 20%, and 30%. This composite is manufactured using hand lay-up process. Mechanical properties of each composite are determined through tensile, flexural, impact tests. The tensile strength of sisal polymer composite is found to be 30% of fiber content is better than the other composition.

Keywords: Tensile strength, Natural fibers

ICME107: THERMAL ANALYSIS OF PHASE CHANGE MATERIAL INCORPORATED BUILDING ROOF AND WALL

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Abstract: Energy storage in the walls, ceiling and floor of buildings may be enhanced by encapsulating suitable phase change materials (PCMs) within these surfaces tocapture solar energy directly and increase human comfort by decreasing the frequency of internal air temperature swings and maintaining the temperature closer to the desired temperature for a longer period of time. Latent heat storage in a phase change material (PCM) is very attractive, because of its high energy storage density and its isothermal behavior during the phase change process. Several promising developments are taking place in the field of thermal storage using phase change materials (PCM) in buildings. It has been demonstrated that for the development of a latent heat storage system (LHTS) in a building fabric, the choice of the PCM plays an important role in addition to heat transfer mechanism in the PCM. This project summarizes the investigation and analysis of thermal energy storage systems incorporating PCMs for use in building applications. In the present article Capric acid are used in the phase change material and the temperature are measured with PCM and without PCM.

Keywords: Phase change material, Thermal energy storage

ICME109:CROP DRYING MACHINE BY USING SOLAR ENERGY

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Abstract: Sorghum is a strong grass and usually grows to a height of 0.6 to 2.4 meters(2 to 8 feet),sometimes reaching as high as 4.6 meters (15 feet). Stalks and leaves are coated with a white wax, and pitch, or central portion,of the stalks of certain varieties is juicy and sweet. First and foremost, sorghum is used as livestock feed and turned into ethanol. Its popular crop to grow within the drier regions of the states because it is a drought resistant. Normally ripesorghum will dry with in 5 days on normal temperature, for unripe sorghum will take 10 days and more. It takes more time to dry the sorghum in normal temperature.To decrease the time of dry the sorghum. We introduced a new sorghum drying machine. It consists of coil, glass, tray, solar panel etc., The moisture content of the sorghum will be decreased soon. It will helpful in wastage of time. Increasing the crop produced soon it will be helpful to farmers.

Keywords: Ripesorghum, Sorghum drying machine

ICME110: SYNTHESIS , CHARATERIZAION AND APPICATION OF MGCUO NANOCOMPOSITES - PREVENTION CORROSION IN METAL

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Abstract: Nanocomposite coatings have shown increasing interest in recent years in many strategic industries such as automotive, aerospace, petroleum, and electronics. Nanocomposite coatings are engineered to provide attractive and cost-effective functional surface coatings with superior properties for anticorrosion, antimicrobial, antifogging, and adhesive applicationsMetal oxide nanocomposites had an enhancement of stiffness, barrier property, or flame retardancy can lead to a loss in toughness, transparency, or mechanical properties, respectively. The unique characteristics of nanocomposite coatings include enhanced mechanical strength, weight reduction, improved barrier properties, and increased heat, wear, and scratch resistance for lifelong performance. In this present we synthesize the MgCuOnanocomposite is by microwave assisted Solvothermal method. This composites nanocoating is a coating s in the nanoscale, or is composed of layers that are less than 100 nm using spray pyrolsis method on metal sheets to test the corosion factors.

Keywords: Corrosion, Spray Pyrolsis, metal nanocomposite coating, corrosion factors

ICME112: DESIGN AND FABRICATION OF BRICK KILN POWER PLANT

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Abstract: In brick kiln industries, to manufacture a brick the heat is required about 900°C - 1200°C. Our project is to utilize the heat from brick kiln to generate electricity using steam turbine. The heat is produced in grate and the flue gas is exhausted over the grate surface. In this process, flue gas of brick kiln is used as a fuel to drive the prime mover. The water is circulated through a large number of tubes and the hot gases passes around the tubes. The water tubes are placed above the grate and which is used as boiler. Then the feed water passes through the economizer to the boiler in which the water is converted into superheated steam using flue gases. The steam is used to rotate the blades of turbine. The turbine is mounted with the generator through a shaft for generating electricity. To accomplish our plan, we have designed a setup in brick kiln industries to generate electricity. This electricity is stored in power house and it is supplied to the domestic purposes through the transformer.

