

**9th INTERNATIONAL CONFERENCE ON
EMERGING TRENDS IN ENGINEERING AND
TECHNOLOGY**

ICETET'22

29th & 30th April 2022



Organized by

PANDIAN SARASWATHI YADAV ENGINEERING COLLEGE

Arasanoor, Madurai – Sivagangai Highway,

Tamil Nadu – 630 561.

INDIA

PREFACE

The ninth International Conference on Emerging Trends in Engineering and Technology [ICETET'22] was conducted on 29th and 30th April 2022. The ICETET'22 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, 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 Programme and Seven PG Programme. 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, for providing us all the support for the conduct of this conference. We also express our sincere gratitude to Er. S. P. Varadharajan, Managing Director for the support towards the conference, we gratefully acknowledge Dr. R. Raja, Principal, for having shared his decades of experience in configuring this conference.

We sincerely thank Prof. R. Rajalakshmi, M.E., (Convenor, ICETET'22) Professor in ECE department for her 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'22

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, 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 in a serene atmosphere, free from pollution and it is highly conducive for studies. PSYEC is 22 years old, ISO 9001:2008 certified Institution. The course offered in PSYEC are approved by AICTE, New Delhi and affiliated to Anna University, Chennai. PSYEC offers 5 UG and 7 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 Programme 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. Many students are active members of associations like IEEE, ISTE, CSI etc. Faculty members of all these departments are actively involved in research in various engineering disciplines and Technologies.

KEYNOTE ADDRESS



Dr. Leta Deressa Tolessa,

Associate Professor, Department of Chemistry,

Mettu University,

Ethiopia

High-Value Chemicals from Biomass: Ionic Liquids Based Lignin Extraction and Depolymerization

Abstract:

The majority of materials used in the chemical industry are derived from the relatively rational economically and readily available petroleum-based carbon feedstock. The production of value-added chemicals and materials from renewable resources could be a major role in the future chemical industry. The application of coal-based chemicals for energy production has the largest reserves compared with oil, gas and other fossil energy sources. Nevertheless, global warming caused by greenhouse gas emissions from fossil fuels threatens the environment balance and the climate stability. As a result, to find the alternative renewable resources for the sustainable development became our prime concern. In this regards, lignocellulosic biomass, which is the most plentiful and renewable biomass on the globe, recognized as a potential material to fulfil our future requirements of energy and chemicals. Lignocellulose is the most common, which is principally obtained from plant source and is composed of three major constituents; cellulose, hemicelluloses and lignin. The transformation of these components to other chemicals rely on their structural characteristics. Structurally, lignocellulosic biomass are complex and requires advanced process to isolate and convert the polymer to other valuable chemicals. Several methods like alkali treatment, acid treatment, organic solvents treatment, and use of sub- or super-critical technology, have been proposed to extract lignin from lignocellulosic biomass.

Finding a suitable green solvent for the pre-treatment and dissolution of biomass is essentially needed. Recently, ionic liquids (ILs) emerged as a new class of green solvents which are found to be suitable for the dissolution of biomass. ILs are mainly composed of cations and anions. They are known to possess very interesting physiochemical properties over conventional solvents. Various applications of the lignin are well recognized such as an additive to composite materials, antioxidant, adsorbent, sorption of heavy-metal-ions, anticancer agents, and dyes. Despite its direct use in various emerging fields of science and engineering, de-polymerization of lignin to lower molecular weight phenolic compounds and oligomers is recognized as a highly attractive method to fulfil our future demands of valuable chemicals.

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DEPARTMENT
OF
CIVIL ENGINEERING

ICCE101: STRATEGY OF STRUCTURES FOR MULTI PERILS

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Abstract- As the impact of individual extreme events on structural systems is increasingly studied and understood, it is important to begin expanding on the effects of multiple hazards on a system. Up to this point, the design of structures for high-wind and earthquake events has been conducted separately, even though the fact that both events induce horizontal loads indicates to an interaction between the components of each design. It is therefore reasonable to believe that there exist some components of the design that are redundant and others which may be incongruous. The foremost objective of this research is to create a model of a mid- to high-rise building and to study its behaviour under wind and seismic loads. To compare the performance of framed building and shear wall building under earth quake and wind loading by drift ratios to compare the performance of damper and base isolation for earthquake and wind loading by modal analysis. The design methods used to protect against the hazards by looking at the ways in which these methods reinforce or are in conflict with one another are compared. Many favourable features of wind-resistant design are un-favourable for earthquake-resistant design and vice versa. Heavy structures resist winds better. Light structures resist earthquakes better. Flexible structures attract greater wind forces. Stiff structures (generally) attract greater earthquake forces. This is a key aspect of multi hazard design because the similarities and differences in the ways in which hazards affect buildings and how to guard against them demand an integrated approach to natural hazards design. This must be pursued as part of a larger integrated approach to the whole building design problem. The shear wall building having greater effect to resist earthquake and wind loadings compare to framed building. Base isolation and damper will resist both earthquake and wind loading effectively for midrise buildings.

ICCE102: STUDY OF THE MORPHOLOGICAL CHANGES IN THE GEOTECHNICAL PROPERTIES OF A COASTAL REGION

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Abstract- The research investigated the behaviour of bricks and mortar subjected to moisture and salt crystallization, and aimed at determining the mechanical degradation of bricks due to these environmental factors. Initially some geotechnical properties of soils were investigated at Ammapattinam in Pudukkottai district in a particular area of land. A combination of target and random soil survey techniques guided field studies. Twenty-four soil samples were collected diagonally at the depth of 20 cm and 40 cm in total area of land, which were air-dried and sieved.

These soil samples were subjected to routine laboratory analysis and the resulting data were analysed. Results show that soils were sandy and clayey, of moderate to neutral acidity. Based on soil test, brick and water are sampled. Bricks in existing buildings are also tested. The test bricks were removed from the masonry walls. Water is collected from more acidity and conductivity area. Apart from these, two samples are collected from Sea and Shrimp pond near the village. They are tested for pH, Electrical conductivity, Sulphate and Chloride content. A questionnaire consists of a number of questions that the respondent has to answer in a set format. These questionnaires are used to know about the current and past situation of the land.

ICCE103: UTILIZATION OF E – WASTE IN THE MANUFACTURE OF HIGH STRENGTH PAVER BLOCKS

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Abstract- E-waste nowadays is a major threat to the entire world due to its unavoidable pollution. Several researches are under progress to minimize the E-waste production across the world. These E-wastes can be ground be used as a partially replacement materials for cement and fine aggregate. This project deals with usage of E-waste in the manufacture of paver blocks & tiles. PCB boards can be grinded into finer material & can be replaced with fine aggregates to certain extent. Plastic pellets from cables & wires are used as fiber or additive materials. In order to improve the workability of concrete, plasticizers to the desired percentage shall be added to improve the color & coloring agents also shall be added. Several tests shall be conducted for comparing the strength with conventional paver blocks.

ICCE106: BIOGAS PRODUCTION FROM WATER HYACINTH

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Abstract- The main object of the project is to produce renewable energy like biogas from solid waste (water hyacinth), to use the unwanted weeds as substitute for methane production and to compare different combination of cow dung and water hyacinth to enhance the biogas yield. Water Hyacinth is collected from Kuruchi Lake, Coimbatore and dried it for dry process followed by shredding. It is grinded for wet process. Then cow dung is collected and mixed it with Water Hyacinth in 1:1 ratios. An anaerobic digester for Bio-gas production is fabricated and the digester is loaded for gas production. Anaerobic digestion is a biological process where organic material is decomposed by anaerobes in absence of air to yield methane rich biogas. The general technology of bio-methanation of complex organic matter is well known and has been applied for over 60 years as part of domestic sewage treatment to stabilize organic wastes. Anaerobic process is more advantageous in solid waste treatment because of high degree of waste stabilization, low production of excess biological.

ICCE107: DEVELOPMENT OF LOW-COST RURAL ROADS USING BIO ENZYMES

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Abstract- Roads, in general, undergoes huge deterioration due to wear and tear as well as the age factor. Not only the above factors, roads also get deteriorated due to poor soil stabilization. Hence, it is required to stabilize the subsoil using bio enzymes, which stabilizes the poor clay soil which is the substrata for the earthen roads as well as paved roads. Generally, Soil stabilization increases the structural integrity of the construction on the soil and is a fundamental part of the road construction industry. Bio enzymes for soil stabilization are increasingly being used for soil stabilization and are replacing the conventional methods. These conventional methods are ecologically adverse and cause heavy carbon emissions. Bio-enzymes catalyse the chemical reactions in the soil surface, which results in increasing the density of soil. And thus, less water retention. This results in getting the soil stabilized and preparing it for the construction of roads.

**ICCE108: EXPERIMENTAL STUDY ON RAIN WATER HARVESTING USING
PERCOLATION PIT TECHNIQUE**

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Abstract- Every year in monsoon our nature gives us life in the form of rainfall but only a small quantity of it is stored in the soil, dams, lakes etc. and remaining water gets wasted. The rainwater that comes to the ground will be infiltrated through the soil layers and helps in recharging the ground water table. But due to heights of development reached in the present days, the earth surface is covered by cement and concrete material, which affects the groundwater recharge leading to water scarcity. Percolation pits are one of the most significant aspect in saving rainwater. A percolation pit is a simple pit excavated into the ground. It enables groundwater recharge by infiltration of surface runoff into rock or soil. In this project we used different types of soil layers in the percolation pit and tested with different layers and its proportions. The soil types choosed are Sandy soil, Clay, River sand and gravel. The soils are arranged in three different alternate layers and the best percolation rate. The Combination of layers are GSRC, CGSR, RCGS. The test setup was done in water bottles. The water filtered is experimentally tested for pH, Total Hardness, Alkalinity, chlorides, Total Solids to ensure the water filtered is fit for drinking. The tests conclude that RCGS layer showed the best result. The water through this layer was crystal clear and fit for drinking.

**ICCE109: BEHAVIOUR OF PERVIOUS CONCRETE BY REPLACEMENT OF
COARSE AGGREGATE WITH CERAMIC WASTE**

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Abstract- Pervious concrete is a type of concrete with high porosity. It is also called as “No fine concrete”, as it is made from a mixture of cement, coarse aggregates, and water. It is usually prepared with gravel or crushed stone as coarse aggregate in its composition. It contains little or no sand, which results in a porous open-cell structure that allows water to pass through readily. Pervious concrete is most often used as a pavement for parking lots. In this work, it is proposed to replace the conventional coarse aggregates by crushed ceramic waste. As ceramic waste is used to replace the coarse aggregate, the cost of concrete is reduced and helps in reducing land pollution.

**ICCE110: EXPERIMENTAL ANALYSIS ON PROPERTIES OF CONCRETE BY
REPLACEMENT OF FINE AGGREGATE USING FUNGI LEACHATE WASTE
FOUNDRY SAND**

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Abstract- Metal foundries use large amounts of sand as part of the metal casting process. Foundries successfully recycle and reuse the sand many times in casting process. This study was aimed to present an eco- friendly approach of utilization of fungal treated waste foundry sand in concrete. The ability of producing organic acid and calcium oxalate monohydrate formation by the fungi *Rhizopus oryzae* and it was collected from Micro lab, Coimbatore. The optimization study was done for inoculum concentration, days of incubation, substrate concentration and WFS percentage. During optimization studies 6 % of fungal inoculum, 3 % of waste foundry sand and 0.6 % of additional nutrient gives maximum organic acid production in 7 days of incubation was found. After incubation concrete cubes were made with fungal treated WFS and untreated WFS. Study also included leachate analysis obtained from the concrete mixes made with fungal treated WFS and untreated WFS. Results showed the metal concentration of Ba, Cd, Cr, Hg, Mn, and Pb were reduced to significant levels as compared with World Health Organization (WHO) standard limits and ground water quality standards (GWQS). The beneficial use of such concrete mixes in construction materials results in strong buildings, reducing disposal problem of waste foundry soil. In this present work, two R.C.C beams were prepared using this fungal treated waste foundry soil.

**ICCE113: ADSORPTION STUDIES FOR THE REMOVAL OF MALACHITE GREEN
DYE FROM AQUEOUS SOLUTION USING GRAPHENE OXIDE**

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Abstract- In this study series of batch operations were carried out using graphene oxide to study the influence of various operating parameters such as contact time, adsorbent dosage, pH, initial concentration and agitation speed on malachite green dye. Graphene oxide was synthesized by modified hummer's method which is to be used as an adsorbent for the removal of dyes. The Scanning electron microscopy (SEM), Fourier transform infrared spectrum (FT-IR), X-ray diffraction (XRD) and Zeta potential analysis were used to characterize the adsorbent. The contact time for maximum dye removal was found to be 90mins. The results indicate that GO can be applied in treating industrial effluent and contaminated natural water.

ICCEI01: Zero Liquid Discharge System In Industrial Effluent

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Abstract- ZLD means Zero liquid Discharge. In this process the raw effluent from the industry taken to the E.T.P for chemical & Biological treatment. Where the chemical used in the effluent can be taken out by increase the Ph and treat it by using aerobic and non aerobic bacteria And the treated water can be filtered by using P.S.F and A.C.F and taken to next stage R.O Where the T.D.S of the Water can be reduced by pass through the R.O Output of the R.O can be two types one is permeate with less T.D.S and reject with more T.D.S and these are collected in tank Then the reject can be taken another Stage R.O and then both permeate from two stage can be take to process in Industry. And then the reject can be take to multi stage evaporator Where the reject water can be convert to vapor and the vapor can be condense and take to reuse.

**ICCEI02: CONSTRUCTION WASTE MANAGEMENT, AND HOW IT CAN
PRESERVE A HEALTHY ENVIRONMENT**

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Abstract- ZLD means Zero liquid Discharge. In this process the raw effluent from the industry taken to the E.T.P for chemical & Biological treatment. Where the chemical used in the effluent can be taken out by increase the Ph and treat it by using aerobic and non aerobic bacteria And the treated water can be filtered by using P.S.F and A.C.F and taken to next stage R.O Where the

T.D.S of the Water can be reduced by pass through the R.O Output of the R.O can be two types one is permeate with less T.D.S and reject with more T.D.S and these are collected in tank Then the reject can be taken another Stage R.O and then both permeate from two stage can be take to process in Industry. And then the reject can be take to multi stage evaporator Where the reject water can be convert to vapor and the vapor can be condense and take to reuse.

ICCEI03: PLASTIC PAVER BLOCKS USING WASTE PLASTIC

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Abstract- The aim of this project is to replace entirely, the cement used in fabrication of paver block so as to reduce the environmental impact created by disposing plastic into the environment also reducing the cost of production of paver blocks. In this project Low Density Polyethylene (LDPE) plastic waste is mixed with M-Sand in varying proportion to find the optimum ratio. Test specimen is prepared for every respective ratio and tested and the results are discussed. This project has been carried out as a solution to the two of the most pressing concerns of today, availability of raw materials and plastic pollution also since no cement is being used and hence the carbon footprint caused by using cement also reduces. This project can contribute to effective plastic waste management because it reclaims LDPE type of plastic, which is the most used type of disposable plastic as a major component thus converting one of the most environmentally degrading wastes into a valuable resource.

ICCEI04: STUDY ON STRENGTH CHARACTERISTICS OF FIBER REINFORCED SELF CURING CONCRETE

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Abstract- Concrete is the second most consumed material in the world after water and it is used most widely in the construction industry due to its good compressive strength and long durability. Conventional concrete (a mixture of cement, fine aggregate, coarse aggregate and water) needs proper curing and moisture contents for a minimum period of 28 days for complete heat of hydration and to attain desired strength. Any laxity in curing will badly affect the strength and durability of concrete. Self Curing Concrete (SCC) is one type of special concretes which overcomes insufficient curing due to human negligence, paucity of water in arid areas, inaccessibility of structures in difficult terrains and in areas where the presence of fluorides in water will badly affect the properties of concrete. The use of polyethylene glycol (PEG 400) in normal concrete as an admixture improves hydration and hence the strength of concrete. This research work is aimed at to investigate the effect of addition of different dosages of self-curing

admixture (i.e. PEG 400 of 0% , 0.5%, 0.75%, 1% and 1.25% by weight of cement) on the mechanical properties such as compressive strength, split tensile strength and flexural strength of M25 grade concrete with and without polypropylene fibers.

ICCEI05: OPTIMISATION OF CARWASH WASTEWATER TREATMENT BY ELECTROCOAGULATION

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Abstract- Treatment of the car wash wastewater (CWW) is crucial important when it is considered as a potential source of environmental health hazard due to the significant concentrations of contaminants such as detergents, oils-greases, phenol, organic materials. In the current study, chemical oxygen demand (COD), methylene blue active substances (MBAS), and turbidity removal efficiencies were conducted from manual CWW using the novel hybrid system including electrocoagulation/flotation (ECF), sedimentation and filtration processes. Experimental design for response surface methodology (RSM), was employed to create two series of 20 experimental runs using monopolar aluminum electrodes. It was optimized using the critical operational parameters such as applied current (1–2 A), electrolysis time (30–90 min) and pH (5–9). The removal efficiencies of COD, turbidity and MBAS were found to be 94.5%, 95% and 95.2% in the optimal condition, respectively. 4.2 kWh/m³ and 0.23 US\$/m³ were determined for energy consumption and costs, respectively. Overall, this hybrid treatment system is proven as an economic and environmentally friendly technique to remove high contaminants from CWW.

ICCEI06: REDUCTION OF TOTAL DISSOLVED SOLIDS FROM SOLAR EVAPORATION PAN BY TYPHA IN TEXTILE INDUSTRY

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Abstract- The total dissolved solids are those solids remain as soluble in textile Effluent. There are several methods available for removal of TDS. In this study the textile effluent is received from common Effluent Treatment plant (CETP). In this industries final effluent has high TDS. Mostly in textile industries the effluent are stored in form of salt to overcome this problem. The plant species TYPHA was directly analyzed in Evaporation Pan TDS was found to be 2,65,000mg/L to 900000mg/L. The salt is produced in RO reject. So the plant typha is introduced in RO reject and to treat TDS reduction in RO reject. Textile industry is one of the most developing industries in India. In this study the textile industry from sIPCOT area was taken in consideration. The plant species were collected from local area. Then the effluent is allowed in

rectangular box contains layer of filters and is test after detention time of interval of one hour and observe the TDS reduction. It consumes high amount of water, processed water and produce highly polluted discharge water in large amounts. In textile industry final effluent has high TDS. The effluents are stored in the form of salt (NaCl). The TDS of the textile effluent was found to be reduced from 265000mg/l to 25000mg/l. The removal efficiency is about 96% and pH removal efficiency about 6.5%.In this study the TDS of the textile industry can be effectively reduced by introducing salt tolerant plants
KEY WORDS: Total dissolved solids, Textile Effluent, Evaporation Pan, Typha.

ICCEI07: VERMICOMPOSTING MIXED WITH ADMIXTURES AND EARTHWORMS

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Abstract- The due increase in population in the country has resulted significant increase in solid waste generation over a last few years. This is the most useful factor for growing the plants. The present paper aims at management of solid waste in regard to vermin composting to help minimize the quantity up to the extent possible as it is also a cost effective technique. This process is mainly required to add nutrients to the soil. The study aimed to convert Yard waste like garden waste, news paper and cardboard, etc in to vermicompost by deploying earth worm and Admixtures like green grams, panchagavya and cow dung. The various parameters like Organic matter, COD, C: N ratio, pH value, carbon, nitrogen, Micro and Macro Nutrients, Were observed in analysis. Hence the only option is to recycle the garden waste. Recycling garden waste by composting/vermicomposting technique coverts the waste into manure to increase soil fertility as the cost of fertilizers showing exponential graph that is unbearable for local farmers. Vermicompost has several advantages over chemical fertilizers and is useful to crops. High lignin contents in garden waste makes the growth of earthworms and micro-organisms difficult in vermicomposting. Effective use of additives can encourage the growth of earthworms, accelerating the decomposition process. They act as a catalyst for the process of vermicomposting The results of the given study indicates that the additive aided vermicomposting process results degradation of organic matter, enrichment of nutrients and better quality of final vermicompost.