Keywords: Boiler, Turbine, Brick

ICME113: PERFORMANCE OF SOLAR DESALINATION USING FATTY ACID BASED PCM AS STORAGE MEDIUM

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Abstract: The continuous increase in the level of greenhouse gas emissions and the rise in fuel prices are the main driving forces behind the efforts for more effectively utilize various sources of renewable energy. In many parts of the world direct solar radiation is considered to be one of the most prospective sources of energy. In this paper, the thermal performance of a solar desalination using fatty acid based PCM as thermal storage device is discussed. The storage unit is a solar desalination system being developed for latent heat storage studies. Cupric acid was used as PCM in thermal energy storage with a melting temperature of 320C. The time wise temperatures of the PCM and solar intensity were recorded during the processes of charging. The heat transfer characteristics were studied. Thermal energy storage has always been one of the most critical components in residential solar desalination applications. Solar radiation is a time-dependent energy source with an intermittent character. The peak solar radiation occurs near noon. So, thermal energy storage is essential in the solar desalination system. Therefore, in this paper, an attempt has been taken to summarize the investigation of the solar desalination system incorporating with Phase Change Materials.

Keywords:PCM, Solar intensity

ICME103: CHARACTERIZATION OF NATURAL FIBER REINFORCED POLYMER COMPOSITES

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Abstract: Sansevieriatrifasciata is a common perennial plant which freely grows and widely found in homes, parks, and woodlands. In this research, we studied the morphology using Scanning Electron Microscope and Fourier Transform Infrared (FTIR); thermal properties using Thermo gravimetric (TGA) and Differential Scanning Calorimetric (DSC) analyses; mechanical behavior through tensile tests of Sansevieriatrifasciata fiber (STF) obtained from Butalejain Eastern Uganda. Findings show that the fiber has an irregular cross-sectional shape with lumens in the center, the fiber diameter was between 80 and 120 μm. TGA tests showed that the fiber is stable below 200◦C with maximum cellulose decomposition temperature of 315◦C. DSC showed that the fiber's crystallization temperature was 310.5◦C and lignin decomposition temperature of 372.7◦C. The surface functional groups were majorly of cellulose, hemicelluloses, and lignin in direct correlation with research elsewhere on natural fibers.

Keywords: Thermo gravimetric, Cellulose, Hemicelluloses

ICME120: COMPARATIVE ANALYSIS OF ADVANCED GRID STIFFNED PANEL

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Abstract: In now a days there are many types of grid structures are available. Our objective is to find out the best stiffened structure. So that we select three structures (orthogrid, Anisogrid and diamond grid). We analysis there three structures and find out which one is provide more compressive strength among there three structures. Among these structures, Anisogrid is the best grid because it provide compressive strength. Another objective is material is less weight. We make Anisogrid by using glass fibres instead of steel. So that the weight is lesser than steel and the cost is low. The composite materials are glass fibre, Eboxy, Resin, PVA (mold releasing agent). We planned to make this grid by compression moulding.

Keywords:Orthogrid, Anisogrid, Diamond

ICME121: BOREWELL RESCUE SYSTEM BY USING ARDUINO CONTROL

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Abstract: This paper deals with a device to save a child that is stuck in a bore well. There is a decline of groundwater levels during the times of drought. In most of the dried-upbore wells, the motors along with casing pipe are removed and the outer surface of the bore well is not insulated properly. As a result of this, the children who are playing near the bore well accidently fall into the bore well. This paper deals with the rescuing process involved in lifting a child who has fallen into a bore well using ArduinoControlledMechanical Grippers (ACMG) with a camera and an LED light will monitor the position of the child and also serves to operate the system. The linear actuators help to fix the device in the bore well. The Arduino controlled device will go down the bore well and perform the action, also gas in the borewell is detected by the sensor. The child can be saved within a short period of time without facing any difficulties. This device will not cause any damage to the child as the device will function accurately and efficiently.