**ICCEI08: EXPERIMENTAL INVESTIGATION ON PHYTOREMEDIATION OF
DOMESTIC WASTEWATER USING AQUATIC PLANTS**

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Abstract- Phytoremediation is a bioremediation process that uses various types of plants to remove, transfer, stabilize, and/or destroy contaminants in the soil and water. It takes the advantage of the ability of plants to concentrate elements and compounds from the environment and metabolize various molecules in their tissues. Certain plants have the ability to bioaccumulate, degrade, or render harmless contaminants in soil, water, or air. Mostly the targets of phytoremediation are toxic heavy metals and organic pollutants. In this project the aquatic plants are employed and studied for the treatment of Domestic wastewater, the results recorded and compared with respect to the three different aquatic plants that are locally available abundantly. This project is going to move further in identifying the most efficient aquatic plant which could be employed for the domestic wastewater treatment. The plants identified to be compared in this project are Water Hyacinth (*Eichhornia crassipes*), Duckweed (*Lemna minor*) and Water Lettuce (*Pistia stratiotes*). This Project study aims to improve the quality of discharged water to reach the permissible level of water to be discharged into water bodies or for agricultural land with the help of aquatic plants. Compare the properties of treated wastewater by different aquatic plants. Identify the efficient abundant available aquatic plant for phytoremediation of domestic waste water.

**ICCEI09: SOLAR PHOTO FENTON PROCESS WITH AEROBIC SEQUENTIAL
BATCH REACTOR FOR TREATMENT OF PHARMACEUTICAL WASTEWATER**

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Abstract- The pharmaceutical wastewater was treated by coupling solar photo-Fenton process with an aerobic sequential batch reactor (SBR). Pharmaceutical wastewater has high COD and very low BOD and hence it is difficult to treat them biologically. The main purpose is to determine optimal photo-Fenton conditions (i.e., pH, ferrous ion concentration, H₂O₂ dosage and treatment time) for making wastewater biocompatible and suitable for subsequent biological treatment. Solar photo-Fenton process enhances biodegradability and a significant enhancement of biodegradability was found at the optimum conditions of pH = 3, H₂O₂ = 5 g L⁻¹, Fe²⁺ = 1 g L⁻¹ and irradiation time = 60 min. At this condition BOD₃ /COD ratio increased from 0.015 to 0.54. The coupled solar photo-Fenton with SBR process obtained COD removal of 98% and the effluent COD concentration was found to be 100 mg/L, which meets the requirements of the discharge standard

**ICCEI10: ASSESSMENT OF DRINKING WATER SUITABILITY IN RURAL AREA IN
PUDUKKOTTAI TALUK**

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Abstract- The study is carried out to understand the ground water quality in the monsoon and post monsoon seasons. The various parameters studied are pH, Temperature, Turbidity, Total dissolved solids, Total hardness, Calcium, magnesium, Alkalinity, Chlorides, Fluorides, Sulphates, Phosphates and Nitrates. The present study aims to understand physic-chemical characteristics of groundwater and its public utilization. Along with the damage of water pollution monsoon seasons have a significant negative impact on water resources. Water worsens the ecological situation on a much larger area than covered by water pollution. The sampling sites were selected on the basis of their various location surrounding Pudukkottai Taluk and District.

**ICCEI11: ASSESSMENT OF FUNCTIONAL DEFICIENCIES THROUGH
HYDRAULIC NETWORK MODELLING OF EXISTING SEWERAGE SYSTEM**

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Abstract- The sewage collection system acts as a vital part in the infrastructure sector which also supports the environment. The system is to convey the domestic liquid wastes from the habited areas so as to stop producing any health-related issues. Also, nowadays, awareness for the treatment of wastewater is increasing due to the rise in damage and pollution of the environment. The underground sewerage scheme functions based on the quantity of flow and the gradient of the pipes. The functional deficiencies majorly caused by the higher or lower quantity of flow generated against the designed flow. The defects in laid pipelines or pipeline vertical alignments also impacts the conveyance of the sewage. A case study with analytical procedures on the existing sewer network in the commanding area of Mathulampettai pumping station at Kumbakonam Municipality is being considered. This Project study aims to assess the working conditions of the existing pipelines and to carry out Performance assessment of the system through Hydraulic network modelling.

**ICCEI12: DECENTRALIZED WASTEWATER TREATMENT (DEWATS) USING
MODULAR REED BED METHOD**

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Abstract- A Decentralized Wastewater Treatment System (DEWATS) provides an economically feasible and efficient wastewater treatment solution especially in developing countries. It has an enormous potential for developing a sustainable environmental sanitation system. The decentralized wastewater treatment technique provides a check to the over exploitation of available freshwater by providing a sustainable and eco-friendly method of treatment of the wastewater with zero energy inputs and lesser complex machinery. The key consequences discovered from the life cycle impact assessment and interpretation include COD, P-PO4³⁻, and N-NH₄⁺ emissions into water bodies, as well as sludge disposal. The operating stage was determined to be less harmful to the environment due to its low energy usage. It was concluded that DEWATS can be a good alternative for treating wastewater with negligible energy and chemical consumption. The DEWATS can be implemented at locations where the centralized treatment facility is not feasible, also it can be implemented at commercial, industrial and residential areas where the sewage and sullage can be treated and reused for various purposes. Natural filtering materials such as aloe Vera are used and compared against BOD and COD removal. This paper illustrates the basic design criteria of DEWATS, its functioning and its application in various areas.

**ICCEI13: ENHANCING THE COMPOSTING OF DOMESTIC ORGANIC WASTE
USING ADDITIVES**

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Abstract- Composting are sustainable strategies to transform organic wastes into organic amendments, valuable as potting media or soil conditioner. However, the negative aspects of these processes are emissions of greenhouse gases and odorous molecules and final product potentially containing toxic compounds. These negative aspects can be limited through the addition of organic, inorganic or biological additives to the composted mixture. Compost is organic material that can be added to soil to help plants grow. Food scraps and yard waste together currently make up more than 30 percent of what we throw away, and could be composted instead. This Project study aims to present the main characteristics of composting processes with and without additives, show the influence of additives on speed of reactions in compost and report the effects of additives on the properties of the final products (heavy metal and nutrient contents), in view of their use as a soil conditioner or potting media.

**ICCEI14: PURIFICATION OF TEXTILE DYE WASTE WATER USING NATURAL
COAGULANT (MORINGA SEEDS)**

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Abstract- Industrial pollutants are most harmful to the both environment and mankind. Treatment and disposal of industrial pollutants seems to be great risk for various industries due to its high pollutant concentration. The present study was carried out to confirm the effectiveness of seed powder extracted from mature-dried Moringa Oleifera seeds which are commonly available in most rural communities. The main objective of this work is to evaluate the antimicrobial activity and efficiency of a natural absorbent from Moringa Oleifera seeds in treating textile dye waste water. During this study textile dye waste water samples were collected for treatment by Moringa seeds in powdered form, resulting in an effective natural clarification agent for highly turbid and untreated pathogenic water. Various doses of Moringa seed powder viz. 50, 100 and 150 mg/l were taken and checked for the efficiency dose on raw water. After treatment of seed powder with water samples were analyzed for different parameter like pH, Turbidity, TDS, TS, Hardness, Jar test, Biochemical Oxygen Demand (BOD), Chemical Oxygen Demand (COD). All parameters were reduced with increasing dose of 50, 100 and 150 mg/l seed powder respectively.

**ICCEI15: TREATMENT OF INDUSTRIAL WASTE WATER BY ADSORPTION
(BORASSUS FLABELLIFER)**

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Abstract- Use of various dyes in order to colour the products is a common practice in textile industry. The presence of these dyes in water even at low concentration is highly visible and undesirable. Adsorption experiments were carried out for the removal of dye using Palm Tree Male Flower Activated Carbon (PTMFAC) as the adsorbent by various parameters. The most widely used adsorbent is commercially available activated carbon. In recent years, the safe and economical methods are required for the treatment of textile effluents, which involved researchers to focus towards the preparation of low-cost adsorbents form cheapest sources. This study was carried out for the utilization of Borassus Flabellifer (PTMFAC) as adsorbent for the removal of dyes from wastewater and to establish it as a standard wastewater treatment process for textile dyeing industry. This batch adsorption experiment was carried out for finding the effects of adsorbent's dosage, concentration, PH and contact time on the removal of dyes from the wastewater.

**ICCEI16: INVESTIGATING EFFECTS ON CHROMIUM ADSORPTION FROM
AQUEOUS SOLUTION BY HENNA POWDER AND CORN COB POWDER**

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Abstract- Heavy metal is one of the major environmental and ecological problems in the world. The presence of heavy metal in water and waste water causes toxic effects to the living beings and the environment. Compared to other heavy metals chromium is very toxic. Due to a large number of industries, Chromium contamination exceeds the tolerance limits. Many methods are used to remove the chromium from effluent. Adsorption is one of the cost-effective method, being widely used for the removal of heavy metals from industrial and commercial waste water. The Initial concentration of chromium present in waste water is 4366.544 mg/l. Many of the natural adsorbent are available to remove the heavy metals. This project illustrate the removal of Total Chromium (Cr) from synthetic waste water replicating electro plating industry Effluent by using natural adsorbents like corn cob and Henna leaves. The experiment results carried out in batch adsorption process with varying adsorbent dosage, contact time and pH by using corn cob and Henna leaves for removal of chromium. The results are to be validated by using different isotherms.

**ICCEI17: ANALYSIS AND REMOVAL OF MICRO PLASTIC POLLUTANT IN
VANDIYUR LAKE**

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Abstract- Significant growth of industrialization and rapid urbanization people from villages started migrating to cities which creates the large amount of solid waste daily, resulting in environmental problem for cities. Among all solid waste, 1–4% of waste is coming from plastic waste, out of which most plastic generates from household use, industrial product, food packaging and water bottles. Among these plastics most of them are below 5mm in size such as microplastics. Hence these micro plastics are to analyse and removed by proper method.

ICCEI18: PRODUCTION OF BIO-DIESEL FROM DAIRY SCUM WASTE

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Abstract- A study was conducted to evaluate the capability of production of biodiesel from consortium of native microalgae culture in dairy farm treated waste water. Native algal strains were isolated from dairy farm waste waters collection tank (untreated wastewater) as well as from holding tank (treated wastewater). 72.70% of algal lipid obtained from consortium could be converted into biodiesel. The present study found that bio-diesel from dairy waste scum is quite suitable as an alternative to petroleum diesel with recommended fuel properties as per ASTM standards.

**ICCEI19: EXPERIMENTAL INVESTIGATION ON OPTIMIZATION OF MEMBRANE
BIO REACTOR PROCESS (BIOFLOCS) USING ACTIVATED CARBON AND
ZEOLITE**

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Abstract- The application of membrane bioreactor (MBR) BIOFLOC module processes for conventional, municipal and industrial wastewater treatment [e.g., biological oxygen demand (BOD) reduction] is well established. The research and development of MBR processes for nitrogen removal is more recent. To date, no thorough review of MBR technology for nitrogen removal from wastewater has been carried out. The review presented here provides an overview of MBR process configurations for the removal of nitrogen based on conventional nitrogen-removal pathways (i.e., nitrification/denitrification).

**ICCEI20: REMEDIATION OF ENVIRONMENTAL DYE POLLUTANTS USING ECO-
FRIENDLY PHOTOCATALYTIC MATERIALS**

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Abstract- Malachite Green is taken as a model pollutant. Many researchers have reported that ZnO is a suitable alternate to TiO₂, as ZnO has the advantage of absorbing larger fraction of solar spectrum than TiO₂ and its low cost. Hence, in the present study, the best semiconductor ZnO has been selected for the photocatalytic degradation of dye as it has high photosensitivity and large band gap. The high band gap of semiconductors makes them UV light active and hence used as catalyst in AOPs. It is also possible to make them active in the visible region which

covers major fraction of solar spectrum by reducing the band gap of semiconductors by surface modification. India is a tropical country, so sunlight is an abundantly available natural energy source, which can be utilized for irradiation. Dyes can be degraded in the presence of photocatalyst upon irradiation with visible light because of their absorption in the visible region. Hence, in the present work, to develop its dual role as adsorbent and photocatalyst, agar-agar has been used for modification of the semiconductor photocatalyst, ZnO. In order to utilize the synergistic effect of both agar-agar and ZnO, the chemical modification has been done in the form of composite to carry out photocatalytic reactions under sunlight irradiation.

ICCEI21: EXPERIMENTAL STUDY ON GROUTING OF CRACKS IN CONCRETE CUBES WITH DIFFERENT TREE RESINS

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Abstract- Many of the existing reinforced concrete structures throughout the world are in need of repair, rehabilitation or reconstruction because of deterioration due to the various factors like corrosion, failure of bonding between beam and column joints and increase in service loads etc.,. In this study twenty seven concrete cubes were casted and tested with and without grouting nine cubes without any cracking tested at 7, 14, and 28days. Nine cubes were casted and induced with cracks and subjected to pressure grouting with Azadirachta Indica and nine cubes for prosopis juliflora resin for their respective 7, 14 and 28days. Cube was induced with cracks by ancient Pallava's technique of breaking rocks. After curing the grouted cubes, were tested for compressive strength and the results obtained have been compared. As a result, the objective of this laboratory work is to restore its structural integrity and increase the compressive strength and stiffness of cracked concrete cubes after pressure grouting technique of cracks using various tree resins apart from using conventional Grout chemicals.

ICCEI22: AN ENVIRONMENTAL IMPACT ASSESMENT OF SEWAGE POLLUTION IN MADURAI DISTRICT

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Abstract- The study of Environment Impact Assessment of sewage pollution was conducted in Madurai district of Tamilnadu. The study revealed and directly related the pollution intensity, the averting or defensive expenditure for drinking and irrigation water from non polluted areas. According to contingent valuation study, the proportions of farmers were highly and seriously affected with 85.71 percent study area. The proportion of compensation was lower since the farmers felt it to be not practical and time consuming process. Willingness to pay generally

known as WTP had positive influence on household size and drinking water but had negative influence on age and green index.

ICCEI23: EXPERIMENTAL INVESTIGATION ON STRENGTH OF FLYASH BASED GEOPOLYMER CONCRETE

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Abstract- The production of Ordinary Portland Cement (OPC) causes pollution to the environment, due to the emission of CO. Geopolymer Concrete, an alternate material was introduced to replace OPC. It reacts with alkaline solution to produce Alumina silicate gel that binds the aggregate to produce a concrete of good quality. The mix design with target strength of 40MPa was considered in this study. This study was carried out using several tests, which includes material property test and workability of Geopolymer concrete. GPC in different molarities are designed and tested for the compression strength and split tensile strength. Test results show GPC with 12M have high strength when it is partially replaced with 15% of granite powder for fine aggregate.

ICCEI24: REVIEW ON WASTE WATER TREATMENT TECHNOLOGIES

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Abstract- Nowadays many water resources are polluted by anthropogenic sources including household and agricultural waste and industrial processes. Public concern over the environmental impact of wastewater pollution has increased. Several conventional wastewater treatment techniques, i.e. chemical coagulation, adsorption, activated sludge, have been applied to remove the pollution, however there are still some limitations, especially that of high operation costs. The use of aerobic waste water treatment as a reductive medium is receiving increased interest due to its low operation and maintenance costs. In addition, it is easy-to-obtain, with good effectiveness and ability for degrading contaminants. This paper reviews the use of waste water treatment technologies to remove contaminants from wastewater such as halogenated hydrocarbon compounds, heavy metals, dyes, pesticides, and herbicides, which represent the main pollutants in wastewater.

ICCEI25: ANALYSIS OF MICROPLASTICS IN CANNED DRINKING WATER

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Abstract- Canned water is marketed as being the clean and pure alternative for drinking tap water. However, there is increasing opposition to the use of single-use plastic bottles and the fact that they end up in the environment either as intact bottles (since they take years to degrade), or as secondary microplastics when they do break down into smaller pieces and particles. In these study also reports that microplastics particles have been detected in several brands of canned drinking water. The effects on human health from microplastics are still to be determined, but the presence of microplastics, potentially containing priority organic pollutants (POPs), in food and beverages is a major concern. Environmental pollution has reached an alarming level due to increase in microplastics concentration in the surroundings as industries contribute to production of microplastics. Generally, the microplastics contaminate the total environment by their presence in terrestrial and in coastal regions. In terrestrial regions, human beings are directly affected by microplastics through inhalation, ingestion and other dermal activities. By canned water, a huge amount of microplastics will get accumulated in the body. Analysis of canned water can determine the presence, identity and number of microplastics present. This study investigated the feasibility using Spectroscopy(FTIR) for the detection of microplastics by the results the microplastics (polyethylene, polypropylene and polystyrene) was present in the sample.

**ICCE111: A STUDY ON MECHANICAL PROPERTIES OF SELF CURING
CONCRETE WITH PARTIAL REPLACEMENT OF COPPER SLAG AS FINE
AGGREGATE**

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Abstract- The imagination of a world without concrete is impossible. Concrete is a soul of infrastructures. Concrete is necessary to gain strength in structures. Conventional concrete, which is the mixture of cement, fine aggregate, coarse aggregate and water, needs curing to achieve strength. So it is required to cure for a minimum period of 28 days for good hydration and to achieve target strength. Lack of proper curing can badly affect the strength and durability. Self-curing concrete is one type of modern concrete, which cure itself by retaining water (moisture content) in it. The use of POLYETHYLENE GLYCOL in conventional concrete as an admixture helps better hydration and hence the strength of concrete. In this project study, to study the mechanical characteristics of concrete such as compressive strength, to study the

mechanical characteristics of concrete such as compressive strength, tensile strength, and flexural strength by varying the dosages 1%, 1.5%, 2%, and 2.5% of PEG-4000 by weight of cement for M50 grade of concrete. This study shows that PEG-4000 could help in gaining the strength of conventional curing. This paper reports on an experimental program to investigate the effect of using copper slag as a replacement of sand on the properties of Self curing concrete (SCUC). Concrete mixes were evaluated for workability, compressive strength, tensile strength, and flexural strength. This present study aims to determine the most suitable percentage of PEG-4000 to be added in self-curing concrete and also the optimum percentage of copper slag as a partial replacement for fine aggregate. For this purpose, many literature reviews are studied. For testing M50 grade concrete is to be used.

ICCE112: EXPERIMENTAL INVESTIGATION OF SISAL FIBER REINFORCED SELF COMPACTING CONCRETE

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Abstract- Self-Compacting Concrete (SCC) can be defined as a concrete that is able to flow under its own weight and completely fill the form work, even in the presence of congested without any compaction, while maintain the homogeneity of the concrete. The high workability is one of the crucial properties of SCC and can be controlled by appropriate dosage of super plasticizer. Sisal fiber is made from the leaves of the plants. The botanical name is Agave Sisalana. It is mainly produced in Mexico. The fiber is usually obtained by machine decortication in which the leaf is crushed between rollers and then mechanically scraped. Sisal fiber is one of the most commonly used natural fibers and is easily grown. Sisal is completely biodegradable and highly renewable energy resource. This present study aims to determine the most suitable percentage of sisal fiber to be added in self-compacting concrete. For this purpose many literature reviews are studied. For testing M50 grade concrete is to be used. In this project study, the mechanical characteristics of concrete such as compressive strength, tensile strength, and flexural strength by varying the dosage of 0.5%, 1% and 1.5% of sisal fiber by weight of cement for M50 grade of concrete.

ICCE115: PARTIALLY REPLACEMENT CEMENT BY SUGARCANE

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Abstract- Experimental study is to investigate the use of sugar bagasse concrete as a partial replacement for cement in order to improve the strength and durability of concrete. Experimental study of the influence of sugar bagasse concrete on strength. Sugarcane bagasse ash's application as a cement substitute material showed encouraging results, according to the study. Because of its chemical composition, fineness, and well-controlled incineration process. Many forms of ash do not exhibit hydraulic or pozzolanic reactivity, yet they can be employed as inert materials in civil construction. Slump cone test, Compressive strength, Tensile strength were performed on concretes including sugarcane bagasse ash as a cement substitute. The sugarcane bagasse ash samples had physical qualities that were similar to those of cement, according to the findings. In concrete, use sugarcane bagasse ash can as a partial substitute for cement. The goal of this initiative is to replace cement with sugar bagasse at a rate of different percentages. After a 7 to 28-day curing period, the strength characteristics will be compared to those of traditional concrete. Concrete grade utilized in this project. Because sugar bagasse is being utilized instead of regular concrete, the cost will be lower.

ICCE116: PALM KERNEL SHELL

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Abstract- The disposal of garbage is a major issue and the intense exploitation of natural resources makes it difficult to locate them. The use of waste materials as construction materials offers various advantages, including cost savings, energy savings, and environmental protection. As a result, this experimental study was carried out in order to assess the utilisation of palm kernel shell as a partial substitute for coarse aggregate in concrete while taking compressive strength into consideration. The use of palm kernel shell as coarse aggregate in concrete promotes the use of environmentally friendly and sustainable materials in building. The environment, as well as construction and building technologies to enhance the natural world and building materials, is the primary concerns of this research. An experimental research looked at the qualities of concrete made with crushed palm kernel shell as coarse aggregate. Crushed palm kernel shells were used to substitute coarse aggregate in three different percentages, namely 5%, 10%, and 15%. The slump, compressive strength and splitting tensile strength will be tested. The above-mentioned mixes' slump, compressive strength, and splitting tensile strength were

compared to those of standard concrete. The study's findings are likely to encourage the usage of palm kernel shell as a replacement for traditional coarse aggregates.