Keywords: Arduino Systems; Mechanical Grippers; Linear Actuators; Bore well; Servo Motor; Sensors.

ICME125: ANALYSIS OF CURING PROCESS PARAMETERS USING TAGUCHI METHOD

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Abstract: Selection of curing process parameters to achieve a set of quality attributes is important in bridging up the quality and productivity requirements. Especially in curing process a set of process parameters such as Temperature, Curing time and Load are to selected appropriately to provide a good bonding of rubber and shell to manufacture oil seal, which is considered as the quality attribute. In this project curing process is carried out in NBR (Nitrile Butadiene Rubber). Butyl rubber was characterized by its low compatibility to other elastomers and low degree of unsaturation. Whereas curing time is the widely used parameter. Experiments are designed and conducted based on Taguchi Method.

Keywords: Curing, Process Parameters, NBR, Taguchi Method.

ICME126: CAR PARKING BRAKING SYSTEM BY USING SENSOR

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Abstract: If you are a new driver then it is very difficult to judge the distance while parking the car. Reverse parking sensor braking system solves this problem by brake the car when the distance between car and component is very small. We can easily arrange this system at the back side of the car. This system operates with 12V rechargeable battery. Now a days, the electrical vehicles are launched regularly, This braking system is more suitable for electrical vehicles .it is a one type of accident protection system that detects the component on rear side of car and as a result activate the braking system. This article explains you how to design Reverse parking sensor braking system.

Keywords: Rechargeable battery, Electrical Vehicles

ICME127: DYNAMIC MECHANICAL ANALYSIS OF A NATURAL FIBRE REINFORCED POLYMER COMPOSITE

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Abstract: The growing interest in proper utilization of natural fibers, paralleled to glass and carbon fibers are chiefly due to their low cost ,high specific modulus, light weight, lower energy requirements less wear and tear in processing, wide availability, biodegradability , resistance to deforestation along with other usual advantages. The incorporation of natural fibers as reinforcing agent in thermo set polymer composites has gained increasing applications both in many areas of Engineering and Technology. DMA technique which is useful in characterizing composite structure and damping as a function of frequency, temperature, time, stress, atmosphere or a combination of these parameters. The dynamic parameters such as storage modulus (E'), loss modulus (E"), and damping factor (Tan d) are temperature dependent and provide information about interfacial bonding between the reinforced fibre and polymer matrix of composite material.The storage modulus (E') or dynamic modulus typically related to the Young's modulus. It often associated with 'stiffness" of a material and determine how stiff or flimsy a sample. E' regarded as a material tendency/ability to store energy applied to it for future purpose. Loss modulus (E") or dynamic loss modulus, is a viscous response of the materials and regarded as materials tendency to dissipate energy applied to it. The dynamic loss modulus is often associated with ''internal friction" and is sensitive to different kinds of molecular motions, transitions, relaxation processes, morphology and other structural heterogeneities

Keywords: Storage modulus, Loss modulus, Damping factor

ICME131: EXPERIMENTAL INVESTIGATION TO IMPROVE THE HEAT TRANSFER OF A HEAT EXCHANGER USING NANO FLUIDS

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Abstract: In thermal engineering the heat transfer is an important area. By creating high heat transfer rate the area of heat transfer will be reduced. The heat transfer between the two fluids in heat exchangers has been taking place with the help of conventional fluids like water, air and so on. Nano fluids are considered to be an alternate and new generation fluids for transporting heat energy and employed in heat exchanger. The numbers of papers are reviewed that the use of single nano fluid with conventional fluid as working fluid in heat exchangers and achieved considerable enhancement of heat transfer coefficient. Suspending nanoparticles in conventional fluids called nano fluids. In this project the combined Nano fluid which is combination of two nano particles instead of using single nano fluid in double pipe heat exchanger. Here the SiO2 (silicon dioxide) and TiO2 (titanium dioxide) are combined together and is going to be used in inner pie of heat exchanger as a cold fluid and hot water is circulated around the outer pipe of heat exchanger. By changing the volume concentration and flow rates of nano fluid the heat transfer coefficient of the nano fluid is going to be analyzed. The convective heat transfer coefficient of the Nanofluid is higher than that of the base liquid at same mass flow rate and at same inlet temperature.

Keywords: Titanium dioxide, Heat transfer coefficient

ICME132: INDUSTRY & DOMESTIC PURPOSEDUAL MODE FOUR WHEELER

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Abstract: In this paper the hybrid vehicle is fabricated in LOW COST for making this we need the certain components like such as bike engine, wiper motor,battery,rack pinion steering column, suspension system etc..,This frame has been constructed on compact size, by using this we got DUAL MODE power generation . It has more efficiency. This vehicle can be used for INDUSTRY & DOMESTIC PURPOSE.A hybrid electric vehicle (HEV) is a type of hybrid vehicle and electric vehicle which combines a conventional internal combustion engine (ICE) propulsion system with an electric propulsion system. The presence of the electric power train is intended to achieve either better fuel economy than a conventional vehicle, or better performance.

Keywords: Hybrid electric vehicle, Conventional vehicle

ICME135: HYBRID SOLAR AND WATER MILL OPERATED WATER PUMP

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Abstract: As we see there is enough wind and solar energy globally to satisfy as much as humanity's energy requirements. Vertical axis wind turbine(VAWT) may as efficient as current horizontal axis system, might be practical and significantly cheaper to built and maintain then horizontal axis wind turbine(HAWT). They have other orginal advantages, like they are always facing the wind which might make them a significant player in our daily routine for lower cost, cleaner renewable sources of lifting water. The growing popularity of solar wind pumps in many rural areas, these areas typically have no access to electricity or shortage of electricity, which creates a problem when it comes to irrigation and watering livestock, VAWT's might even critical in mitigating grid interconnect stability and reliability issue currently facing electricity producers and pump the water from suppliers.

Key words:HAWT, VAWT

ICMEI01: REDESIGN OF SHELL AND TUBE HEAT EXCHANGER

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Abstract: Heat exchangers play prominent role in any field of engineering specially chemical or petrochemical plant. Heat exchangers exchange heat between two process streams this concept behind a heat exchanger is the use of pipes or other containment vessel to heat or cooled one liquid by transferring heat to another in most case. A shell and tube heat exchanger is generally used to establish heat transfer between hot fluid on depending upon the industrial requirements. This project work is done for an associate of Aruna Alloy steels private limited. To store the product its temperature should be reduced to 40 degree Celsius. In this stage a shell and tube heat exchanger is used (184 tubes). As the plant undergoes capacity expansion process, consequently the production of $TiCl_4$ will increased by 65% This necessitates a heat exchanger of enhanced capacity. The aim of this project is to design a new heat exchanger according to various theoretical designs available for improving the capacity and select ones that are suitable for current system.

Key words: Heat transfer, $TiCl_4$

ICME108: CATALYTIC REDUCTION OF NOX IN SINGLE CYLINDER DIESEL ENGINE

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Abstract: Diesel engine are widely used in many areas like automobiles, locomotives marine engines and power generation etc., due to its higher power output and thermal efficiency. Even though the diesel engines makes the human discomforts caused by the pollutant emission of these engines. The major pollutant emissions of the diesel engines are particulate matters, smoke and the oxides of nitrogen(NOx).Out of these pollutant emissions, the NOx are considered as the most harmful pollutants to the human health. Emission of oxides of nitrogen (NOx) contribute seriously to Air Pollution, which causes major environmental problem. Emissions of NOx react with moisture in the air to form nitric acid. In this project on effort has been taken to control the Emissions controlled by after treatment of exhaust gases. In the after treatment method , urea solution sprayed in the exhaust gas at a temperature of 300 º C to 450º C .At this high temperature of exhaust gas, The urea starts to decompose and from ammonia. The ammonia acts as reduction against and coverts the oxides of nitrogen (NO and NO_2) in to free nitrogen (N_2) and water vapour (H_2O). For the maximum engine load, there is reduction of Emission of NOx analysis when catalytic convertor is used.