**ICCE117: AN EXPERIMENTAL INVESTIGATION AND WEAR
CHARACTERIZATION OF ALUMINIUM – SILICON CARBIDE – TITANIUM
COMPOSITES**

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Abstract- The current trend in the materials engineering sector is to develop newer materials that can replace the existing materials in various engineering sectors in order to be more and more efficient. Therefore, the present research work is aimed at fabricating and determining the wear properties of Aluminium-silicon carbide – Titanium reinforced aluminium alloy (Al6061) metal matrix composites (MMCs). This investigation focuses at evaluating the wear properties of Aluminium in the presence of Silicon Carbide - titanium and their combinations. The Aluminium-Silicon carbide - titanium Metal matrix Composites were fabricated using stir casting process. The tests for mechanical properties of metal matrix composites like wear characterization were carried out using pin on disc apparatus. In the presence of silicon carbide and titanium with Aluminium matrix, it may evident that the densities of the composites were decreased and reflect on wear test.

ICCEI01: ZERO LIQUID DISCHARGE SYSTEM IN INDUSTRIAL EFFLUENT

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Abstract- ZLD means Zero liquid Discharge. In this process the raw effluent from the industry taken to the E.T.P for chemical & Biological treatment. Where the chemical used in the effluent can be taken out by increase the Ph and treat it by using aerobic and non aerobic bacteria. And the treated water can be filtered by using P.S.F and A.C.F and taken to next stage R.O Where the T.D.S of the Water can be reduced by pass through the R.O Output of the R.O can be two types one is permeate with less T.D.S and reject with more T.D.S and these are collected in tank Then the reject can be taken another Stage R.O and then both permeate from two stage can be take to process in Industry. And then the reject can be take to multi stage evaporator Where the reject water can be convert to vapor and the vapor can be condense and take to reuse.

ICCEI03: PLASTIC PAVER BLOCKS USING WASTE PLASTIC

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Abstract- The aim of this project is to replace entirely, the cement used in fabrication of paver block so as to reduce the environmental impact created by disposing plastic into the environment also reducing the cost of production of paver blocks. In this project Low Density Polyethylene (LDPE) plastic waste is mixed with M-Sand in varying proportion to find the optimum ratio. Test specimen is prepared for every respective ratio and tested and the results are discussed. This project has been carried out as a solution to the two of the most pressing concerns of today, availability of raw materials and plastic pollution also since no cement is being used and hence the carbon footprint caused by using cement also reduces. This project can contribute to effective plastic waste management because it reclaims LDPE type of plastic, which is the most used type of disposable plastic as a major component thus converting one of the most environmentally degrading wastes into a valuable resource.

**ICCEI04: STUDY ON STRENGTH CHARACTERISTICS OF FIBER REINFORCED
SELF CURING CONCRETE**

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Abstract- Concrete is the second most consumed material in the world after water and it is used most widely in the construction industry due to its good compressive strength and long durability. Conventional concrete (a mixture of cement, fine aggregate, coarse aggregate and water) needs proper curing and moisture contents for a minimum period of 28 days for complete heat of hydration and to attain desired strength. Any laxity in curing will badly affect the strength and durability of concrete. Self-Curing Concrete (SCC) is one type of special concretes which overcomes insufficient curing due to human negligence, paucity of water in arid areas, inaccessibility of structures in difficult terrains and in areas where the presence of fluorides in water will badly affect the properties of concrete. The use of polyethylene glycol (PEG 400) in normal concrete as an admixture improves hydration and hence the strength of concrete. This research work is aimed at to investigate the effect of addition of different dosages of self-curing admixture (i.e. PEG 400 of 0% , 0.5%, 0.75%, 1% and 1.25% by weight of cement) on the mechanical properties such as compressive strength, split tensile strength and flexural strength of M25 grade concrete with and without polypropylene fibers.

**ICCEI05: OPTIMISATION OF CARWASH WASTEWATER TREATMENT BY
ELECTROCOAGULATION**

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Abstract- Treatment of the car wash wastewater (CWW) is crucial important when it is considered as a potential source of environmental health hazard due to the significant concentrations of contaminants such as detergents, oils-greases, phenol, organic materials. In the current study, chemical oxygen demand (COD), methylene blue active substances (MBAS), and turbidity removal efficiencies were conducted from manual CWW using the novel hybrid system including electrocoagulation/flotation (ECF), sedimentation and filtration processes. Experimental design for response surface methodology (RSM), was employed to create two series of 20 experimental runs using monopolar aluminum electrodes. It was optimized using the critical operational parameters such as applied current (1–2 A), electrolysis time (30–90 min) and pH (5–9). The removal efficiencies of COD, turbidity and MBAS were found to be 94.5%, 95% and 95.2% in the optimal condition, respectively. 4.2 kWh/m³ and 0.23 US\$/m³ were determined for energy consumption and costs, respectively. Overall, this hybrid treatment system is proven as an economic and environmentally friendly technique to remove high contaminants from CWW.

ICCEI06: ANALYSIS OF MICROPLASTICS IN CANNED DRINKING WATER

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Abstract- Canned water is marketed as being the clean and pure alternative for drinking tap water. However, there is increasing opposition to the use of single-use plastic bottles and the fact that they end up in the environment either as intact bottles (since they take years to degrade), or as secondary microplastics when they do break down into smaller pieces and particles. In these study also reports that microplastics particles have been detected in several brands of canned drinking water. The effects on human health from microplastics are still to be determined, but the presence of microplastics, potentially containing priority organic pollutants (POPs), in food and beverages is a major concern. Environmental pollution has reached an alarming level due to increase in microplastics concentration in the surroundings as industries contribute to production of microplastics. Generally, the microplastics contaminate the total environment by their presence in terrestrial and in coastal regions. In terrestrial regions, human beings are directly affected by microplastics through inhalation, ingestion and other dermal activities. By canned water, a huge amount of microplastics will get accumulated in the body. Analysis of canned water can determine the presence, identity and number of microplastics present. This study investigated the feasibility using Spectroscopy(FTIR) for the detection of microplastics by the results the microplastics (polyethylene, polypropylene and polystyrene) was present in the sample.

DEPARTMENT

OF

COMPUTER SCIENCE AND ENGINEERING

ICCS101: A SECURE GROUP DATA SHARING IN CLOUD WITH DATA INTEGRITY VERIFICATION USING THIRD PARTY AUTHENTICATION

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Abstract – Cloud computing provides high performance, accessibility and low cost for data storing and sharing, provides a better consumption of resources. In cloud computing, cloud service providers compromise an abstraction of infinite storage space for clients to mass data. It can help clients diminish their financial overhead of data managements by drifting the local managements system into cloud servers. However, security concerns develop the main constraint as we now outsource the storage of data, which is possibly sensitive, to cloud providers. To preserve data privacy, a mutual approach is to encrypt data files before the clients upload the encrypted data into the cloud. Cloud storage services can help clients reduce their monetary and maintenance overhead of data managements. To overcome the problem, here propose a secure data sharing scheme for frequently changed groups. In this work, an AES based encryption scheme is proposed which incorporates the cryptographic approaches with Group Data Sharing and also an anonymous control scheme to address the privacy in data as well as the user identity privacy in current access control schemes. Finally implement this secure distribution scheme into group data sharing environments. To reduce the computation burden on the user side, a Third-Party Auditor (TPA) is introduced to verify the integrity of the cloud data on behalf of user. When owner send request for file auditing, TPA will check the file integrity using TPA verification key and send results to the owner.

ICCS103: TIME BASED ACCESS PERMISSION WITH SECURE DATA SHARING THROUGH CLOUD ENVIRONMENT

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Abstract – Cloud service separates the data from the cloud service client (individuals or entities), depriving their direct control over these data, the data owner cannot trust the cloud server to conduct secure data access control. Therefore, the secure access control problem has become a challenging issue in public cloud storage. Here propose an efficient time and attribute factors combined access control scheme, named TAFC, for time-sensitive data in public cloud. The proposed TAFC can realize a fine-grained and timed releasing access control system: Only one user with a satisfied attribute set can access the data after the specific time. The data owner (Owner) decides the access policy based on a specific attribute set and one or more releasing time points for each file, and then encrypts the file under the decided policy before uploading it. By integrating Time based access control and CP-ABE in public cloud storage, propose an efficient scheme to realize secure fine-grained access control for time-sensitive data. In the

proposed scheme, the data owner can autonomously designate intended users and their relevant access privilege releasing time points. Besides realizing the function, it is proved that the negligible burden is upon owners, users and the trusted server. In order to build a scalable and fine-grained access control system for outsourced time-sensitive data, we combine two advanced cryptographic techniques, namely CP-ABE and TRE. The former one is to provide an expressive access control primitive with determined attribute sets; and the latter one is to realize timed-release function.

ICCS104: E-BUG TRACKING SYSTEM

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Abstract – This defect tracking system helps to track bug. There are three modules in this tracking system, Administrator, Staff and Customer. The Administrator can login to the app and can enter the details of staff, project, view bugs send from the customers. The admin can also assign work to staffs, view bug case flow status details, send messages to customers using this bug tracking application. The staff can login to the site using username and password. Then he/she can view the bugs assigned to them. He can directly give solution message to customers, or he/she can assign the bugs to other staffs if the bug is related to them. The user may view bug case flow details with which he/she is involved. The customer registers into the applications and login to the site using username and password. Whenever a bug is raised from his software, he sends the bug details to the administrator with print screen of the bug generated. He/she may see the bug case flow details and bug status along with remedy details at any time using the ticket number generated during new bug entry. This is how bug tracking can be done with this application. The enhancement is that the newly created bug or issue request is related to other bug or issue request which are already created in the project/product. If it finds the similar or same bug or issue request, then the bug tracker system will add the comment in the newly created bug or issue request that “This bug is related to the already created bug or issue request in this project/product with the bug or issue request id”. We address the problem of duplicate bugs, i.e., how to reduce the duplicate bug data to save the labor cost of developers and improve the quality to facilitate the process of fixing the bugs. In our work, we combine existing techniques of instance selection and feature selection to simultaneously reduce the duplicate bugs reported by customer or tester.

ICCS105: AN INTELLIGENT DARKNET-53 BASED ANIMAL DETECTION SYSTEM

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Abstract – Efficient and reliable monitoring of wild animals in their natural habitat is essential. This project develops a system to detect the animals with automatic alert in wild life. Since there are large number of different animals manually identifying them can be a difficult task. This algorithm classifies animals based on DarkNet deep learning model. so, we can monitor them more efficiently. Animal detection and classification can help to prevent animal-vehicle accidents, trace animals and prevent theft. This can be achieved by applying effective deep learning algorithms. Further, Arduino based embedded system integrated to alert animal presence with location information by using GSM and GPS devices.

ICCS106: A NEW MEASURE OF IMAGE ENHANCEMENT IN MEDICAL IMAGING SYSTEMS

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Abstract – Medical imaging systems usually need the appliance of image enhancement techniques to assist radiologists in anomaly/abnormality detection and diagnosis, additionally on improve the standard of images and scale back error rate. In this paper we tend to precede DLAHE (Double Layer adaptive histogram Equalization) a unique image enhancement methodology to boost the appearance and also the visual quality of images characterized by a gray level intensity equalization histogram. DLAHE is exploited as a pre-processing step of the enhancement of pictures with an almost equalization histogram distribution, to enhance the results by an image processing technique. The researcher uses DLAHE as a clinical professional system for contrast-enhanced Medical image analysis. The performances of DLAHE are quantitatively evaluated by means that of various image enhancement metrics, and compared against the traditional progressive image enhancement techniques. The researcher presents a DLAHE significantly out performs the other approaches in terms of signal and perceived image quality, whereas conserving the input mean brightness. DLAHE could have a major impact in real healthcare environments, representing an intelligent resolution for expert system, in radiology enhancement for image improvement, to visually assist physicians during their interactive deciding tasks, similarly as for the improvement of downstream automated process pipelines in clinically helpful measurements.

ICCS108: WEB BASED CHAT APPLICATION SERVER

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Abstract – In this paper, we are planning to develop application for web based chat. The development that rapidly making begins with the collection of relevant data that will display in the web and mobile versions, use to build server.

ICCS109: CREDIT CARD FRAUD DETECTION USING MACHNE LEARNING

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Abstract – In this paper, we are planning to detect the credit card fraud using machine learning. It is the most frequent problem in the present world. This is due to raise of online transactions & e-commerce platforms. This project mainly focuses on machine learning algorithms. The algorithms are forest algorithm & adaboost algorithm.

**ICCS110: A CLOUD STORAGE SYSTEM FOR SHARING DATA SECURELY
WITH PRIVACY PRESENTATION**

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Abstract – With cloud data services, it is commonplace for data to be not only stored in the cloud, but also shared across multiple users. Unfortunately, the integrity of cloud data is subject to skepticism due to the existence of hardware/software failures and human errors. Several mechanisms have been designed to allow both data owners and public verifiers to efficiently audit cloud data integrity without retrieving the entire data from the cloud server. However, public auditing on the integrity of shared data with these existing mechanisms will inevitably reveal confidential information—identity privacy—to public verifiers. In this paper, we propose a novel privacy-preserving mechanism that supports public auditing on shared data stored in the cloud. And also we introduced thump impression technique. From this new technology we give High level security to the share data in clouds. In particular, we exploit ring signatures to compute verification metadata needed to audit the correctness of shared data. With our mechanism, the identity of the signer on each block in shared data is kept private from public verifiers, who are able to efficiently verify shared data integrity without retrieving the entire file. In addition, our mechanism is able to perform multiple auditing tasks simultaneously instead of

verifying them one by one. Our experimental results demonstrate the effectiveness and efficiency of our mechanism when auditing shared data integrity.

ICCSI01: TWO LEVEL PROGRESSIVE CROSS MEDIA KNOWLEDGE TRANSFER

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Abstract- As multimedia data has been the main form of big data, cross-media retrieve becomes a research hotspot. It provides a flexible retrieval paradigm across different media types, such as using an image query to retrieve the relevant text, video and audio. An effective model to establish crossmedia correlation is indispensable for retrieval. Existing methods usually rely on labeled data for model training, but it is extremely labor consuming to collect and label cross-media data. Under this situation, it is a key issue towards the real application to transfer knowledge from existing data to new data, for reducing the human labor. However, little attention has been paid to knowledge transfer between two cross-media domains. Therefore, this paper proposes the approach of two-level progressive crossmedia knowledge transfer (TPCKT), which transfers knowledge from large-scale cross-media data, to boost the retrieval accuracy on cross-media data of another domain. Its contributions are: Two-level adversarial transfer architecture is proposed with domain discriminators in media-specific level and media-shared level, which have partially-shared parameters to preserve crossmedia consistency of transfer. The domain discrepancy between cross-media domains is fully reduced for boosting the retrieval accuracy. Progressive semantic transfer mechanism is proposed to iteratively select semantically related categories in two crossmedia domains for transfer. This drives the transfer process with ascending difficulties, for addressing the difficulty from different label spaces, and ensuring the robustness of transfer. For the experiment, the large-scale cross-media dataset widely-used small scale datasets are adopted as the target domains to perform retrieval. Experimental results show the promising improvement gained by the proposed TPCKT.

ICCSI02: AUTOMATIC SPEECH EMOTION RECOGNITION USING MACHINE LEARNING

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PG Scholar, Pandian saraswathi yadav engineering college.

Abstract- This chapter presents a comparative study of speech emotion recognition (SER) systems. Theoretical definition, categorization of affective state and the modalities of emotion expression are presented. To achieve this study, an SER system, based on different classifiers and different methods for features extraction, is developed. Mel-frequency cepstrum coefficients (MFCC) and modulation spectral (MS) features are extracted from the speech signals and used to train different classifiers. Feature selection (FS) was applied in order to seek for the most relevant feature subset. Several machine learning paradigms were used for the emotion classification task. A recurrent neural network (RNN) classifier is used first to classify seven

emotions. Their performances are compared later to multivariate linear regression (MLR) and support vector machines (SVM) techniques, which are widely used in the field of emotion recognition for spoken audio signals. Berlin and Spanish data-bases are used as the experimental data set. This study shows that for Berlin data-base all classifiers achieve an accuracy of 83% when a speaker normalization (SN) and a feature selection are applied to the features. For Spanish database, the best accuracy (94 %) is achieved by RNN classifier without SN and with FS.

ICCSI03: FACIAL EXPRESSION RECOGNITION BASED ON CONVOLUTIONAL NEURAL NETWORK

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Abstract- Facial expression recognition is an important field of pattern recognition research. Traditional machine learning methods extract features manually. It has insufficient generalization ability and poor stability. Moreover, its accuracy is difficult to improve. In order to achieve better facial expression recognition, using deep convolutional neural network. To avoid over fitting, the network output uses a global average layer. Data enhancement on the dataset before training can improve the generalization ability of the model. Test the performance of network on the FER2013 emoticon dataset. Compared to other recognition algorithms, network has certain advantages. Finally, a real-time facial expression recognition system is constructed by using the trained recognition model. The experimental results show that the system can effectively recognize facial expressions in real time. We have made our two best-performing ConvNet models publicly available to facilitate further research on the use of deep visual representations in computer vision.

ICCSI04: AVOID VEHICLE MAINTENANCE CONTINUOUSLY USING IMAGE PROCESSING FOR POTHOLE DETECTING

K.Shanmugapriya,

PG Scholar, Pandian Saraswathi Yadav engineering college Sivagangai

Abstract- The proper planning of repairs of repairs and rehabilitation of the asphalt pavement is one of the important tasks for safe driving. The most common form of distress on asphalt pavements are potholes which can compromise safety, and result in vehicle damage. Timely repairing potholes is crucial in ensuring the safety. Quality of driving, and reducing the cost of vehicle maintenance. In this process, use very good segmentation for exact pothole place analysis and area calculate. to execute the simulation in MATLAB 2013 a.

ICCSI05: UNCERTAINTY MODELLING AND REDUTION IN MANETs

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Abstract- Evaluating and qualifying trust stimulates collaboration in mobile ad hoc networks (MANETs). Many existing reputation systems sharply divide the trust value into right or wrong, thus ignoring another core dimension of trust uncertainty. As uncertainty deeply impacts a node's anticipation of other's behavior and decisions during interaction, we include uncertainty in the reputation system. Specifically, we define a new uncertainty model to directly reflect a node's confidence in the sufficiency of its past experience, and study how the collection of trust information affects uncertainty in node's opinions. After defining a way to reveal and compute the uncertainty in trust opinions, we exploit mobility, one of the important characteristics of MANETs, to efficiently reduce uncertainty and to speed up trust convergence. Two different categories of mobility-assisted uncertainty reduction schemes are provided: the proactive schemes exploit mobile nodes to collect and broadcast trust information to archive trust convergence; the reactive schemes provide the mobile nodes method to get authenticated and bring their reputation in the original region to the destination region. Both of the schemes offer a controllable trade-off between delay, cost, and uncertainty. Extensive analytical and simulation results are presented to support our uncertainty model and mobility-assisted reduction schemes.

ICCSI06: A PRODUCTIVE ASSET MANAGEMENT WEB APPLICATION

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Abstract- The Investigain is a progressive web application to make mutual funds investments through a Systematic Investment Plan. The application utilizes the web's modern capabilities, such as Asynchronous JavaScript and XML (AJAX), JavaScript, and Hypertext Marker Language (HTML5). The application also uses a powerful relational database management system, such as MySQL, to display asset management information. The application has two portals, one for investors and one for a particular asset manager or asset management company. Each investor has an account in the investor portal. The investor can view his/her profile, current balance, balance history, dividends, the units of mutual funds bought, unit price, the value of each mutual fund, and can pay installments using an embedded online payment gateway. Asset managers can monitor all investments, manage user accounts, and reimburse dividends using the admin portal. This paper also presents the experimental results of using the Investigain application, compares them with existing systems, and details the application's prospect to improve its socio-economic conditions. The system's frontend is designed with Bootstrap and jQuery frameworks. The backend is designed using Hypertext Preprocessor (PHP) server-side scripting language. The system demonstrated increased satisfaction from its clients.