Keywords: Emission of oxides, Diesel engine.

ICMEI02: DESIGN AND ANALYSIS OF TRIPLE U TUBE HEAT EXCHANGER

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Abstract: The heat exchanger consists of triple tubes in various diameters. The tubes are located concentrically with U shape arrangement. Hot fluid enters through the inner and outer tubes in one direction and leaves at the another end as cold fluid. The coolant flow to the middle tube in another direction This setup is used to calculate heat transfer on the tubes and effectiveness of the heat exchanger This arrangement is especially reduce the tube length and to increase the heat transfer area with reduction in the cooling time. This type of flow is to increase the effectiveness of the heat exchanger.

Key words: Triple U tube heat exchanger, heat transfer, and effectiveness.

ICME116: EVALUATION OF MECHANICAL PROPERTIES OF ROSELLE FIBER REINFORCED VINYL ESTER COMPOSITES BY ADDITION OF GLASS FIBERS

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Abstract: Two types of Roselle / glass fiber reinforced vinyl ester hybrid composites such as dispersed and skin-core were prepared by a simple hand lay-up technique with 40 wt% of fiber loading. Shear property of hybrid composites was evaluated based on the composite types. The fractographic studies on the fracture surface of hybrid composite specimen after tests were investigated by using scanning electron microscopy (SEM). For comparative study, the neat resin samples and the Roselle alone composites were prepared. The results show that the shear property of composites increased with increase of glass fiber addition. Composite with 10 wt% of Roselle fibers and 30 wt% of glass fibers show the maximum level of shear property in both the types of composites. The skin-core type hybrid composites show the superior performance than the dispersed type hybrid composites.

Keywords: Polymer composites, Dispersed method, skin-core method, Shear property, Scanning electron microscope.

ICME128: DETERMINATION OF TENSILE STRENGTH OF A POLYMER COMPOSITE

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Abstract: This project is a review on the tensile properties of natural fiber reinforced polymer composites. Natural fibers have recently become attractive to research, engineers and scientists as an alternative to reinforcement for fiber reinforced polymer (FRP) composites. Due to their low cost, fairly good mechanical properties, high specific strength, non-abrasive, eco-friendly and bio-degradability characteristics, they are exploited as a replacement for the conventional fiber, such as glass and carbon. The tensile properties of natural fiber reinforce polymer are mainly influenced by the interfacial adhesion between the matrix and the fibers.

Keywords: High specific strength, Non-abrasive

ICME129: SOLAR OPERATED RAIN WIPER AND PANEL CLEANING SYSTEM FOR AUTOMOBILES

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Abstract: An abundant source of renewable energy like solar energy is proved as a better option to meet such challenge. This work, focused on an idea about solar car technology .The efficiency of solar panel in a car gets affected in the presence of dust particles. While many factors affect how much electricity your solar panels will produce, dusty solar panels can be one of the biggest, and easiest to fix. Experts have agreed that dusty solar panels do not produce as much power as clean panels. The power output of the panel degrades up to 50% due to the dust accumulation .So a solar operated automated rain wiper and dust cleaning system that automatically switches ON on detecting rain and stops when rain stops. A solar panel cleaning system is proposed in order to make a solar panel operate at the best power generation state, while the solar panel is used in dusty environment. In this project brings the system forward by having no need for manual intervention. For this purpose, rain sensor and LDR along with microcontroller and driver IC to drive the wiper motor. The rain sensor works on the principal of using water for completing its circuit, so when rain falls on it it's circuit gets completed and sends out a signal to the microcontroller. The LDR sensor is used to detect whether it is a day or night. Depending on the solar output the presence of dust on the surface of solar is detected. If the dust is detected the wiper starts to work on the surface along with the water sprayer.