**ICCSI07: ANDROID APP DEVELOPMENT APPLIED TO REMOTE TASKS
SIMPLIFICATION**

B.Pandimeena,

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Abstract-Mobile devices, especially tablets and smartphones, have achieved enormous popularity over the last ten years due to their ease of use and multifunctionality, thus gaining meritoriously a prominent space in our daily lives. On the opposite side, despite improvements in usability and intuitiveness, to use desktop devices users must learn how to interact with the operating system, how to achieve tasks, and fulfill system's specifications. This paper aims to present a methodology that responds to identified needs of users allowing them to execute desktop tasks from mobile applications. Based on real-time database, picture-driven computing, task automation and mobile interactive systems the approach aims to reduce the challenges that users face while trying to perform a task, as well as improving the efficiency of task performance. The approach combines the features and capabilities of both PyAutoGUI and Firebase tools to simplify the process used by such users to perform tasks. The use of mobile devices enhances the usability of the new interactive system. This paper describes the methodology and the research is illustrated by means of a daily task application example.

**ICCSI08: WEB-APPLICATION DEVELOPMENT USING THE
MODEL/VIEW/CONTROLLER DESIGN PATTERN**

M.yogalakshmi,

PG Scholar, Pandian Saraswathi Yadav Engineering College Sivagangai.

Abstract - The Model/View/Controller design pattern is very useful for architecting interactive software systems. This design pattern is partition-independent, because it is expressed in terms of an interactive application running in a single address space. Applying the Model/View/Controller design pattern to web-applications is therefore complicated by the fact that current technologies encourage developers to partition the application as early as in the design phase. Subsequent changes to that partitioning require considerable changes to the application's implementation- despite the fact that the application logic has not changed. This paper introduces the concept of Flexible Web-Application Partitioning, a programming model and implementation infrastructure, that allows developers to apply the Model/View/Controller design pattern in a partition-independent manner Applications are developed and tested in a single address-space; they can then be deployed to various client/server architectures without changing the application's source code. In addition, partitioning decisions can be changed without modifying the application.

ICCS111: CHATTING TOOL WITH DESKTOP

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Abstract – The chatting tool with desktop is used to open the applications by default and as well as will support the instructions by the user who operates the system . The instructions are inbuilt in code. It's like an IT automation tool since, human input is minimized.IT automation is the process of creating software and systems to replace repeatable processes and reduce manual intervention. It accelerates the delivery of IT infrastructure and applications by automating manual processes that previously required a human touch.By using this technique, we can implement various purposes. Some of the use case scenarios are Application deployment, Security and compliance, Incident management. Benefits are reduction Accuracy, Efficiency, Increase in productivity, etc.

**ICCS112: ROLE BASED ACCESS CONTROL SYSTEM USING TRIPLE DES
ALGORITHM**

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Abstract – Today more and more security-relevant data is stored on computer systems; security critical business processes are mapped to their digital counterparts. This situation applies to various domains such as health care industry, digital government, and financial service institutes requiring that different security requirements must be fulfilled. Authorization constraints can help the policy architect design and express higher-level organizational rules. Application Digital Security Management System provides an enhanced security model other than that of provided by the web technologies, framework used, techniques supported by the operating system. This project have implemented a technique which traces user events there by giving an analytical report which can help us to improve the security, code development style, accessibility control assignment in a shared work environment model. The Roles/Responsibilities which have to be assigned to the users are under the operation of the Administrator or Manager. For security purpose the Cryptographic algorithm used is Caesar Cipher algorithm. Security log file, Database entries for future analysis purpose and immediate intimation to the management category users through mails (if only configured properly) are the added advantages, and the security handling module of our application. Since the application is developed in the for-coming VB.NET technology further enhancement of our application will not be a burden under any category. Inbuilt security supports in the technology helps us to secure our application well, and to design and develop the all mentioned in a great manner with simplified, standard design architecture.

ICCS113: DATA ANALYTICS WITH POWER BI

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Abstract – Data analytics is a method of applying quantitative and qualitative techniques to analyse data, aiming for valuable insights. With the help of data analytics, we can explore data (exploratory data analysis) and we can even draw conclusions about our data (confirmatory data analysis). In this project, we will study data analytics, starting from the very basics and slowly getting into the details of Power BI technology used to analyse our data. This project helps the reader to examine large datasets and recognize patterns in data, hence generating reports. To conclude, data analytics is key for helping stakeholders make decisions, and thus establishing a measurement and data analysis program is a recognized best practice within the business industry.

ICCS114: HEART DISEASE PREDICTION

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Abstract – Healthcare and IT are both really keen and simultaneously reluctant bedfellows. It is well known that there is a huge push towards the use of IT and electronic data in healthcare, highlighted by the push for electronic medical records and of advanced IT systems that can be used to centrally manage patient information and share it appropriately to those who need to know while simultaneously protecting patient privacy. But while there is this huge desire to make use of information technology to provide better record keeping and more complete information, there is a corresponding reluctance to trust what is inherently a human service to an automated system. Nevertheless, with the current crisis in healthcare and healthcare costs in the Government Hospital, the need for reform and the need to find good automation solutions to cut costs is very real. The result is that IT professional and medical professionals find themselves working together toward solutions while by and large remaining relatively ignorant about their two separate fields. There are vanishingly few MDs who also understand technology, development and how to build systems. And there are vanishingly few developers who understand medicine or even how healthcare operates as a business. There are groups doing their best to break through these barriers and many of them are right here in the Bay Area. And if you want a front row seat and even the chance to meet with and influence some of these people, you should come to the Healthcare center, Government Hospital in cities and Technology Mingle Jingle. It is being held all day on and there are panels, demonstrations, discussions and a reception. Every patient's records stored with their finger prints.

**ICCS107: A LESS ENERGY CONSUMING RANDOM PERMUTATION ALGORITHM-
TRANSLATION CIPHER TECHNIQUE (RPAT) FOR WSN ENVIRONMENT**

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Abstract – Security in wireless sensor network plays an important role in the life of a WSN node. A wireless sensor network (WSN) is a clustered structure with multiple sensor nodes. It has a source and destination node in between this the nodes forming a cluster structure. The data transmission between the sensor nodes is difficult in maintaining security with the consumption of energy. The presence of an intruder within the system makes data loss with more energy and make the system to be unused. So, deployment of a security algorithm makes the process of encryption and decryption of the message with minimal energy consumption. The proposed security-based less energy consumption algorithm called A Random Permutation Algorithm-Translation cipher technique (RPAT) is purely based on Advanced Encryption Standard (AES). The RPAT has more impact on handling messages with minimal energy consumption. PRPA follows the same steps of AES but shows a difference in the framing of the algorithm when it deals with the key. Thus, the proposed algorithm of RPAT satisfies the message security and enhance the life of WSN node.

ICCS117: DELIRIUM IN PALLIATIVE CARE

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Abstract – Delirium is a devastating complication of general medical and surgical populations but of particular importance in palliative medicine. It is a clinical syndrome that is often not recognized and, therefore, not treated appropriately. The presence of delirium is a predictor of increased morbidity and mortality, longer hospitalization, and more likely discharge to a nursing facility. This article reviews the pathophysiology, etiology, diagnosis, and treatment of delirium in the palliative medicine population.

ICCS118: FAKE NEWS DETECTION USING MACHINE LEARNING

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Abstract – The phenomenon of Fake news is experiencing a rapid and growing progress with the evolution of the means of communication and Social media. Fake news detection is an emerging research area which is gaining big interest. It faces however some challenges due to the limited resources such as datasets and processing and analysing techniques. In this work, we propose a system for Fake news detection that uses machine learning techniques. We used term frequency-inverse document frequency (TF-IDF) of bag of words and n-grams as feature extraction technique, and Support Vector Machine (SVM) as a classifier. We propose also a dataset of fake and true news to train the proposed system. Obtained results show the efficiency of the system. In this work, we propose a system for Fake news detection that uses machine learning techniques. We used term frequency-inverse document frequency (TF-IDF) of bag of words and n-grams as feature extraction technique, and Support Vector Machine (SVM) as a classifier. We propose also a dataset of fake and true news to train the proposed system. Obtained results show the efficiency of the system.

ICCS119: MACHINE LEARNING ALGORITHM FOR PREDICTING THE CROP YIELD

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Abstract – Machine learning is an important decision support tool for crop yield prediction, including supporting decisions on what crops to grow and what to do during the growing season of the crops. Several machine learning algorithms have been applied to support crop yield prediction research. In this study, we performed a Systematic Literature Review (SLR) to extract and synthesize the algorithms and features that have been used in crop yield prediction studies. Based on our search criteria, we retrieved 567 relevant studies from six electronic databases, of which we have selected 50 studies for further analysis using inclusion and exclusion criteria. We investigated these selected studies carefully, analyzed the methods and features used, and provided suggestions for further research. According to our analysis, the most used features are temperature, rainfall, and soil type, and the most applied algorithm is Artificial Neural Networks in these models. After this observation based on the analysis of machine learning-based 50 papers, we performed an additional search in electronic databases to identify deep learning-based studies, reached 30 deep learning-based papers, and extracted the applied deep learning algorithms. According to this additional analysis, Convolutional Neural Networks (CNN) is the most widely used deep learning algorithm in these studies, and the other widely used deep learning algorithms are Long-Short Term Memory (LSTM) and Deep Neural Networks (DNN).

ICCS120: APPLYING ENSEMBLE LEARNING AND A CONVOLUTION NEURAL NETWORK FOR COVID 19 DETECTED AUTOMATICALLY FROM X RAY & CT IMAGES

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Abstract – Covid-19 continues to have catastrophic effects on the lives of human beings throughout the world. To combat this disease, it is necessary to screen the affected patients in a fast and inexpensive way. One of the most viable steps towards achieving this goal is through radiological examination, Chest X-Ray being the most easily available and least expensive option. In this paper we have proposed a Deep Convolutional Neural Network based solution which can detect the Covid-19 +ve patients using chest X-Ray images. To test the efficacy of the solution we have used publicly available chest X-ray images of Covid +ve and -ve cases. 538 images of Covid +ve patients and 468 images of Covid -ve patients have been divided into 771 trainable images and 235 testing images. Our solution gave a classification accuracy of 95.7% and sensitivity of 98% in the test set-up. We have developed a GUI application for public use. This application can be used on any computer by any medical personnel to detect Covid +ve patients using Chest X-Ray images within a very few seconds.

ICCS121: RELIABILITY OF ANDROID APPS PRIVACY POLICY

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Abstract – When settings on apps. When you download apps, they often ask for permission to access personal information like contacts, your location, or even your camera. They may need this information to make the app work, but they also may share this information with other companies. Review the app's permissions. Go to your settings to review the permissions to make sure the app doesn't have access to information or features it doesn't need. Turn off unnecessary permissions. Consider deleting apps that need a lot of permissions – some apps request lots of permissions that aren't needed for the app's function. Pay special attention to apps that have access to your contact list, camera, storage, location, and microphone. Limit location permissions. Some apps have access to your device's location services. If an app needs access to your location data to function, think about limiting the access to only when the app is in use. Don't automatically sign in to apps with a social network account. Signing in to an app with your social network account information often lets the app collect information from your social network account and vice versa. If you aren't OK with that, use your email address and a unique password to sign in. Keep apps updated. Apps with out-of-date software may be at risk of being

hacked. Protect your device from malware by installing app updates as soon as they're released. Delete apps you don't need. To avoid unnecessary data collection, if you're not using an app, delete it.

ICCS122: MOVIE RECOMMENDATION SYSTEM USING SENTIMENTAL ANALYSIS

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Abstract – In Today's era, Recommendation systems are the most important intelligent systems that play in giving the information to the users. Previously approaches in recommendation systems (RS) include Content-based-filtering and collaborative filtering. Thus, these approaches have certain limitations as like the necessity of the user history as they visit. So as to make back the effect of such dependencies, this research paper provides a hybrid RS are those which mixes both Collaborative filtering, Content based filtering with sentiment analysis of movies. In this research paper, we developed a recommender system based on the sentiment of the user to suggest the movie to the user based on their view history.

ICCS123: ACCIDENT DETECTION AND SMART RESCUE SYSTEM USING ANDROID SMARTPHONE WITH REAL TIME LOCATION TRACKING

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Abstract – A large number of deaths are caused by Traffic accidents worldwide. The global crisis of road safety can be seen by observing the significant number of deaths and injuries that are caused by road traffic accidents. In many situations the family members or emergency services are not informed in time. This results in delayed emergency service response time, which can lead to an individual's death or cause severe injury. The purpose of this work is to reduce the response time of emergency services in situations like traffic accidents or other emergencies such as fire, theft/robberies and medical emergencies. By utilizing onboard sensors of a smartphone to detect vehicular accidents and report it to the nearest emergency responder available and provide real time location tracking for responders and emergency victims, will drastically increase the chances of survival for emergency victims, and also help save emergency services time and resources.

**ICCS116: ENHANCING DATA CONFIDENTIALITY AND ACCESS MECHANISM
FOR E-HEALTHCARE IN CLOUD**

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Abstract – Cloud computing is the well developing internet-based technology, which is used to store and retrieve sensitive data with help of different services such as storage, servers and application. Cryptography is a science of encoding a sensitive message in a way so that only sender and receiver can decode it. Ensuring data security is the biggest challenge in cloud computing. One potential cryptography technique is DNA-based cryptography, which is used to ensure data confidentiality. DNA Cryptography is a new innovative cryptographic field that has been come out into view from the research of DNA computing. Our project work is to propose DNA cryptosystem with combination of attribute-based encryption to ensure user revocation, efficient access control and anonymous authentication. In order to preserve the privacy of the user, the attributes are used to describe a user's credentials. This approach will enhance the security of message with fine grained access control mechanism, which is the main pertaining in today's world for message transmission. The computation complexity is distributed over the proposed framework, instead of putting it on a single authority (e.g., a decentralized key distribution center). The performance result proves that in proposed framework, encrypted data can be kept confidential and secure manner in cloud storage.

**ICCS124: IMAGE CLASSIFICATION IN CONTENT-BASED IMAGE RETRIEVAL
SYSTEMS**

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Abstract – Multimedia content analysis is applied in different real-world computer vision applications, and digital images constitute a major part of multimedia data. In last few years, the complexity of multimedia contents, especially the images, has grown exponentially, and on daily basis, more than millions of images are uploaded at different archives such as Twitter, Facebook, and Instagram. To search for a relevant image from an archive is a challenging research problem for computer vision research community. Most of the search engines retrieve images on the basis of traditional text-based approaches that rely on captions and metadata. In the last two decades, extensive research is reported for content-based image retrieval (CBIR), image classification, and analysis. In CBIR and image classification-based models, high-level image visuals are represented in the form of feature vectors that consists of numerical values. The research shows that there is a significant gap between image feature representation and human visual

understanding. Due to this reason, the research presented in this area is focused to reduce the semantic gap between the image feature representation and human visual understanding. In this paper, we aim to present a comprehensive review of the recent development in the area of CBIR and image representation. We analyzed the main aspects of various image retrieval and image representation models from low-level feature extraction to recent semantic deep-learning approaches. The important concepts and major research studies based on CBIR and image representation are discussed in detail, and future research directions are concluded to inspire further research in this area.

ICCS102: DEFAULTERS MANAGEMENT SYSTEM

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Abstract – The punctuality of the students in visiting the college is an important aspect. So, to maintain the punctuality and to inform the state of the student to the corresponding advisor, we develop an application in Php. This is a web application where the PT Master who reports the irregularity of a particular student in the application. Then the report is generated for the corresponding users about the student. So, this application helps to track the students state in the campus.

ICCSI09: BLUETOOTH NETWORK SECURITY

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Abstract – Bluetooth technology has become an essential part of this modern world where it provides a short distance wireless communication between devices and other networks with low cost and low power making it convenient for the users. Bluetooth is primarily used for establishing wireless communication. It allows the user to form ad hoc networks to transfer data among a wide variety of devices with the speed of 1mbps. Bluetooth is being excessively Communication; Key Generation; Security Threats being used by the people for their daily use. Bluetooth II. technology is becoming widespread; the threats to its productivity, and lower installation costs. Wireless local area security are also increasing which can be very dangerous to network (WLAN) devices, for instance, allow users to move the user's personal information. Various security modes their laptops from place to place within their offices without the should be made use of by the people so as to protect the data need for wires and without losing network connectivity. from the third-party attacks.

ICCSI10: ON-DEMAND ROUTING PROTOCOL WITH QOS SUPPORT FOR URBAN-MANETS

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Abstract – Mobile Ad Hoc Networks (MANETs) are organizations of mobile network devices that ability to selfconfiguring and self-setting parameters for effective innetwork communication. Thanks to the intelligence and flexibility in connections and transferring data, MANETs have demonstrated outstanding capabilities and abilities in a wide range of fields serving humanity, such as healthcare, intelligent transportation systems, smart agriculture, smart retail, and IoT ecosystems. Due to the mobile characteristics of wireless nodes, the structure of MANETs changes frequently. Moreover, the operating principle of MANETs is distributed, not relying on central devices such as base stations, leading to the guarantee QoS problem is one of the main challenges of MANETs. In this study, we proposed a QoS-aware on-demand routing protocol (QoS-ADRP) for urban-MANET applications. To enhance the feasibility of the proposed solution, we establish a mechanism so that the proposed protocol can work on both Adaptive and Admission modes. The experiment results demonstrated that the QoS-ADRP improve the QoS flows, packet delivery ratio, latency, throughput compared to existing protocols.

DEPARTMENT

OF

ELECTRONICS AND COMMUNICATION

ENGINEERING

**ICEC103: CIRCUMAMBIENT QUALITY MONITORING AND ALERTNESS
CREATION SYSTEM**

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Abstract –As the technology advances the level of pollution has been increasing with times by lot of factors like the surge in population, increased vehicle use, industrialization and urbanization which results in harmful effects on human being by directly affecting health of population exposed to it. This work is an approach of monitoring the features accountable for pollution by using ARDUINO UNO hardware. The system containing the additional provisions to control the air pollution and temperature. The setup is designed by C++ coding as its core programming tool. Low-cost gas sensors are used in screening the pollution parameters. Significantly, the total arrangement gathers whole information about air quality, noise and temperature level and send these data to the pollution control officer or owner of the premises through messages in order to take strict counter measure in timely fashion. It will show the air quality, in ppm, noise and temperature readings on the display screen for domestic inspection. The carbon mixed air is absorbed can be controlled by making use of NAOH solution. NAOH upon reacting with CO₂ and then produce the NA₂CO₃ and H₂O as the useful by products. Thus, monitoring and controlling pollutions is simply by inspecting continuously the worth of the surrounding at any Industrial or residential environment using sensors and alerting when there is sufficient quantity of harmful gases like CO₂, smoke, alcohol, benzene, NH₃, noise and temperature upsurge are present in the vicinity. The system finds application in areas where it necessitates to monitor the pollution levels in the surrounding work area or isolated places and minimize the carbon level in the atmosphere.

**ICEC105: QCA DESIGN OF REVERSIBLE COMPARATOR USING MODIFIED C-
NOT GATE**

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Abstract –This paper provides a unique reversible gate implementation based on Quantum Dot Cellular Automata (QCA). Because of its small size (nanometer), ultra-low power consumption, and high clock rate (Terahertz range), QCA has been explored as a FET alternative. Reversible computation, on the other hand, is a new paradigm in which all logic operations are invertible. This property is critical for a variety of technologies, including quantum computing, adiabatic circuits, and low-power computing. QCA has been viewed as a viable technology for approaching the thermodynamic limit of computation due to its low power usage. Comparators are crucial in segregating fault patterns from good ones in industrial automation. The goal of this project is to provide an efficient QCA implementation of the modified C-NOT Gate based on direct interaction between QCA cells. In addition, using the modified C-NOT gate, a reversible 1-bit comparator is also built. QCA designer tool version 2.0.3 has been used to analyze the efficiency of the suggested work. Finally, the energy dissipation results for the proposed area-efficient reversible gate have been computed utilizing the accurate E-QCA power estimator tool.

ICEC106: DESIGN OF APPROXIMATE ADDERS FOR LOW ENERGY APPLICATION USING QCA

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Abstract –Integrated circuits have become much smaller, robust and less expensive revolutionizing the electronics world. Over the decades, CMOS have played a crucial role in the integrated circuits. The exponential scaling and increase in processing speed have been provided by CMOS technology for implementing VLSI systems. The present CMOS technology does not sustain the growth levels expected by the semiconductor industry. Nanotechnology is proposed as a solution to the problem because it overcomes the existing power dissipation and also because of the growing demand for denser and faster integrated circuits. Quantum dot-Cellular Automata technology (QCA) emerges as an effective alternative of CMOS-VLSI. Any digital circuit can be implemented by utilizing the QCA-based majority gates. In this work, a approximate adder implemented with quantum-dot cellular automata (QCA) is proposed. The most basic arithmetic operation is the addition of two binary digits, i.e. bits. In many fields the adder plays an important role but in most of the field the accuracy is not in concern. So, we proposed a novel approximate adder of quantum dot cell automata (QCA). The proposed adder is used to reduce the circuit complexity and time delay with low error rate. The circuit complexity reduction is achieved by reducing the majority gate in the adder circuit. The operation of QCA circuits is simulated and verified using QCA Designer bistable vector simulation.

ICEC107: WIRELESS E-NOTICE BOARD

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Abstract –Notice boards are one of the major communication mediums for mass media. Many Universities and educational institutions still use wooden notice board to display announcements. However, reliance on such boards is still not enough to convey relevant information around the organization. This paper gives a basic idea about Advanced Wireless E-Notice Board. Primary aim of the proposed system is to ensure that information sent from a remote place is displayed on display unit.The goal of this system is to design a low cost and high efficiency wireless electronic notice board. It can also be used in railway station, shopping malls etc., to display the information's. In this project advanced wireless E-notice board is built using Raspberry pi and the information's are displayed by the LED monitor. Raspberry perceives the notice and stores it in its memory and then display the images according to the program. The Raspberry Pi, credit-card sized single board computer can be used for many applications. The notice board is connected with local web server, which can read and extracts required information from university websites and the other source websites. Furthermore, the user can connect to the local server to display messages, images and pdf documents on the LED display. The notice can be modified and altered according to the clients need such as adding the current time, date, weather information and setting and resetting of alarm regularly.

ICEC108: AUTOMATED LIBRARY MANAGEMENT SYSTEM

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Abstract –In this digital world, the most important development in recent year includes replacement of manual systems by online automated web-based management systems. One of such automation in implemented in library management system which find its application in schools, colleges and public libraries. The library plays an important role of any educational institution which is an essential part to improve our knowledge. The traditional library management system needs human assistance whereas we proposed fully “Automated Smart Library Management System” that works on ‘Raspberry pi’ without the human assistance. In this system, the information of book and user with due date is recorded with the help of Fingerprint recognition and QR Code in book. Library automation benefits both the library staff and the users, as it reduces the level of job stress on the staff and enhances remote and timely provision of up to date information to the users. Library Management System is a project, which aims in developing a computerized system to maintain all the daily work of library. This project has many features which are generally not available in normal library management system like facility of user login and a facility of management login. Library Management encompasses normal managerial tasks, as well as intellectual freedom and fundraising responsibilities. Automation of library services and the use of open source software are essential to improve the efficiency and effectiveness of the system, at a minimal cost.

ICEC109: EDGE COMPUTING USING 5G TECHNOLOGY

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Abstract –In earlier days the storage devices have low memory space when the technology is developed the memory device has been developed from floppy disk to edge computing. Cloud computing is a storage device it can buy from a private sector to store a data or a value. They have a hub to store their user’s data. But in sometime lots of user’s access their data there will be traffic. So, the data processing can be delay at a certain time lot of user’s data undergoes to insufficient of storage. To overcome the issue with the next level technology so that is called edge computing. Edge computing means stored a data nearby network using physical device. The central hub distributes the data to a local storage centre to avoid the traffic. So the processing time of the stored data can be too fast but compared to cloud that might not be slow but it will take some time. The real time example is 5g technology. Edge computing will reach the web application in quick manner to reduce the distance between the server and the client. It will be more secured and privacy because it will process the data near by the user. It will less response time and latency

ICEC110: DESIGNING RECTANGULAR PATCH ANTENNA USING CST STUDIO SUITE

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Abstract –The Microstrip patch antenna has become very famous and has attracted much attention towards the research because of its light weight, compact, inexpensive and are capable of maintaining high performance over a wide range of frequencies are prepared. In this paper, the rectangular patch is designed with different parameters like return loss, VSWR, directivity along two directions, radiation pattern in 2-D and 3-D, smith chart, impedance matching are simulated using CST Microwave Studio simulation software. The microstrip patch antenna is designed to increase the bandwidth and return loss. FR-4 with dielectric of 4.3 is used as a substrate for the proposed antenna. The designed rectangular microstrip patch antenna with inset feed technique is very useful for various applications in Industrial, Scientific and Medical sectors which operates at 3GHz range. It shows the return loss of -37.08 dB and 6.652 dBi gain at the resonant frequency of 2.946 GHz. The inset feed and slot improve the impedance matching and return loss of the antenna.

ICEC111: BASED SMART QUALITY WATER MANAGEMENT SYSTEM

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Abstract –water scarcity and water stress issues pose a serious threat to the global population. The traditional way of manual meter reading is furthermore inconvenient and time consuming, and it waste resources. This method is also unable to the sustainable water resources effectively since it requires efficient, accurate and reliable monitoring techniques that enable the utilities sectors and consumer to know the level of water consumption in real-time. Real-time smart water meters that can be monitored by the user are essential and constitute a key component of the water management system. A smart water-monitoring system based on the internet of things will make users mindful of their water consumption and help them to reduce their water usage. At the same time users will be alerted to abnormal water usage to reduce water loss.

ICEC112: SECURE COMMUNICATION FOR UNDERWATER ACOUSTIC SENSOR NETWORKS

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Abstract –In the past five years ad-hoc sensor network have received a good deal of research attention, and one of the popular applications that has emerged is event detection services. This paper looks at acoustic undersea communications and more specifically, event detection in undersea acoustic sensor networks. I first present an overview of acoustic undersea communication and event detection services, and then compare and contrast this with the terrestrial equivalents. The paper also presents a confidence level algorithm used to reduce false alarms, which is one of the main problems that currently exists in detection applications. After words the details and the results are laid out for a simulation that tests effectiveness and accuracy of the confidence level algorithm. The simulator uses both self-generated data as well as real world acoustic sensor data from a navy experiment. Finally, the paper concludes by presenting an analysis of the simulation detailing the strengths and weaknesses of the algorithm and layout plans for future work.

ICEC113: CLASSIFICATION OF FLOWER THROUGH NEURAL NETWORK IN IMAGE PROCESSING

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Abstract –Image processing plays an important role in extracting useful information from images. However, the image processing and the process of translating an image into a statistical distribution of low-level features is not an easy task. These tasks are complicated since the acquired image data often noisy, and target objects are influenced by lighting, intensity or illumination. In the case of flower classification, image processing is a crucial step for computer-aided plant species identification. Flower image classification is based on the low-level features such as colour and texture to define and describe the image content. Colour features are extracted using normalized colour histogram and texture features are extracted using gray-level co-occurrence matrix. In this study, a dataset consists of 180 patterns with 7 attributes for each type of flower has been gathered. The finding from the study reveals that the number of images generated to represent each type of flower influences the classification accuracy. One interesting observation is that duplication of very hard to learn images assist Neural Network to improve its classification accuracy. This is also another area that could lead to better understanding towards the behavior of images when applied to Neural Network classification.

ICEC114: IoT BASED SMART CAR PARKING SYSTEM

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Abstract –In the current era the number of vehicles is increasing day by day. Parking vehicle in metropolitan cities has created havoc indeed that has created a major problem to park their vehicles in designated place which leads to traffic congestion during peak hours. Which leaves the user to search for their parking? This paper resolves the issue of parking system and has come up with IOT (Internet of Things) enabled parking space and allocation mechanism. Smart parking involves use of ultrasonic sensor, Arduino Uno and cloud server. This system will be accessible through an android application to monitor the vacant slots available in parking area. This enables interaction between smart parking system and the user. it proposes to implement the parking system based on reservation. Every user has a unique OTP to occupy their own reserved slot.

ICEC115: A DESIGN OF SMART IOT -BASED COLLEGE ROOM USING ARDUINO

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Abstract –Electrical appliances and local switches can be controlled distantly by utilizing the internet of things communication protocols. Those devices can be accessed and operated through mobile phones. A smart college room is one of the applications in smart campus which worked by means of wi-fi existence for distant observing of electrical devices or switches in the particular room. Hence, this paper describes the project's design and development based on IOT's by implementation of Arduino. The project applies Arduino MEGA 2560 board in conjunction with ATmega2560 chip. The main controller (ATmega2560) is used to connect the board with Wi-Fi module as well as to control DC motor, servo motor and LED in the project. The inputs need to be controlled in the room are lights, fan, sliding door and curtain. Since internet is the sub-core to this project, it helps the project system to acknowledge what user has decided in their mobile phones. For instance, when user wants to turn light in the room, he can simply do it by touching the respective button in the mobile phones. The project is purposely designed for preventing electricity wastage among students which usually happens in colleges. Besides, it promotes accident-free environment while operating the electrical appliances or switches in the room.

ICEC116: Smart College Management System

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Abstract –Designing a smart college management system that connects all basic needs as well as advanced features like attendance system using AI facial recognition technology, posting study materials & discussions through group chats announcement of notices and posting letters to groups or forums providing fees payment gateway along with purchase in store using cryptocurrencies, maintaining and updating student records. This smart system will have local backups and the main database will be maintained on cloud services using an app for many kinds of devices like Windows 10+, Android 9+, iOS 10+ and using embedded IoT devices. This smart system can also have various types of user accounts for admins, staff & students with unique ids.

ICEC117: WIRELESS ATTENDANCE BASED ON IRIS RECOGNITION

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Abstract –The next generation biometric based technology offers a dependable, helpful and authentic way of verifying/identifying an individual's identity, biometric scanners being broadly used where identity of people is required. In most of the Organization, uses a fingerprint of employee to verify the identity of the person clocking in and out. However, during COVID-19 period we avoid using biometric attendance because of touching biometric system is "psychological unease" on account of corona virus scare. Here we are going to bring an untouchable device. Instead of fingerprints verification, Iris recognition verification is one of the most realise personal identification methods in biometrics. The Iris is muscle within the eye that controlling the amount of light that enters the eye. No two people have same eyes. The scanner will scan eyes and automatically log employee/students in. This system possesses the function of iris recognition, verifying, checking on attendance independently. The performance of this system meets the need of daily attendance management in various enterprises and institutions.

ICEC120: AIR POLLUTION MONITORING USING ARDINO

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Abstract –The level of pollution is increasing rapidly due to factors like industries, urbanization, increasing in population, vehicle use which can affect human health. IOT Based Air Pollution Monitoring System is used to monitor the Air Quality over a web server using Internet. It will trigger an alarm when the air quality goes down beyond a certain level, means when there are sufficient amount of harmful gases present in the air like CO₂, smoke, alcohol, benzene, NH₃ and NO_x. It will show the air quality in PPM on the LCD and as well as on webpage so that air

pollution can be monitored very easily. The system uses MQ135 and MQ6 sensor for monitoring Air Quality as it detects most harmful gases and can measure their amount accurately.

**ICEC121: DIGITAL PAYMENT SERVICES - ANALYSIS OF FACTORS
INFLUENCING CONSUMER'S PERCEPTION TOWARDS E-PAYMENT
WITH SPECIAL REFERENCE TO CHENNAI CITY**

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Abstract –A digital payment is otherwise called as an electronic payment. Digital payment is the transfer of value from one payment account to another account using a digital device i.e Mobile Phone, PS, Computer, digital channel communications (Mobile wireless data or SWIFT).It refers to the payments made with bank transfers, mobile money and payment cards including credit card, debit card and prepaid cards. Digital Payments offers significant benefits to individuals, companies, governments or international development organizations.To realize the benefits of digital payments, they must be done responsibly and in ways that protect and promote the well-being of the end user. Responsible Digital Payment Guidelines identifies good practices for engaging with clients who are sending or receiving digital payments. It specifies the challenges of shifting from cash to digital. Digital payments raise security and privacy concerns. These guidelines recommend measures to ensure the confidentiality and security of client data. The reliability of the digital payment system and infrastructure is equally crucial. System might unreasonably prevent users from accessing their funds. Therefore, it is imperative that providers should keep funds safe. In order to provide safety, the robust steps should be taken to ensure network reliability and system capacity. The payment channel secures from fraud, hacking and any other form of unauthorized use. In addition to other factors such as costs and other ongoing fees need to be transparent. It is also important for products and services to be gender intentional, by designing solutions to satisfy the need of women and to ensure that women are not excluded due to lack of digital access or confidence. Finally, the recourse mechanism needs to be clear and be designed with a " client - centric approach in order to raise trust amongst users.

**ICEC122: A STUDY ON CLIMATE CHANGE AND INFECTIOUS DISEASE
TRANSMISSION**

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Abstract –Dengue fever is a viral tropical and subtropical mosquito-borne disease of special concern to public health in the context of a changing climate Climate is an important factor in the temporal and spatial distribution of vector-borne diseases, such as dengue. Thus, rainfall and temperature are considered macro-factors determinants for dengue, since they directly influence the population density of *Aedes aegypti*, which is subject to seasonal fluctuations, mainly due to these variables. This study examined the incidence of dengue fever related to the climate influence by using temperature and rainfall variables data obtained from remote sensing via

artificial satellites in the metropolitan region of India. The goal of this paper to compare four different mathematical model of dengue virus, a serious illness that affect hot and humid area around the world.

ICECI01: Analytical Drain current Modeling of Junctionless Triple Material Gate-all-Around Silicon Nanowire Transistor

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⁴ Post Doctorate Fellow, Department of ECE, Indian Institute of Technology, Roorke, India.

Abstract – A new analytical drain current model is developed for the Junctionless Triple Material Gate-all-around (cylindrical) Nano wire Transistor. The proposed device is built with three gate regions of different work functions which effectively reduce the short channel effects caused by the quantum mechanical effects. The drain current equation is solved for all the three regions of operations to investigate the device switching characteristic, to reduce the SCE such as DIBL, Velocity saturation, Mobility degradation and Tunneling, simultaneously increase carrier transport efficiency. The analytical model is validated by comparing the results with TCAD numerical simulator results and good agreement is achieved.

ICECI02: IMPACT ANALYSIS OF SPLIT RING RESONATOR ANTENNA USING MESH TECHNIQUE

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Abstract – This paper discussed the design and mathematical simulation of split ring resonator for dual band applications at 9 GHz and 12 GHz. The mathematical simulation has been carried out with the help of Computer Simulation Technology (CST) software. The key design was carried out using mathematical calculation. Then the design is implemented and simulated numerically to get the optimized results. Optimized dimension parameters are length and width of the microstrip feed and radius of the ring resonator. According to the optimization, a minimum return loss of -10.2 dB and -19.1 dB have been obtained at the frequencies of 9 GHz and 12 GHz, respectively.

ICECI03: AN IMPROVED BUTTERFLY-NET BASED DETECTION OF STONES IN KIDNEY IMAGE

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PG scholar

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Abstract- Kidney stones are the common complaint worldwide, causing many people to admit to emergency rooms with severe pain. Various imaging techniques are used for the diagnosis of kidney stone disease. Specialists are needed for the interpretation and full diagnosis of these

images. Computer-aided diagnosis systems are the practical approaches that can be used as auxiliary tools to assist the clinicians in their diagnosis. In this study, an automated detection of kidney stone (having stone/not) using ultrasound images is proposed with deep learning (DL) technique which has recently made significant progress in the field of artificial intelligence. This work proposes Butterfly-net, a low-complexity CNN with structured and sparse cross channel connections, together with a Butterfly initialization strategy for kidney stone detection. Combining Butterfly-net with a fully connected neural network, a large class of problems are proved to be well approximated with network complexity depending on the effective frequency bandwidth instead of the input dimension .the proposed model implemented using python programming and compared in terms of accuracy, F score and sensitivity values.

ICECI04: DESIGN OF WEARABLE ANTENNA USING FABRIC SUBSTRATE

*M.Sumitha,
PG scholar*

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Abstract- In field of wearable technology one challenging improvement is wearable textile antenna. Primary requirement for wearable textile antennas are flexible construction materials which includes fabric with planar structure. Properties of the textile antenna such as bandwidth, efficiency, input impedance etc. depend upon type of substrate materials used. These properties are mostly determined by the substrate dielectric constant. Fabric material dielectric constant accurate value is to be calculated from resonant frequency of patch antenna. In this project, we presented high gain new diamond shaped radiator on a wearable textile (jeans) antenna for wireless technologies with parametric analysis. Optimum lengths of dimensions for the antenna is present for best return loss, gain and VSWR, radiation efficiency and free space path loss. The radiating element for patch and ground plane is made from thin-film copper foil.

ICECI05: SECURE DIGITAL VOTING SYSTEM USING BLOCKCHAIN TECHNOLOGY

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Abstract- Electronic voting or e-voting has been used in varying forms since 1970s with fundamental benefits over paper based systems such as increased efficiency and reduced errors. However, there remain challenges to achieve wide spread adoption of such systems especially with respect to improving their resilience against potential faults. Blockchain is a disruptive technology of current era and promises to improve the overall resilience of e-voting systems. This paper presents an effort to leverage benefits of blockchain such as cryptographic foundations and transparency to achieve an effective scheme for evoting. The proposed scheme conforms to the fundamental requirements for e-voting schemes and achieves end-to-end verifiability. The paper presents details of the proposed e-voting scheme along with its

implementation using Multichain platform. The paper presents in-depth evaluation of the scheme which successfully demonstrates its effectiveness to achieve an end-to-end verifiable e-voting scheme.

ICECI06: DEEP LEARNING MODEL FOR FORECASTING CRIME RATE IN INDIA

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Abstract- Because of advancement in technologies like data analytics and criminal sciences, crime forecasting is made possible. Crime forecasting plays a major role in making decisions and planning strategies to reduce the number of crimes. Our main aim is to compare the forecasting models which are time series model-ARIMA (Auto-Regressive Integrated Moving Average) and regression model-Linear Regression. The data we are using for this research has crime count value from 2001- 2013. After the execution, time series models accuracy rate is around 96% and the other is about 60% from which we can conclude that former is better than the latter. In this research, we forecast crime using two different models and compare them to find which might be better. The models are Linear Regression model and ARIMA model. This study proposed crime forecasting using time series models like ARIMA and exponential smoothing, where they proved that time series models are best for crime forecasting.

ICECI07: ANDROID BASED APPLICATION FOR E(VIRTUAL)-RATION SYSTEM

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Abstract - Since our existing process is Bio-metric based systems. People facing trouble for visiting & collecting ration shop. Hence our innovative idea able to overcome the uncertainties like stock corruption, money corruption, time consumption, manual process etc. As solution to this problem, our project proposes a fully digitized model through mobile application to provide high transparency at all the stages of PDS. When the food items are received in the ration warehouse, the data is stored in the cloud. Meanwhile the schedule will be sent as a "Message" with OTP to the beneficiary registered mobile number. Once the beneficiary aware of that message at that time they are able to access our E-Ration App through received OTP. In that page, the eligible material only displayed according to the categorized like AAY, BPL, APL. Based on their needs, beneficiary can choose their required ration items. Based on this entry, total amount will display. We can avail online payment also in our App. Once payment is successful, the beneficiary received message like you paid the amount for the following ration items with weight. With reference of the receive message the beneficiary (anyone) will buy the ration items from ration shop at mentioned date & time. Meanwhile the remaining available stock entries are digitally maintained in the ration warehouse. Based on the stock next schedule will be intimated to the beneficiary.

ICECI08: ANIMAL IDENTIFICATION IN ROADS AND ALERT SYSTEM FOR PASSENGERS

P.Premavathi,

PG Scholar, Pandian Saraswathi Yadav Engineering College, Sivagangai.

Abstract- This paper intends to build an efficient module is identification of animal cross-over in the roads, where animal crossing occurs often. The main objective of paper is to safeguard the human from animal attacks. This idea is based on the raspberry-pi BCM2837 and helps in identifying the presence of animals and offers a warning. PIR sensor is used to sense the animal footprints. In addition to the sensor Digital image processing is used to map the image of animal captured by the camera. LED and Buzzer is used for alerting the animal presence to the passengers on the road.

ICECI09: IOT BASED AUTOMATED HEALTH CARE MONITORING SYSTEM FOR SMART CITY

Makara Jyothi.C,

PG Scholar, Pandian Saraswathi Yadav Engineering College, Sivagangai.

Abstract- In the healthcare sector, the Internet of Things (IoT) has sharpened the world by providing improved patient care, such as Remote Monitoring, Tele Monitoring, and widening the scope of Telemedicine. IoT plays a key role in the medical industry by providing better medical facilities for patients as well as for physicians and hospitals. The proposed system consists of five basic components, namely patient data collection, generation of patient care, Pharmacist patient care and diagnostics. The objective of the proposed system is to provide an excellent patient support even in remote areas, which could be smart enough to analyze the data collected by wearable IoT Sensors and would be able to provide a recommendation for check-up. The proposed system will also create an Interface between the patient the physician and will also improve decision –making skills and ease the traditional flow of the normal healthcare system.

ICECI10: AN EFFECTIVE HALFTONING BASED IMAGE FORGERY AND MORPHING DETECTION

M. Malini,

PG Scholar, Pandian Saraswathi Yadav Engineering College, Sivagangai.