Keywords: Solar panel, LDR sensor

ICME136: INCREASING THE PRODUCTION RATE OF CEMENT BY OPTIMISING THE PURGING SYSTEM IN CEMENT MILL BAGHOUSE

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Abstract: Cement is the primary constitute for any construction. Due to the dramatic growth in the construction field many cement manufacturers have started to increase their production rate over time to overcome the demand. To increase any production, we should have effective manufacturing plan and those plans should have considerable amount of bottlenecks. In this following draft we present how we worked all our way in identifying a bottleneck in a live cement plant and minimizing it.

Keywords: Bottlenecks, Cement plant

ICME124: IMPLEMENTATION OF KAIZEN FOR CONTINUOUS PRODUCTIVITY IMPROVEMENT IN YARN INDUSTRY

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Abstract: Thousands of small & medium scale industries are present in India. All are facing certain problems resulting in lack of productivity, greater lead time, processing time, stock out situations etc. This project contains basis definition of Kaizen philosophy & a brief review of kaizen concept & its implementation. The purpose of this project is to represent Kaizen, its related terms in a concrete way & its implementation in improving the overall effectiveness of small scale organization situated in yarn industry. This project illustrates about kaizen implementation in small manufacturing industry and also focuses on the scenario of yarn manufacturing company while implementing Kaizen. This project also reviews some of the papers/Journals which basically focused on implementation of kaizen technique in small manufacturing companies. The company is currently facing the problem of increased lead time and stock out situation. In order to solve the faced problem we emphasize on two major alternatives and select Kaizen as a main productivity improvement tool. This implementation focused on reducing the lead time of sales order processing by mean of which the productivity of organization will be improved.

Keywords: 5s philosophy, JIT, PDCA cycle, Team Dynamics

ICME133: FABRICATION & ANALYSIS OF SI ENGINE POWERED AGRICULTURAL WEEDING MACHINE

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Abstract: Agriculture is our backbone of India, but our farmers can't get much of high profits in their fields. All the farmers hardworks are reduced by upcoming technologies such as tractors etc. so we give the idea about weeder machines. In our innovative ideas creates the "TRI-FUEL SI ENGINE POWERED AGRICULURAL WEEDING MACHINE". We modify the old petrol engine in to tri-fuel engine by adding LPG kit which connects with carburetor, petrol and kerosene acts as normal fuel we construct the frame and fitted to the engine. The components are used chain sprocket, pulley, shaft, roller wheel & blades. Due to the usage of tri-fuel the weeder machine get more efficient.

Keywords: Weeder machines, Carburetor

ICME122: AIR POLLUTION CONTROL SYSTEM USED BY LEADS

SCREW METHOD

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Abstract: Air pollution is now-a-days the big issues in this world. It is very difficult to inhaling the fresh air from the atmosphere. Due to the increasing of population and automobile industries, and vehicle and so many other polluted causes has been effects on human health and the ecosystem and also entire atmosphere as very soon. The air pollution from vehicles in urban areas, especially in Delhi city has become a serious problem. Every vehicle will have emission but the problem occurs when it is beyond the standardized values. The primary reason for this breach of emission level being the incomplete combustion of fuel supplied to the engine, which is due to the improper maintenance of vehicles.In this paper aims to reduce the polluted such as carbon content and carbon monoxide & invisibility of dirty air from the atmosphere by using submerged leads screw method. Leads screw is the main component of this project; it will be submerged into the closed device. Leads screw also coupled with dc motor. It will capture the all toxics content air from the atmosphere with help of sub-component in this project.

Keywords: Leads screw, DC motor, FD fan, closed casing, fluid content, battery.