Abstract- Due to progress in computer based communication and health services over the past few years, the want for image security becomes quicker to address the requirements of both safety and non-safety in all application. Method of verifying and self-recovery of tampered work in digital images have been in constant increasing during the past few years. This paper tells about a new LU decomposed half toning method for image authentication and self-recovery for medical application .the proposed scheme locates image tampering as well as extract the original

image. the given image is cracked into 4*4 blocks and LU is used to find out the conversion in the extract image .then produce the authentication watermarks, which are based on XOR Operation on non-overlapping blocks, similarly by half toning technique the extracted water is produced. To appraise the character of the extracted image ,the objective criterion of peak signal to noise ratio(PSNR) and tampering ratio are used .the tentative outputs evidences the effectiveness of our methods in resemblance with other design recounted in the literature, where the quality of the reconstructed images and the extracted rate of each desi.

ICECI11: SMART ASSISTIVE SYSTEM FOR VISUALLY IMPAIRED PEOPLE

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Abstract- Visually impaired people find themselves challenging to go out independently. There are millions of visually impaired people in this world who are always in need of helping hands. In this technological world, where people struggle to live independently, this project proposes an ultrasonic stick for visually impaired people to help them out on their personal independence. Since this is economical and not bulky, one can make use of it easily. This project helps visually challenged people to navigate with ease using advance technology. The blind stick is integrated with ultrasonic sensors, Location Tracker using NEO-6M GPS, application that would give the blind people's location, along with light and water sensing which are controlled by microcontroller. The implementation and the entire setup functions done using the microcontroller.

ICECI12: POWER BATTERY – A PROMISING ENERGY SOLUTION IN NEW IT ERA.

Soundarya.C, PG Scholar

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Abstract - A paper battery is a flexible, ultra-thin energy storage and production device formed by combining carbon nano tubes with a conventional sheet of cellulose-based paper. This paper gives a thorough insight on this relatively revolutionizing and satisfying solution of energy storage through Paper Batteries and provides an in-depth analysis of the same. A paper battery components that are separate in traditional electronics. This combination allows the battery to provide both long-term steady power production as well as bursts of energy. Being Biodegradable, Light-weight and Nontoxic, flexible paper batteries have potential adaptability to power the next generation of electronics, medical devices and hybrid vehicles, allowing for radical new designs and medical technologies. The paper is aimed at core understanding & also in analyzing the properties and characteristics of Paper Batteries; to study its advantages, potential applications, limitations and disadvantages. This paper also aims at highlighting the construction and various methods of production of Paper Battery and look for alternative means of mass- production.

ICECI13: DETECTION OF TUMOR USING CIRCULARLY POLARIZED ANTENNA

P.Kurshidha Begam, PG Scholar

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Abstract - According to the National Cancer Institute there are over 100 types of Cancer. It is the growth of abnormal cells in human body. The purpose of this paper is to design and implement a technique for the early detection of tumor using miniaturized circularly polarized antenna. It also provides an idea about the tumor size and detection. A circularly polarized antenna was fabricated which is simple, low cost and efficient. Tumors as small as 2.5mm and 5mm can also be detected.

ICECI14: BIONIC EYES

R.Evanjalin Nirmala, PG Scholar

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Abstract - Blindness is a devastating disease which can happen due to various reasons such as due to retinitis pigmentosa (RP) and many other age-related macular degenerations (AMD). In this kind of disease, the photoreceptor cells gets degenerated and damages the retina and due to which a person losses his vision power. Therefore, bionic eye plays a vital part by restoring the vision. Technologies that are involved in bionic eyes are-multiple unit artificial retina chip system (MARC), artificial silicon retina system (ASR), ARGUS II, MIT HARVARD device. Holographic technology is used by which a person can again live a new life independently. This method takes place through a small surgery replacing complicated surgeries. The quality of images to the bionic eye will be more clear by increasing the number of electrodes in the retinal implant. Platinum and iridium are currently used for implants but these metals deteriorate within 5 to 10 years. Instead of these metals if diamond device are implanted inside the eye then it will not deteriorate.

ICECI15: TRAFFIC LIGHT CONTROL SYSTEM

R.Maheswari, PG Scholar

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Abstract- Loop detectors provide accurate and reliable traffic light control. Two inductive loop detectors are cut into each lane, just before and just after the stop line. Every passing vehicle is registered. A delay time can be set. Any vehicle that passes after that time is photographed twice in quick succession. The first photo shows the offence, the second confirms that the vehicle was actually moving. The camera is set up so that the red light is also visible in the picture. Loop detection distinguishes between cars and trucks. A separate speed threshold can be installed for each category. The traffic light camera's can also be used to measure speed when the lights are showing green, red or amber.

ICECI16: BLIND NAVIGATION SYSTEM USING RFID FOR INDOOR ENVIRONMENTS

*Karthika J, PG Scholar
Pandian Saraswathi Yadav Engineering College, Sivagangai*

Abstract- A location and tracking system becomes very important to our future world of pervasive computing, where information is all around us. Location is one of the most needed information for emerging and future applications. Since the public use of GPS satellite is allowed, several state-of-the-art devices become part of our life, e.g. a car navigator and a mobile phone with a built-in GPS receiver. However, location information for indoor environments is still very limited. Several techniques are proposed to get location information in buildings such as using a radio signal triangulation, a radio signal (beacon) emitter, or signal fingerprinting. Using Radio Frequency Identification (RFID) tags is a new way of giving location information to users. Due to its passive communication circuit, RFID tags can be embedded almost anywhere without an energy source. The tag stores location information and gives it to any reader that is within a proximity range which can be up to 10–15 meters for UHF RFID systems. We propose an RFID-based system for navigation in a building for blind people or visually impaired. The system relies on the location information on the tag, a user's destination, and a routing server where the shortest route from the user's current location to the destination. The navigation device communicates with the routing server using GPRS networks. We build a prototype based on our design and show some results. We found that there are some delay problems in the devices which are the communication delay due to the cold start cycle of a GPRS modem and the voice delay due to the file transfer delay from a MMC module.

ICECI17: DIGITAL VOTING SYSTEM BASED ON BLOCKCHAIN TECHNOLOGY

*M.Dhivya Bharathi, Assistant Professor
Pandian Saraswathi Yadav Engineering College, Sivagangai*

Abstract - Electronic voting or e-voting has been used in varying forms since 1970s with fundamental benefits over paper based systems such as increased efficiency and reduced errors. However, there remain challenges to achieve wide spread adoption of such systems especially with respect to improving their effort against important faults. Blockchain is a disruptive technology of current era and promises to improve the overall resilience of e-voting systems. This paper presents an effort to leverage benefits of blockchain such as cryptographic foundations and transparency to achieve an effective scheme for e- voting. The proposed scheme confirms to the fundamental requirements for e-voting schemes and achieves end-to-end verifiability. The paper presents details of the proposed e-voting scheme along with its implementation using blockchain platform. The paper presents in-depth evaluation of the scheme which successfully demonstrates its effectiveness to achieve an verifiable e-voting scheme.

**ICECI18: ANALYSIS OF SQUEEZE FILM AIR DAMPING EFFECT IN
SIMULATION OF PERFORATED RF MEMS SWITCHES**

*Thilaga Meena K, Assistant Professor
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Abstract - The objective of this project is to design a Fixed-Fixed membrane of RF MEMS Switch for the analysis of squeeze film damping effect. Fixed- Fixed beam switch is a shunt type MEMS Switch. It is an element which is fixed at both the anchor ends. In this paper, the effect of different geometry on the squeeze film damping of fixed-fixed beam RF MEMS switch is studied. Squeeze film air damping analysis is done for different geometry of membrane on the fixed-fixed beam membrane. Membrane with slits of length 60 μ m was found to be the better choice when compared to other geometry of membrane the surface pressure distribution and damping force on the membrane is simulated for different geometry of membrane. Variation in damping force with respect to the radius of hole and length of square hole was obtained as minimum for lower values of ambient pressure. The variation in damping force with respect to radius of hole and length of square hole is analyzed for different ambient pressures. Modeling and simulation of damping force and surface pressure is done using the software COMSOL Multiphysics.

**ICECI19: AUTOMATIC EXTRACTION OF VIDEO OBJECT USING
HYBRID APPROACH**

*Padmasri P, Assistant Professor
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Abstract - Saliency-based object detection approach has attracted much attention in recent years. However, computational modeling still remains a challenge. This paper aims to automatically detect foreground object of interest from a rapid scene. The proposed method utilizes the saliency information from the input video to detect the object. Once features are extracted, detection is based on skin values and eigenfaces template matching methods. Eigenfaces technique is a more powerful yet simple method to recognize the face. This method is able to produce qualitatively satisfied video object detection result. It is an approach to the detection and identification of human faces is presented, and a working, near-real-time face recognition system which tracks a subject's head and then recognizes the person by comparing characteristics of the face to those of known individuals is described.

ICEC123: REAL TIME AIR POLLUTION MONITORING

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Abstract - The main objective of IoT Pollution Monitoring System is that the Air pollution is a rising issue these days. It is compulsory to monitor air quality and keep it under control for a healthier future and healthy living for all. Internet of things (IoT) is gaining popularity day by day as it can transform life making it easier for human beings. In this paper, various sensors are used to identify air pollutants present in the air, humidity, environment temperature, and atmospheric pressure. Raspberry pi 4 is the board used in interfacing above mentioned sensors. MQ-135 and MQ-X are the air pollution sensor and DHT11 temperature and humidity sensor are interfaced with Raspberry pi 4. As soon as these sensors detects air quality with humidity and temperature the result obtained will automatically get fed in ThingSpeak Cloud. After wards, derived value on IOT can be read. Raspberry pi installation requires a long running process and to run the circuitry a software named NOOBS is required and vnc viewer is needed to access the control. Coding is done python3 IDE as raspberry pi work with python. Installation of Raspbian OS in the fresh flashed SD card is the basic step to give power to raspberry pi. The models have been implemented on ThingSpeak using cloud computing. Sensors used in the presented work have been interfaced to their respective board in order to perform detection of various parameters in real time and obtain detection results simultaneously and using Gsm module interfaced with raspberry pi to send notification when the detected value rises above the threshold value.

ICEC124: SMARTPHONE BASED OBJECT RECOGNITION AND GUIDANCE FOR VISUALLY CHALLENGED PEOPLE

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Abstract - Machine learning algorithms based on convolutional neural networks (CNNs) have recently been explored in a myriad of object detection applications. Nonetheless, many devices with limited computation resources and strict power consumption constraints are not suitable to run such algorithms designed for high-performance computers. Hence, a novel smartphone-based architecture intended for portable and constrained systems is designed and implemented to run CNN-based object recognition in real time and with high efficiency. To find difficulties in detecting obstacles during walking in the street for blind and visually impaired people and aged person. The priority information is provided to the user through audio feedback mechanisms. The object in front of the visually impaired person can be detected using image recognition with AI. ARDUINO controller used for voice processing.

**ICEC125: BLOCKCHAIN BASED SECURE AND ENERGY EFFICIENT
ROUTING PROTOCOL FOR WSN**

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Abstract - Routing is a critical process in **Wireless Sensor Networks (WSNs)** since it is responsible for data transmission to base stations. Routing attack are capable of completely destroying and degrading the function of WSNs. A trustworthy routing system is critical for ensuring routing security and WSN efficiency. Numerous studies have been conducted to increase trust between routing nodes, including cryptographic techniques and centralized routing decisions. Nonetheless, the majority of routing practices are impractical in practice, since it is difficult to identify untrusted activities of routing nodes effectively. Meanwhile, there is no efficient method of preventing malicious node attack. As a result of these issues, this article offers a trusted routing method that combines deep **block chain** and **Markov Decision process (MDPs)** in order to enhance the routing security and efficiency of WSNs. To authenticate the process of transmitting the nodes, the proposed approach utilizes a **proof of Authority (PoA)** method inside the block chain network. The validation group necessary for proofing is selected using a deep learning methodology that focuses on the properties of each node. MDPs are then used to choose the appropriate next hop as a forwarding node capable of transferring messages simply and securely. According to the testing data, our routing system still performs well in **50%** malicious node routing environment when compared to existing routing algorithms.

**ICEC126: AN DEEP LEARNING MODEL FOR BRAIN TUMOR
SEGMENTATION AND CLASSIFICATION**

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Abstract - The Motivation behind this study is to detect brain tumor and provide better treatment for the sufferings. The abnormal growths of cells in the brain are called tumors and cancer is a term used to represent malignant tumors. Usually CT or MRI scans are used for detection of cancer regions in the brain. Positron Emission Tomography, Cerebral Arteriogram, Lumbar Puncture, Molecular testing are also used for brain tumor detection. In this study, MRI scan images are taken to analyse the disease condition. Objectives this research works are i) identify the abnormal image ii) segment tumor region. Density of the tumor can be estimated from the segmented mask and it will help in therapy. Deep learning technique is employed to detect abnormality from MRI images. U Net deep learning is applied to segment the tumor region. Number of malignant pixels gives the density of the affected region.

**ICEC127: TOMATO SORTING BASED ON SIZE, SHAPE AND COLOUR
USING RASPBERRY PI**

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Abstract - In recent years, tomato cultivation has dramatically increased, and the competition in the market is high. The market price is determined through tomato maturity classification. The tomatoes' maturity is generally assessed through a visual inspection of the color, texture, size, shape, and defects. However, the quality of human sorting may be poor, and the cost of external quality control and labor is high. Transfer learning (TL) is an efficient tool involving the reuse of a pre-trained deep network on a new problem involving image classification applications. In this study, we investigated the performance of current TL models: InceptionResnet V2; ResNet152V2; MobileNetV2; and AlexNet on tomato image classification. The experiment results showed that the ResNet152V2 yielded the highest testing accuracy at 99.46%, with the lowest training loss among the comparative TL models.

**ICEC128: SKIN DISEASE DETECTION USING MACHINE LEARNING
TECHNIQUES**

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Abstract - Skin diseases are the fourth most common cause of human illness which results in enormous non-fatal burden in daily life activities. They are caused by chemical, physical and biological factors. Visual assessment in combination with clinical information is the common diagnostic procedure for diseases. However, these procedures are manual, time-consuming, and require experience and excellent visual perception. The system has been designed as a smartphone application and it has the potential to be used as a decision support system in low resource settings, where both the expert dermatologist and the means are limited.

**ICEC129: LEAF DISEASE DETECTION USING DEEP LEARNING AND
IMAGE PROCESSING**

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Abstract - Agriculture is one field which has a high impact on life and economic status of human being. Improper Management leads to loss in agricultural products. Diseases are detrimental to the plant's health which in turn affects its growth. To ensure minimal loss of the cultivated crop, it is crucial to supervise its growth. The existing manual method of detecting plant disease is time consuming to farmers and may sometimes result in incorrect diagnosis as well. Convolutional Neural Network is a class of Deep Learning used majorly for image classification

and other mainstream tasks such as image segmentation and signal processing. In our approach, we use the technique of Convolutional Neural Network using Keras which uses the concept of hidden layers to classify the different diseases that affect the plants. Our model is successfully able to classify the diseases mentioned in the Tomato subsets of the Plant Village dataset with an accuracy rate of 85%.

ICEC137: BLIND PEOPLE NEWS READING ASSISTANCE BY ML/ NEURAL NETWORK CLASSIFICATION

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Abstract - It paves a path to provide the vision to visually impaired by means of Machine learning and neural networks classification. We could train a machine comparatively equal to a human to act, recognize, behave and identify.

ICEC138: RECONFIGURABLE CRYPTOGRAPHIC VLSI CORE FOR THE SELF DUAL GAUSSIAN NORMAL BASES

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Abstract - Communications have grown at a breakneck pace in the modern era. Online applications are one example. Banking, personal digital assistants, mobile communication, smartcards, and other resourceconstrained situations have highlighted the importance of security. Elliptic curve cryptography (ECC) serves as an excellent cryptographic device due to its brief key sizes and safety similar to that of different popular public key algorithms However, to match the ever-increasing requirement for speed in today's applications, hardware acceleration of the cryptographic algorithms is a necessity. As a similarly challenge, the designs ought to be strong towards facet channel attacks FPGAs are reconfigurable hard-ware platforms offering flexibility and lower costs like software program. However, designing on FPGA systems is difficult due to the massive granularity, restricted resources, and massive routing delay. FPGA is the smallest programmable entity in look up .The proposed multiplier combines two variants of reconfigurable, namely the general and the simple GF SPISO multipliers. The GF SPISO multiplier has a large gate count but for small sized multiplications is compact because it utilizes LUT resources efficiently. For large sized multiplications, the simple reconfigurable architecture is efficiently as it requires lesser gates.

**ICEC139: AUTOMATIC FETAL MOVEMENT DETECTION FROM TRIAXIAL
ACCELEROMETRY DATA**

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¹PG Scholar, ²Professor

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Abstract - Foetal movement, which has been investigated using a variety of methods including heart rate monitoring, kick pattern, and other health issues, determines the health and growth of the foetus. Several remote monitoring systems, such as accelerometer-based system in the form of a body worn device or foetal kick detection based, have been introduced as technology advances. In the publication, all of the strategies are covered. A new prototype of a foetal kick detecting gadget is also shown in the paper. Accurate imaging planes must be found by sonologists using a well-defined imaging procedure or clinical standard during regular ultrasound screening of the foetal brain for biometry estimate and detection of foetal anomalies, which can be challenging for non-experts to achieve properly. This examination aids in the precise measurement of biometry and the diagnosis of probable brain problems. The present a machine-learning method for automatically determining if transventricular ultrasound pictures of the foetal brain were collected correctly and fulfil the required clinical regulation. The proposed work based on deep learning strategy that divides the task into three stages: (i) precise foetal brain localization, (ii) detection of areas containing structures of interest, and (iii) learning auditory patterns in the regions to enable planar record. On a large real-world clinical data set of 2-D mid-gestation foetal pictures, are tested to developed technique.

**ICEC140: FPGA IMPLEMENTATION OF CRYPTO-PROCESOR USING BOTH
SECRET AND PUBLIC-KEY ENCAPSULATION**

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Abstract - As a case study, use the Saber module to create a lattice-based post-quantum key encapsulation mechanism (KEM). The architecture is fully built in Java to achieve quick computation times. CCA transformations are included in the hardware. Since polynomials are polynomial, In the module, multiplication is a performance-critical function, and it is optimal. parallel polynomial multiplier, lattice-based public-key cryptography. A new architecture is proposed to solve the problem of memory access bottlenecks. As a result, the architecture is extremely parallel while being simple and easy to scale. These multipliers can perform a whole multiplication in 256 cycles, although they are slow. are created to address any performance/area trade-offs. Besides We make critical design decisions by optimising polynomial multiplication. To decrease the overall cost, make decisions and undertake architectural improvements. Improve resource utilisation and cycle counts. In this paper, we will discuss show a scalable low-area FPGA design and assessment. Hardware architecture that is used as a building block Exponentiation and multiplication are timeconsuming processes in security protocols that utilise

public key encryption, such as key negotiation, authentication and digital signatures. When compared to representative state-of-the-art architectures, the proposed design may process operands of various sizes utilising the same data path, resulting in a significant reduction in area without comprising efficiency.

**ICEC141: NOVEL DEEP LEARNING BASED DISASTER MANAGEMENT FOR
REMOTE SENSING BUILDING DAMAGE CLASSIFICATION**

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Abstract - Underwater seismic sports activities generate acoustic radiation (collectively with acoustic-gravity waves), that includes facts about the deliver and might adventure prolonged distances in advance than dissipating. Effective early warning, emergency response, and facts dissemination for earthquakes and tsunamis require a quick characterization of the fault houses: geometry and dynamics. In this work, we analyzed hydrophone recordings of 201 earthquakes, placed with inside the Pacific and the Indian Ocean, via the use of acoustic signal processing and kind methods. The assessment permits identifying the shape of earthquake (i.e. slip kind, magnitude) and gives near real-time estimation of the effective houses of the fault dynamics and geometry unfortunately, classifying tsunami-added about building damage into notable damage schooling remains a challenge. The purpose of this paper is to provide a totally specific multiclass kind model that considers a high-dimensional function region derived from several sizes of pixel domestic home domestic home domestic home windows and to provide guidance at the manner to define a multiclass kind scheme for detecting tsunami-added about damage. The proposed model uses a Multi splendor help vector machine (M-SVM) to determine the parameters of the discriminant function. The generalization cap potential of the model end up tested on Earthquake and Tsunami.

**ICEC142: A NOVEL APPROACH FOR LINGUISTIC STEGANOGRAPHY
EVALUATION BASED ON ARTIFICIAL NEURAL NETWORKS**

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Abstract - A revolutionary linguistic steganographic model based on adaptive probability distributions and generative adversarial networks that meets the goal of hiding secret messages in generated text while maintaining excellent security. To effectively combat exposure bias, the steganographic generator is first trained using a generative adversarial network, and the candidate pool is then obtained using a probability similarity function at each time step, which alleviates embedding deviation by dynamically maintaining the diversity of probability distribution. Third, an unique technique for information embedding during model training is proposed to further increase security. I create a variety of experiments to test the proposed

model's effectiveness in several areas, such as imperceptibility, statistical distribution, and anti-steganalysis capacity. Previous recurrent neural network-based approaches, on the other hand, Exposure bias and embedding deviations are two flaws in recurrent neural networks that substantially compromise steganography security.

**ICEC143: NOVEL MACHINE LEARNING BASED CLASSIFICATION FOR
PLANT LEAF DISEASE DETECTION**

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Abstract - Fostering and developing plants that are both important in sustaining nature and meeting human needs living beings has become a severe concern with the rapid development in urbanism and population. Plants of economic and environmental significance on a global scale must be protected. With human intervention, finding such species in the forest or shrubs is a time-consuming and expensive task. As a result, this study introduces a new way for segmenting and classifying seven different plants based on their leaf images: Guava, Jamun, Mango, Grapes, Apple, Tomato, and Arjun. In the first step, real-time pictures and images from the crowd AI database are collected and preprocessed for noise reduction, scaling, and contrast improvement. The second phase extracts different properties based on color and texture. The final phase involves employing a k-means algorithm to segment photos. The fourth phase entails Deep Learning and Hybrid Classification training, followed by testing. In comparison to other methodologies, the presented study produces better experimental findings.

**ICEC130: DESIGN AND IMPLEMENTATION OF DISTANCE AND MOBILITY
DETECTION OF OBSTACLES USING A RASPBERRY PI AND SMART
MULTISENSOR FRAMEWORK FOR VISUALLY IMPAIRED PEOPLE**

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Abstract - In the present era, every people wants to be self-reliant even if he is a visually impaired person. Even these people want to be self-reliant in the busy road or a crowded place. This paper offers a system that helps these people. The system includes three Ultrasonic Sonar sensors, three Passive Infrared sensors (PIR sensor), raspberry pi, SD card, vibrator and headphones. All equipment is built into a mobile cane. The PIR sensors allow the proposed system to detect movable obstacles like walking people, vehicles etc around the user in the left, the right and the front. The Ultrasonic Sonar sensors measure the distance and velocity of the movable object from the cane. Then the system notifies the user using vibration and audio message depending on the direction of the coming objects, distance and velocity. The system was experimented with real data for 7 times. The framework has given average accuracy for detecting movable object by PIR sensors is 85.9%, for distance and velocity measurement by

ultrasonic sonar sensors are 91.84% and 85.04% respectively. Its accuracy is better and can be usable in real life.

**ICEC131: DESIGN AND FABRICATION OF SMART HOME WITH INTERNET
OF THINGS ENABLED AUTOMATION SYSTEM**

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Abstract - In today's reality Automatic frameworks are being favoured over manual framework. With the quick increment in the quantity of clients of web over the previous decade has made Internet an integral part of life, and IoT is the most recent and rising web innovation. Web of things is a developing system of ordinary article from modern machine to customer merchandise that can share data and complete assignments while you are occupied with different exercises. Remote Home Automation system(WHAS) utilizing IoT is a framework that uses PCs or cell phones to control fundamental home capacities and components consequently through web from anyplace around the globe, a mechanized home is in some cases called a shrewd home. It is intended to spare the electric force and human vitality. The home robotization framework contrasts from other framework by permitting the client to work the framework from anyplace around the globe through web association.

**ICEC132: SECURE INSTANT MESSAGING SERVICE BASED ON ELLIPTIC
CURVE CRYPTOGRAPHY USING GMS**

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Abstract - Cryptography is defined as the study of cryptosystems by which privacy and authentication of data can be ensured. It is very useful for military and diplomatic purposes. The data's are pressed in keypad and it is encoded using DTMF encoder. This signal is transmitted through antenna using GSM technology. Cryptography is the field which is very unique. A cryptosystem can be a software or a hardware equipment. The software encryption method adopts a finite differential method or in generally mathematical approach towards decipherment (and decipherment). The limitation of this approach is the highest possibility of the algorithm getting exposed when the software is into the wrong hands. Although complex algorithms are generated, need for a maximum protected cryptosystems persists. We propose as a conceptual model, a system, which consist of an add on card which has interfaced with the existing controller, performs encipherment and decipherment of basic information to a form that is unassuagable by an unauthorized interceptor. Our hardware and software is based on the Data Encryption Standard (DES) block Lucifer cipher algorithm consisting of many rounds of encryption enabled by providing a secret key.

**ICEC133: HEART BEAT AND TEMPERATURE IMBALANCE SYSTEM FOR
ACCIDENT RECOVERY SYSTEM USING SMART SENSOR INTERFACE**

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Abstract - The purpose of this project is to develop vehicle accident prevention by method of Temperature detector and pulse detector in an effort to reduce traffic accident cases based on driving under the accidents and health issue. This project is developed by integrated the Temperature sensor, vibrate sensor and also pulse sensor with the microcontroller. These sensors are used to monitor the temperature level and detect high heart rate, accidents. An ignition system which will produce spark plugs is build up as a prototype to act like the ignition starter over the vehicle's engine. This project presents the design and implementation of Temperature and pulse Detection with Engine Locking for cars or bikes using the Ultrasonic Sensor and Arduino UNO as the MCU (Master Control Unit). The system will continuously monitor level of Temperature concentration and the heart rate and also accidents. Thus turn off the engine of vehicle if the concentration is above the threshold level. The model will also send the message of whereabouts of the vehicle through SIM900A. It can be able to sense the live location of the vehicle through GPS. The project provides an efficient solution to control accidents.

**ICEC134: ANTI SMUGGLING SYSTEM FOR TREES IN FOREST USING
EMBEDDED SYSTEM**

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Abstract - Many days we are reading in the newspapers about smuggling of the trees like sandal, "Sagwan" etc. These trees are very costly as well as less available in the world. These are use in the medical sciences as well as cosmetics. Because of huge amount of money involved in selling of such tree woods lots of incidents are happening of cutting of trees and their smuggling. To restrict such smuggling and to save the forests around the globe some preventive measures need to be deployed. We are developing such a system which can be used to restrict this smuggling. Wildlife prevention has become an important practice due to negative effects of human activities such as cutting of trees on large scale and unregulated hunting which causes major threat to wildlife. So, we are going to introduce the project on prevention of trees and wildlife in forest. This article presents the design of a system for detection of vibration for prevention of cutting of trees, detection of temperature for prevention of forest fires also detection of pulses of animal for prevention wildlife using embedded system to prevent a disaster (forest) that could lead to loss of a significant number of natural resources. In this project, the sensing device can sense the vibration, pulse, and temperature, and then sent them over GSM networks to forest office.

**ICEC135: AUTONOMOUS RETRACTION AND DEPLOYMENT OF
LANDING GEAR FOR FIXED WING UAV**

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Abstract - UAV Retractable Landing gear is one of the critical subsystems of an aircraft. The need to design Retractable landing gear with minimum weight, minimum volume, high performance, improved life, and reduced life cycle cost have posed many challenges to landing gear designers and practitioners. Further, it is essential to reduce the UAV landing gear design and development cycle time while meeting all the regulatory and safety requirements. Many technologies have been developed over the years to meet these challenges in design and development of landing gear. This paper presents power electronic technology with embedded system Benefits of a more electric architecture , reduced maintenance costs, Easy operation, perspective of UAV Retractable landing gear design and development, current technology landscape and how these technologies are helping us to meet the challenges involved in the development of landing gear and how they are going to evolve in future.

**ICEC136: DESIGN AND IMPLEMENTATION DEEP LEARNING BASED
APPROACH FOR RAPID SCREENING AND FACE MASK DETECTION FOR
INFECTION SPREAD CONTROL OF COVID-19**

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Abstract - The spread of COVID-19 has been taken on pandemic magnitudes and has already spread over 200 countries in a few months. In this time of emergency of COVID-19, especially when there is still a need to follow the precautions and developed vaccines are not available to all the developing countries in the first phase of vaccine distribution, the virus is spreading rapidly through direct and indirect contacts. The World Health Organization (WHO) provides the standard recommendations on preventing the spread of COVID-19 and the importance of face masks for protection from the virus. In this paper, we introduce an affordable IoT-based solution aiming to increase COVID-19 indoor safety, covering several relevant aspects: 1) contactless temperature sensing 2) mask detection 3) social distancing check. Contactless temperature sensing subsystem relies on controller using infrared sensor or thermal camera, while mask detection and social distancing check are performed by leveraging computer vision techniques on camera-equipped Raspberry Pi.

DEPARTMENT
OF
ELECTRICAL & ELECTRONICS
ENGINEERING

ICEE101: EXTRACTING ENERGY FROM BIOMASS

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Abstract- Extracting energy from biomass is an important alternative to produce different types of energy (heat, electricity, or both) assuring low pollution and better efficiency. The aim of this work is to develop an electronic system using ESP8266 platform connected to a gas sensor, to measure and display the curve of daily methane production on processing. The sensor will send the gas values in ppm to the ESP8266 board so that the later sends the RS232 hardware protocol. The code developed with processing will transform the values into a curve and display it on the computer screen. There are 2 main objectives of this study being carried out; firstly, to determine whether food wastes (canteen and cafeterias wastes) can produce methane gas (biogas) that can generate heat and electricity and secondly to establish how much methane gas (biogas) can be produced with the certain amount of the feedstock. It should be pointed out that this MBPP can generate 600kW electricity per day as this system can generate electricity about 25kW/h. The methane produced per day is approximately 180 cubic meters. The higher the wastes, the higher the amount of methane gas produced. The cow dung is used to increase the bacteria in the tank; the methane gas production will be higher if the bacteria breed.

ICEE102: BUTTON OPERATED GEAR SHIFTER IN TWO-WHEELER USING SERVO MOTOR

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Abstract- The main objective of this paper is used to bring automation in gear shifter of two wheelers using servo motor. This is the new innovative model mainly used for the vehicles to control the vehicle. Here we are concentrating to design the automatic gear changing mechanism, engine temperature sensing and break failure indication in two-wheeler vehicles by using the components like gear box, servo motor, temperature sensor, break failure indicator, potentiometer and buzzer etc. This is very useful and unique method for the gear changing mechanism in two-wheeler vehicles. By using this we can easily control the bike through button which will give instruction to servo motor through programming we going to achieve to control motion i.e. Clockwise or anticlockwise by some specific angle.

**ICEE103: ANALYSIS LIVING THINGS AND NON-LIVING THINGS FALL
DETECTION AND PREVENTION USING WIRELESS NETWORK AND IoT**

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Abstract- Falls represent a major public health risk worldwide for the elderly and covid-19 people and Vehicle. A fall not assisted in time can cause functional impairment in an elder and a significant decrease in his mobility, independence and life quality. In that sense, the present work proposes an innovative GSM-based system for detecting falls of elderly people in indoor Outdoor environments, which takes advantages of low-power wireless sensor networks, smart devices, big data and cloud computing. For this purpose, a 3D-axis Gyro Sensor embedded into a 6LowPAN device wearable is used, which is responsible for collecting data from movements of elderly people in real-time. To provide high efficiency in fall detection, the sensor readings are processed and check the temperature also. If a fall is detected, immediately open the Air bag also. An alert is activated and the system reacts automatically by sending notifications to the groups responsible for the care of the elderly and covid-19 people. From medical perspective, there is a storage service that enables healthcare professional to access to falls data for perform further analysis. The results of experiments have shown high success rates in fall detection in terms of accuracy, precision and gain.

**ICEE104: RESEARCH CHALLENGES, FUTURE SCOPE AND APPLICATIONS OF
INTERNET OF THINGS (IOT)**

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Abstract- With the Internet of Things (IoT) gradually evolving as the subsequent phase of the evolution of the internet, it becomes crucial to recognize the various potential domains for application of IoT and the research challenges that are associated with these applications. IoT's future scope appears to be bright and varied. Ranging from smart cities, to health care, smart agriculture, logistics and retail, to event smart living and smart environments IoT is expected to infiltrate into virtually all aspects of daily life. Even though the current IoT enabling technologies have greatly improved in the recent years, there are still numerous problems that require attention. Since the IoT concept ensures from heterogeneous technologies, many research challenges are bound to arise. The fact that IoT is so expansive and affects practically all areas of our lives, makes it a significant research topic for studies in various related fields such as information technology and computer science. Thus, IoT is paving the way for new dimensions of research to be carried out. This paper presents the recent development of IoT technologies and discusses future scope and applications and research challenges.

ICEE106: A FULLY PORTABLE ROBOT SYSTEM FOR DISPENSING SANITIZER IN HOSPITALS

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Abstract- Sanitization means cleaning or sterilizing an object or body part like hands or whole body. Sanitization methods use alcohol and it was found to be more useful for human beings since it is harmless on skin surface. It vaporizes easily and kills most of the viruses, bacteria and also removes dirt in our hands, Alcohol may be expensive for mass scale sanitization for buildings or rooms and a major disadvantage is that, alcohol is highly inflammable and requires careful storage to avoid catastrophe. The system undergoes the line following concept. It uses the pre-constructed track where the input to the controller is given using infrared sensor. The sensor follows the track and splash the sanitizer using the motor control unit. The pump motor can't be used directly. Hence a relay drives with the time interval directly through controller. The pump unit consists of two tubes where it uses the diaphragm concept to suck sanitizer from one end and dispense through second end. During the successive time intervals, the robot will splash the dispenser. It automatically travels around entire room where the track is pre-constructed. Once the dispensing process is done the robot moves to the next tracked room programmed earlier. In order to avoid covid-19 issues, the autonomous robot plays a vital role to prevent pathogen spreading and finally hygiene is most important and must be part of our daily life.

ICEE107: RECENT TRENDS IN ELECTRICAL DRIVES

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Abstract- In this paper investigates about recent trends in electric drives and focusing on AC driven machines. Here different survey analyzed to discuss control techniques for drives. The main focus of the paper is on control techniques which are being applied to make AC drives a rapidly growing area. Development of the control is discussed concentrating on recent trends suitable for practical applications in industry with good dynamic behavior. The major types of electrical machine are briefly summarized to set context and to establish the physical basis for the control techniques used. Machine properties are the key to successful control and can be obscured by the necessary mathematics required for machine analysis and control scheme derivations. It covers the important historical developments before concentrating on recent research advances, particularly contrasting traditional sensor-based schemes with sensor less methods Use of AC electrical machines in controlled electrical drive applications is reviewed. A particular feature is the increasing importance of speed or position sensor less techniques.

ICEE108: PIEZOELECTRIC TRAY

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Abstract- The idea of capturing the energy surrounding an electronic system and converting it into usable electrical energy that could extend the lifetime of the power supply or provide an endless supply of energy has captivated many researchers and brought much attention to power harvesting. One method of obtaining the energy surrounding a system is to use piezoelectric materials. Piezoelectric materials have the unique ability to interchange electrical and mechanical energy. This property allows them to be used to absorb the mechanical energy around a system, usually ambient vibration, and transform it into electrical energy that can be used to power other devices. However, the amount of energy generated by piezoelectric materials is far smaller than that needed by most electronic devices. Therefore, methods of accumulating and storing the energy generated until sufficient power is captured must be developed. This paper quantifies the amount of power generated by a piezoelectric plate and investigates two methods of accumulating the energy produced. The first uses a capacitor, which has been a common method of accumulating the energy produced and the second method is the use of nickel metal hydride batteries. The advantages of each method are discussed and the rechargeable battery is found to have more desirable qualities than the capacitor. It is shown that the power output of piezoelectric materials is compatible with that needed by a rechargeable battery and that a 40mAh battery can be charged in slightly under one hour. Finally, electrical energy stored in battery is converted into heat energy.

ICEE109: ENERGY HARVESTING FROM LIGHTNING

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Abstract- Energy crisis is a major problem now-a-day. With the exponential growth of population and technology, the necessity of much more energy requirement becomes a serious issue. Therefore, the need for alternative sources of energy comes to the field. Nature offers us a lot of alternatives and among them, one such feasible choice underused by mankind is the power of a thunderstorm. This paper proposes the strategy of harvesting the new source of renewable energy from a thunderstorm. Energy Harvesting from Lightning describe about the method for harvesting the new source of renewable energy from lightning stroke. The restriction in harvesting the gratis lightning energy is regarding the process to detain. Then store the energy within a microsecond according to the typical lightning wave shape. It can be possible through the rectifier circuit and capacitor bank connected with the lightning arrestor. The harvested energy is given to the battery or to the load.

**ICEE113: A NOVEL HIGH VOLTAGE GAIN NON-COUPLED
INDUCTOR SEPIC CONVERTER**

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Abstract- In this paper, a novel non-coupled inductor high voltage gain SEPIC converter is presented. The proposed converter has various advantages such as lower voltage stress on the switches, non-inverting output voltage, high efficiency, and high voltage gain. Also, the introduced converter has a continuous input current which makes it suitable for renewable energy and fuel cell applications. Moreover, high voltage gain is accomplished without using any transformer and coupled inductor, thus there is not any voltage overshoot for the switches during the turn-off process. This effect allows low conduction losses by using lower voltage rating switches and also additional clamping circuit is not needed. The control system of the presented converter is simple and the converter can be easily controlled in CCM mode operation. Because, the gating pulses for both of the switches are the same and wide output voltage range is achieved only by changing the duty cycle. Furthermore, the number of the components compared to the other non-coupled inductor SEPIC-based converters which provide near voltage gain to the proposed converter is reduced. The detailed operation of the introduced converter and design considerations are discussed. Experimental results are presented to verify the performance of the proposed DC-DC converter.

**ICEE114: BIO INSPIRED OPTIMIZATION BASED APPROACH FOR PV MODULES
UNDER PARTIAL SHADING CONDITIONS**

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Abstract- To extract as much energy as possible from photovoltaic (PV) modules, the energy utilization needs to be improved, as well as power conversion efficiency of converters. Partial shading on a PV string comprising of multiple modules/sub strings is known as a serious cause that significantly decreases energy utilization. Differential power processing (DPP) converters and voltage equalizers are alternative powerful solutions to partial shading issues. Compared to conventional equalizer, these types of single switch topology has minimum size circuits and extract maximum power also. Thus, an intelligent control based multi stage voltage equalizer is proposed to improve the control performance in PV system to eliminate partial shading problems. Here one single switch is used for voltage equalizing purpose then it applied to multi stacked SEPIC converter to avoid partial shading problems to get maximum energy from panels. Here, Fuzzy logic algorithms are simulated using MATLAB fuzzy logic toolbox. In this work, the fuzzy logic-based control circuit is developed to give equal power in all panels. The equalization efficiency is higher than 98% equalization as compared with the conventional

analog control algorithm. Here, Fuzzy logic based multi stack voltage equalizer is simulated using MATLAB/SIMULINK software.

ICEE115: OPTIMIZED SCADA SYSTEMS FOR ELECTRICAL SUBSTATIONS

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Abstract- A current SCADA arrangement (hardware and software) with specific characteristics for electrical substations is presented. This system leverages the newest technologies available and shows the correct way to implement them in order to have a precise and fault secure power grid. The technologies included in the system are: network time synchronization, network communication redundancy through different types of ring topologies, specific SCADA software for electrical substation. At the end there is a proof of concept through which the practical way of implementing these 3 technologies together is highlighted.

ICEE116: POWER SAVING SYSTEM OF AN ELECTRIC VEHICLES USING MICROCONTROLLER

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Abstract- This paper presents an approach in which the range of electric vehicles influences not only the design of the vehicle but also driving style and operational factors. The power saving system act as an backup system in an electric vehicle if the battery power reaches below a minimum level. Atmega 328p microcontroller can control the electronic control units in the car. It will help the user to cover maximum possible distance with the remaining battery power.

ICEE117: HOME AUTOMATION USING ARDUINO UNO AND BLUETOOTH MODULE

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Abstract- This paper presents that a novel technology which is advancing and so the houses are also getting smart by using Arduino or smart phone. The objective of this project to develop a modern house with the help of an Arduino board using Bluetooth being remotely controlled. With the help of this system we can control our Home appliances from our mobile phone. By touching the specified location on the GUI, we can turn on/off our home appliances within the range of Bluetooth. The loads are operated by Arduino board through opto isolators and thyristor using triacs.