ICME130: HEAT TRANSFER MANAGEMENT IN A RECTANGULAR AIR DUCT

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Abstract: The performance of solar air heater was experimented and investigated using trapezoidal and polygonal shapes. The pitch distance between ribs vary from 20mm and 30mm at Reynolds number 2000 to 20000 and Nusselt's number, friction factor characteristics are investigated and results reveal that polygonal shape of rib at pitch distance P is 20mm has shown higher Nusselt's number compared with other shapes. The prime concept of this project is to measure the temperature of output air that we obtain after passing through an insulated setup coupled with heater. The values we obtain are run over various trials using different obstacles to increase air resistance. The project's experimental setup consists of an air duct with three distinct compartments, the inlet section, test section and exit section. Results from the exit section are carried out using two plates, one with a smooth surface and the other with resistance inducing ribs on it, these plates are fixed below the fabricated heater, the resulting temperature is measured using a series of thermocouples

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Keywords:solar air heater - polygonal – trapezoidal

ICME115: OPTIMIZATION OF PROCESS PARAMETERS OF ELECTRICAL DISCHARGE MACHINING OF FABRICATED AA6082 – ALN

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Abstract : The non-conventional machining methods are used for machining very hard materials and for making difficult shapes. Electrical discharge machining (EDM) process is one of the most commonly used nonconventional machining processes for machining hard, brittle materials like composites. It is commonly used in die making industries for developing complex profiles in dies related to sheet metal work etc., It is commonly used for machining metal matrix composites which are very hard materials. Aluminium based metal matrix composites are widely used in aeronautical and defence parts because of their advanced properties like high strength to weight ratio, etc. At first the material was fabricated using stir casting set up which was the part of research work. The work piece material selected in this study was Aluminium alloy 6082 and 10 % Aluminium nitrite based metal matrix composite which was fabricated by stir casting process with the help of newly developed stir casting set up. After fabrication, the characterization of samples was done using SEM and mechanical. The EDM process was selected for machining composite samples with input parameters like gap current (A), pulse on time (μs) and duty factor. In this machining process the output response was material removal rate. The optimization of process parameters was done using Taguchi method with the help of ANOVA test and S/N ratio. Analysis of variance was performed to find the significance of machining parameters in this experimental work.

Keyword: Electrical discharge machining (EDM), Aluminium, Aluminium nitrite, Analysis of variance (ANOVA), Ceramic-matrix composites and Taguchi method

ICME117: PONGAMIA PINNATA (KARANJA) BIODIESEL AS AN ALTERNATIVE FUEL FOR DIESEL ENGINE

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Abstract : Diesel engines are widely used in light, medium and heavy duty vehicles and power generation in heavy machinery, because of higher thermal efficiency and the ability for lean operation. Further, the lean burn capability helps to lower the carbon monoxide (CO) and Hydro carbon (HC) emissions compared to those of a spark ignition (SI) engine. However the emission of oxides of nitrogen (NOx) and particulate matter are higher in a diesel engine. Bio-fuels, due to their agricultural origin, are able to reduce net carbon dioxide (CO2) and CO emissions. Bio-fuels are having environmental benefits as they are made from renewable sources. Bio-diesel is biodegradable and it can be used in most diesel engines with minimum alterations in the engine manifold. In this paper PongamiaPinnata oil is used as raw material to produce a biodiesel. This paper reviews the Production of biodiesel from PongamiaPinnata oil, various properties, performance and emission of PongamiaPinnata biodiesel in compression ignition (CI) engine. Non edible PongamiaPinnata biodiesel blended with diesel were tested for their use as substitute fuels for diesel engines. This oil is blended in varying proportion like 10%, 20%, 30% etc. with diesel fuel and by varying the Compression ratio, Injection pressure, Speed, Load or by using Additives we can check the performance and emission characteristics of biodiesel-diesel blends and can find out the most preferable combination of the blend for CI engine. Based on various studies, this paper generally found that PongamiaPinnata biodiesel can be used in CI engines as alternative fuel.

Keywords:CO emissions, Injection pressure

ICME118: HEAT TRANSFER ANALAYIS OF FLAT- PLATE SOLAR WATER HEATER WITH PHASE CHANGE MATERIALS

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Abstract: Solar energy has greatest potential of all the sources of renewable energy. It is one of the most important supplies of energy especially when other sources of supply in the country have depleted. In particular, solar energy, being non-polluting, clean, free of cost and inexhaustible, has received wide attention among scientists and engineers. Hence some form of thermal energy storage (TES) is necessary for the most effective utilization of this solar energy source. Thermal energy can be stored in form of sensible heat or latent heat or combination of sensible and latent heat. Storage of solar energy as a sensible energy is cheap but inefficient, due to its low storage density, low specific heat of heat transfer fluid, etc. On the other hand, latent heat storage (LHS) concept, which involves storing and recovering heat through the solid-liquid phase change process and vice versa., has advantages of high heat storage capacity and isothermal behavior during charging (heat storage) and discharging (heat release) processes. The present work has been undertaken to study the feasibility of storing solar energy using Phase Change Materials (PCMs). In this research work, two conventional solar flat plate solar water heaters, storage tank with and without phase change materials was fabricated to investigate the feasibility and heat transfer analysis of storing solar energy with and without phase change materials (PCMs) and also studied energy storage capacity of storage tanks. For this study, organic phase change material had selected due to its thermal characteristics. This stored energy are used to heat water for domestic applications during night time. The performance of this PCM based thermal energy storage system is going to compare with conventional sensible heat storage system. The experiment was conducted with different types of flow rates and verify with energy storage time period in the evening hours and also analysis the cumulative heat stored capacity.

Keywords: Thermal energy storage, Phase change material, Sensible Heat (SH), Latent Heat (LH), Flat plate solar water heater

ICME123: DESIGN AND FABRICATION OF ROCKER BOGIE

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Abstract: In This Project work "Rocker Bogie mechanism" deals with the important aspect of improving the rover from its previous designs. The rover has to operate on rough and harsh environments for which it was designed but several factors restrict its operational capabilities, so the focus of our project is to overcome restrictions or to decrease it to within an acceptable range for its smooth performance. The rover has been completely made from PVC to increase its capability to withstand shocks, vibrations and mechanical failures caused by the harsh environment where it is operated on. Using CAD software the design of the rover has been fine tuned and by experimenting with prototypes and models of the rover in the experimental setup of the live test, improvements and feature were included into the rover. The result of the project was the implementation of independent directional control utilizing minimum drive modules which increases the efficiency of the battery and increases the operating time of the rover, near zero tilt of the main body of the rover by self balancing of the body counterweight method which decreases the tilt or overturning percentage of the rover and its stability and finally by direct linkage of the various links comprising the rover which increases the loading capacity. Thus the various improvements ensure structural, tilt stability, mechanical integrity and overall weight reduction and mechanical feasibility.

Keywords: Motors-30rpm, 12volts 7.5 Amp Battery, Arduino Uno, Bluetooth model HC -0.

ICME137: SMART BORDER PATROL SYSTEM

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Abstract: In The main objective of this project is to achieve a smart border patrol system which helps in identifying unauthorized entry across the Nations border. This system will rely on Drones, Micro Transmitters and internet-based cloud processing to process and identify the intrusion in Real Time using the drones onsite and servers located at the base. SBP will operate using high speed internet along the border with relays placed to receive and transmit so as to stream high resolution video. A specific application developed for this purpose would have access to a large database for real time facial scanning. The application will also be able to recognize human heat signatures using on board thermal sensors the samples from database. The micro transmitters would be used to recognize personnel. The micro transmitters given would keep emitting signals which would be captured by the receivers in the drone for its identification and prevention of false alarms. This system would reduce the man power required for the border patrolling thus reducing causalities at the border. The cloud processing helps in the weight reduction of the drone as it does not require onboard hardware for real time processing this in turn increases the actual fly time of the patrolling drones. SBP would increase patrol efficiency and reduce life loss. Advancements in battery technology in future could lead to drastic change in battery performance facilitating addition of more features to current system.