**ICEEI01: A TOTAL-CROSS-TIED-BASED DYNAMIC PHOTOVOLTAIC ARRAY
RECONFIGURATION FOR WATER PUMPING SYSTEM**

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Abstract- Most Photo-voltaic (PV) applications require a shadow-free area for the installation of the PV panels. However, shading is inevitable in a few applications like building-integrated PV pumping systems (BIPVPS). Partial shading occurs due to soiling, clouds, shades of nearby trees, buildings, current, and telephone poles. During this partial shading condition, the PV array output power decreases, reducing the efficiency of the BIPVPS. In this paper, a novel dynamic array reconfiguration technique is proposed to enhance the power output from the PV array. The proposed system uses a boost converter with an incremental conductance algorithm for operating enhanced power at the maximum. Sinusoidal Pulse Width Modulation (SPWM) technique based on V/f control operates the induction motor. Thus, the proposed algorithm and maximum power point technique (MPPT) enhance the power output from the PV array and track the global power. The PI and V /f control regulate the dc-link voltage and speed of the Induction motor. Simulations and experimental studies are performed to show the effectiveness of the proposed algorithm. The proposed system results in additional 234 W PV power extraction compared to the conventional system. Thus, making the proposed BIPVPS efficient.

**ICEEI02: REDUCING FAULT CURRENT AND IMPROVING THE REAL AND
REACTIVE POWER FLOW BY USING FACTS DEVICE**

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Abstract- The transmission and distribution networks, however, cannot fulfil unbound demands due to the scarcity of resources. Implementing a flexible AC transmission system (FACTS) is one of the best ways to reduce line losses, is paper proposes a FACTS-based method for minimizing the fault current in the system. Switchgear and protection equipment also perform better when this is done. Moreover, due to the reduced fault current of the switched system, a larger amount of power can be transmitted. Static synchronous series compensator (SSSC), static synchronous compensator (STATCOM), and unified power flow controller (UPFC) are evaluated in this case. With STATCOM and UPFC, fault currents are significantly reduced. Furthermore, STATCOM and UPFC can also reduce the fault currents in the power system in addition to voltage regulation and power flow control. A MATLAB/Simulink model is used to evaluate the model's feasibility.

ICEEI03: CURRENT REFERENCE CONTROL BASED MPPT AND INVESTIGATION OF POWER MANAGEMENT ALGORITHM FOR GRID-TIED SOLAR PV-BATTERY SYSTEM

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Abstract- To achieve unity power factor operation, harmonic mitigation, faster dc-link voltage regulation, and smooth transfer of modes of operation, this work aims to propose an adaptive control scheme for a photovoltaic (PV) grid-tied power conversion system. The grid-tied PV system consists of a battery storage unit interfaced with the dc link using a bidirectional converter and dc link is connected to the ac bus using a voltage source converter. Apart from the mentioned control objectives, maximum power extraction from the PV systems and effective power management for seamless operation are also challenging. The shortcoming of the conventional maximum power point tracking technique to track global power under varying environmental conditions is addressed by developing a simple and efficient current reference control technique, which enables faster tracking of the global maximum power. Furthermore, a suitable power management algorithm is formulated to generate reference currents for all the power converters in the proposed system, considering various system dynamics. The viability of the control scheme for the PV-battery-based grid-tied system is validated through extensive real-time investigation under dynamic.

ICEEI04: GRID CONNECTED WIND TURBINE GENERATOR WITH REAL AND REACTIVE POWER FLOW CONTROL

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Abstract- This paper proposes the use of power electronic converters to extract power from variable speed wind turbines and feed it into the grid. A permanent magnet synchronous generator is coupled to the wind turbine due to its better performance of higher efficiency, less maintenance and it can be used without a gearbox, which implies a reduction of the weight of the nacelle and reduction of costs. The pitch angle of the wind turbine is varied according to the varying wind speeds for the maximum power extraction using voltage controlled MPPT technique. An uncontrolled diode bridge rectifier converter the ac voltage from the generator to dc and is fed to a smooth control of the Boost dc-dc converter. The output of the boost converter is fed to a three-phase inverter. An enhanced dynamic behavior is achieved using a feedback control with grid current and grid voltage samples resulting in a desired real and reactive power using PI controllers. The performances of the above operations are explained by simulation results using MATLAB/SIMULINK.

**ICEEI05: ENERGY ECONOMY OF HOUSEHOLDS WITH PHOTOVOLTAIC
SYSTEM AND BATTERY STORAGE UNDER TIME OF USE TARIFF WITH DEMAND
CHARGE**

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Abstract- Power utilities are introducing cost-reflective tariffs, such as a time of use tariff to incentivize electricity use during off-peak periods, some of which include a demand charge during peak periods. The uptake of such tariffs depends on their economic benefits compared to other tariffs. The impact of such emerging tariffs on the household energy economy has not been widely investigated in the South Australian context. This research analyses the energy cost of grid-connected homes with photovoltaic (PV) systems under a time of use tariff with demand charge, recently introduced in South Australia. First, an optimization problem is formulated to minimize the annual household energy cost under a time of use tariff with demand charge, which is also applicable to other tariffs. Then, four types of South Australian PV-installed households are analyzed with various battery energy management strategies and tariffs. The results show that a time of use tariff with demand charge can deliver savings in household annual energy cost, which can be further increased using the most appropriate energy management strategy for each tariff. Another key finding is that with battery storage, the time of use tariff with demand charge can reduce the peak load on the distribution feeder by 35% compared to the ordinary time of use tariffs.

**ICEEI06: A NOVEL BIDIRECTIONAL ELECTRIC-DRIVE-RECONSTRUCTED
ONBOARD ANN CONTROLLED CONVERTER FOR ELECTRIC VEHICLES**

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Abstract- In this work, an Electric-drive-reconstructed onboard converter (EDROC) is presented. This vehicle is implemented with the highly advanced machine learning technique namely Artificial Neural Network (ANN) and PI controller network. This system is used the previous components presented in electric vehicle (EV) and it would not require any additional hardware. This system can be easily implemented in all the office, home and restaurant environments. This EDROC has two modes namely charging and driving mode. The charging is set the power factor unit and the driving mode is used to drive the motor. Even though it is highly flexible for the implementation, it is less in cost and volume than the previous EV.

ICEEI07: ARDUINO BASED MULTISTABLE SINGLE PHASE BIDIRECTIONAL AC-DC CONVERTER WITH IMPROVED EFFICIENCY

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Abstract-Arduino based multi stable single-phase bidirectional ac-dc converter working unload the concept that performing controlling conversion rate through an Arduino based control unit. This control unit will switch the MOSFET in the bidirectional converter between a simultaneous interval which can be altered depends on the grid load requirements by the users. However, there are some other previous methodologies are present, they have fixed hardware to perform the conversion factor and they cannot be frequently changed. This will cause unexceptional bugs during the increment of connected load. To make the bidirectional converters for such conditions, we need to change the whole hardware and it will be more expensive one. We have provide a new methodology that Arduino based single phase bidirectional ac-dc converter which uses an Arduino controller to control the conversion rate of the bidirectional converter through switching by the programmed speed which can be accessed and modifying by the user.

ICEEI08: MULTI-FUNCTIONAL PV INVERTER WITH LOW VOLTAGE RIDE-THROUGH AND CONSTANT POWER OUTPUT

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Abstract-Renewable photovoltaic (PV) energy is a primary contributor to sustainable power generation in microgrids. However, PV grid-tied generators remain functional as long as the grid voltage and the input PV source remain normal. Abnormal conditions like transient grid sags or solar irradiation flickering can make the grid-tied inverter go offline. Simultaneous shut down of PV generators residing in the distribution grid may lead to an overall grid instability or outage. Therefore, PV generators must be equipped with fault-ride-through mechanisms in order to remain connected and operational during faults. This paper presents a PV-inverter with low-voltage-ride-through (LVRT) and low-irradiation (LR) compensation to avoid grid flickers. The single-phase inverter rides through the voltage sags while injecting reactive power into the grid. The proposed control strategy ensures a steady DC-link voltage and remains connected to the grid during AC-side low voltage and DC-side low-irradiation faults. Unlike other PV inverters, the controller maintains the maximum-power-point-tracking (MPPT) in all conditions. LVRT, constant power output, and robust MPPT are the noticeable features of the proposed system. Frequency analysis, simulations, and a laboratory prototype validate the proposed control strategy.

ICEEI09: MULTI-PORT DC-AC CONVERTER WITH DIFFERENTIAL POWER PROCESSING DC-DC CONVERTER AND FLEXIBLE POWER CONTROL FOR BATTERY ESS INTEGRATED PV SYSTEMS

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Abstract-Due to the unpredictable and fluctuating nature of solar photovoltaic (PV), energy storage systems (ESS), such as batteries, are always integrated with PV systems to smooth the power supply. In this paper, a multi-port dc-ac converter (MPC) with differential power processing dc-dc converter (DPPC) is proposed for battery ESS integrated PV systems. The MPC is capable of regulating most of active power among PV, battery and ac grid, and only the differential power (partial power) needs to be handled by the dc-dc converter. Hence, the major merits of higher integration, higher efficiency, and lower cost can be achieved by the proposed configuration. A new cooperative control scheme for the MPC and DPPC is investigated, aiming at realizing flexible active power flow. Besides, a modified space vector pulse-width modulation (SVPWM) is developed for the MPC, taking into the consideration of the voltage variation of both PV and battery. The active power controllability of the MPC and the power rating of the DPPC are quantitatively analyzed. The effectiveness of the proposed configuration, control and modulation schemes is validated by experimental results.

ICEE118: PLANNING AND OPTIMIZING ELECTRIC-VEHICLE CHARGING INFRASTRUCTURE THROUGH SYSTEM DYNAMICS

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Abstract- One of the key solutions to address the issue of energy efficiency and sustainable mobility is to integrate plug-in electric vehicle (EV) infrastructure and photovoltaic (PV) systems. The research proposes a comprehensive EV infrastructure planning and analysis tool (EVI-PAT) with solar power generation for micro-scale projects for the deployment of EV Charging Stations (EVCS). For the evaluation of the proposed infrastructure, a case study of Qatar University (QU) campus is chosen for the integration of the EV charging infrastructure and PV power generation to evaluate the performance of the presented framework. The model estimates the EV adoption and the number of vehicles based on the inputs related to the country's EV adoption, campus vehicle count, and driving behavior. Economic and environmental indicators are used for evaluating policy choices. The findings in the paper show that the proposed planning framework can find the optimum staging plan for EV and PV infrastructure based on the policy choices. The staging plan optimizes the sizes and times of installing EVCSs combined with solar PV keeping the EV-PV project at maximum economic and environmental targets. The optimum policy can affect the optimum power infrastructure limit to maximize the economic benefit by the solar tariff.

ICEE119: THE NEED FOR RENEWABLE ENERGY SOURCES

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Abstract- An ever-growing population means an ever-growing requirement for energy. Nowadays, enormity of energy cannot be denied. It is essential in every walk of life. Energy sources can be broadly classified as renewable and non-renewable. Knowing the dreadful fact that nonrenewable sources will eventually deplete, the importance of renewable sources cannot be underestimated. The most important aspect while utilizing them is their impact on the environment. This paper briefly presents the importance of renewable sources of energy owing to the backdrop of fossil fuel dilemma. Major emphasis is placed on the use of alternative energy technologies. Some applications of renewable sources and future of energy is also discussed.

ICEE120: ENHANCEMENT OF POWER QUALITY IN A GRID CONNECTED SOLAR SYSTEM

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Abstract- Non-conventional energy sources like the Solar and wind energy are the primary energy sources opted nowadays. In a few PV based framework the inverter is a key segment which is responsible for the control of the power stream between the DC sources and loads. In the proposed work, solar energy is integrated with an AC grid to improve the power quality of the system. The Shunt Active Power Filter is a compensator used to eliminate the disturbances in current. The Shunt Active Power Filter is used to compensate reactive power and suppress characteristic harmonics drawn from a particular current pulsed power supply which is a nonlinear load in nature. The proposed Shunt Active Power Filter (SAPF) with PI controller enhancing the power quality improvement in a grid connected solar system.

ICEE121: EFFECTIVE CONTROLLER DESIGN FOR SUPER LIFT LUO CONVERTER IN DC MICRO GRID APPLICATION

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Abstract- This paper studies on development of effective controllers or dual loop controller for Negative Output Super Lift Luo Converters (NOESLLC) for DC microgrid application that are attractive owing to the inclusion of renewable energy sources. In consequence of the small output voltage of these DC sources, super lift Luo Converters is essential to connect as a DC source in DC microgrid. Traditional boost converter, buck converters, SEPIC and buck-boost converters have produced less voltage transfer gain and more ripples. With the aim of overcome these crisis's, NOESLLC is proposed for DC micro grid application. The load voltage and inductor current of the NOESLLC is regulated using effective controller loops. It consists of PI controller

and Proportional Double Integral (PDI) controller are acting as outer voltage loop for load voltage regulation and P controller acting as inner current loop for regulating the coil current of it. The dual loop controller for NOESLLC is verified by emerging the Matrix Laboratory (MATLAB)/Simulation Link (Simulink) model at different operating conditions.

ICEE110: FPGA BASED PWM GENERATION FOR CAPACITOR BASED WIRELESS CHARGING IN ELECTRIC VEHICLE: LITERATURE REVIEW

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Abstract- The paper proposes the substantial emission pollution from vehicles is seriously rising as global warming. The batteries and corresponding charging systems used in these. In particular, BEVs play a key role in their efficiency and price. Charging technologies available for EV(Electric Vehicle)s: Wired and Wireless. Beyond Wired charging technologies and wireless charging technologies, recently attracting substantial attention due to their advantages. Capacitive wireless systems do not create eddy-current loss when kept close to metal objects; low system weight and cost; it has better misalignment performance. The challenge of high-power CPT(Capacitive Power Transfer) system will be investigated in different topologies. Because of advanced technology, the Field Programmable gate array(FPGA), microcontrollers, and digital signal processors with the flexible design , easiness for system integration, and cost reduction. Digital control is more appropriate for applications. in power converters operating at high frequency .An Investigation is done for increasing efficiency in CPT.

DEPARTMENT

OF

MECHANICAL ENGINEERING

**ICME101: EFFECT OF HEAT AND CRYOGENIC TREATMENT ON MACRO AND
MICROSTRUCTURE EVALUATION ON AISI 4340 AXLE STEEL**

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¹PG Scholar, KIT & KIM TECHNICAL CAMPUS

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Abstract – An automobile is composed of various material components which are produced by utilizing a wide variety of technologies and which satisfy customer needs and environmental norms. Heat treatment and surface modification are the key technologies available today, to enhance the effective use of materials, to achieve the desired properties of the components used in the automotive industries, to save energy and conserve natural resources. Interest has been shown in cryogenic treatments over the last seven decades mainly due to the transformation of retained austenite and the precipitation of fine carbides. By changing the microstructure, cryogenic treatment can improve wear resistance and hardness to some extent. In this experimental work, the effect of shallow and deep cryo-treating and tempering on macro evolution in AISI4340 axle steel will be investigated with traditional heat treated (oil hardening) of AISI4340 steel. Traditional and cryo treated mechanical and optical properties will be compared with un-treated steel of AISI4340 and concluded how much properties could be varied through this work.

**ICME102: EXPERIMENTAL INVESTIGATION AND OPTIMIZATION OF
PROCESS PARAMETER THROUGH HIGH SPEED HARD TURNING PROCESS ON
C-45 STEEL**

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Abstract – Tool wear is a major problem encountered in manufacturing industry during machining operations. A substantial work on online tool wear monitoring system has been reported in order to improve the quality of machining parts, to reduce the machine damage, and cost of machining. The use of high strength and heat resistant materials is increasing day by day in aerospace, automotive, steam turbines and nuclear applications. The hard-turning process is steadily finding its place in modern manufacturing technology and with advance cutting tool materials it can be applied as alternative machining process to grinding providing a more economical way to finish hard surfaces. The main concerns of hard turning are tooling cost and the effect of process on machinability characteristics. The poor selection of process parameters may cause excessive tool wear and increased surface roughness. Hence there is a need to find the right parameters to achieve the right dimensional accuracy, good surface and maximum material

removal rate. This paper presents an experimental investigation of finish hard turning under dry conditions using coated carbide tools. In this experimental the combination of Taguchi method along with analysis of various parameters when high speed CNC hard turning of C-45 steel alloy has to be considered.

ICME103: ANALYSIS OF THERMAL BEHAVIOUR ON NATURAL FIBER POLYMER COMPOSITES

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Abstract – Natural fibers or natural fibers are fibers that are produced by geological processes, or from the bodies of plants or animals. They can be used as a component of composite materials, where the orientation of fibers impacts the properties. Natural fibers can also be matted into sheets to make paper or felt. Natural fibers are good sweat absorbents and can be found in a variety of textures. A polymer is any of a class of natural or synthetic substances composed of very large molecules, called macromolecules, which are multiples of simpler chemical units called monomers. Polymers make up many of the materials in living organisms and are the basis of many minerals and man-made materials. There is a growing interest in the development of new materials which enhance optimal utilization of natural resources, and particularly, of renewable resources. Natural fibers such as jute, coir and sisal belong to this category. This paper describes systematic work carried out so far on the structure-property relationship of these fibers including fracture modes. Attempts to incorporate them in polymers and characterization of these new composites, with and without subjecting them to environmental conditions, are reported. Problems arising out of processing of the composites and attempts made to minimize these problems are also described. Efforts to fabricate a few components and evaluation of their performance in actual use are presented. Suggestions for future work are also given.

ICME104: COMPARATIVE DRILLING CHARACTERISTICS AND GEOMETRICAL EVALUATION OF HSS AND PVD COATED (AlTiN) ON SS202

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Abstract – The metal cutting is very essential to try for high metal removing rate and the best product quality. The major problem in achieving high productivity and best quality is short life span of a tool. The methodology of Modified Taguchi optimization method for simultaneous minimization and maximization of Surface roughness (Ra), machining time and material removal rate of Oil Hardened Non-Shrinking steel affect the aesthetical aspect of the final product and

hence it is essential to select the best combination values of the CNC Milling process parameters to minimize as well as maximize the responses. The experiments to be carried out by a VMC, using physical vapour deposition HSS coated and DUARANA (AlTiN) coated drilling tool bit for the machining of SS202. The experiments to be carried out as per L9 orthogonal array with each experiment performed under different conditions of such as speed, feed and various pecking. The Taguchi method and analysis of variance (ANOVA) to be employed by using MINITAB-17 software to identify the level of importance of the machining parameters on Surface roughness (Ra), Machining time and various geometrical accuracy.

ICME105: DESIGN AND FABRICATION OF MANUALLY OPERATED BOULEVARD CLEANING MACHINE

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Abstract – This paper is associated with design and advancement of paramount machine that is perfunctory functioned, dust accumulator operated by Mechanical aid. The Dust Collector is utilized to keep the globe clean, so as to sense peaceful and fresh air while walking on boulevards. For the most part, in time of current innovation, various tools such as electric engines, diesel motors and robots are being utilized to clean floor and roads etc. These techniques make a lot of contamination, maintenance and exceptionally extreme to complete. The fundamental motive of this paper is to share this thought of prototype to everyone. Consequently, the current work is to design and develop a manually operated boulevard cleaning machine which is ecofriendly, cost effective, versatile and less maintenance. 'Mechanically functioned dust collector' model is monetarily reasonable and beneficially supportive. This machine works on the principle of centrifugal force of the cylindrical brush tossing dust particles from street surface into the container, and is modest concerning different machines and is proficient too. This can be utilized in the side area of boulevard where residue has been stacked up in maximal quantity. A detailed mathematical calculation and analysis for design specification of each and every part of the machine components is made and prototype fabricated with the aid of solid works. Finally, manually operated boulevard cleaning machine is fabricated using conventional fabrication tools and performance test calculation is done.

**ICME106: EXPERIMENTAL PERFORMANCE ANALYSIS OF SINGLE CYLINDER
FOUR STROKE PETROL ENGINE USING GASOLINE AND LPG**

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Abstract – In this project the main aim is to comparison of performance by using petrol and LPG at no load and different load condition. Work was done in Thermal Engineering Lab of Mechanical Engineering Department. The fuel consumption was minimum 2250 rpm in case of both fuel at no load and fuel consumption is minimum at 50% of the load in case of the both fuels at loading condition. The experiment shows that LPG gives maximum Brake Thermal Efficiency (BTE) at 50% of load and 31.32% less Fuel Consumption (FC) than petrol at load. Low Brake specific Fuel Consumption (BSFC) than petrol different loading was also lower than the petrol and found minimum at 50% of the load and at no load condition, consumption of LPG is comparatively lower than the consumption of petrol. For this experiment minor modification done to run the engine by LPG without any problem using some necessary attachments like attachment for LPG tank, conversion KIT, tubes, etc. This project presents the comparative performance testing results of four stroke petrol engine operating on petrol and LPG. This comparative performance analysis shows that LPG is one of the better substitutes of petrol. For lower speeds LPG suitable for vehicle and gasoline is suitable for the higher speed operations. So, these combinations of fuel supply will be suitable for city traffic conditions, where mostly the mode of operation is low speed. Using this concept LPG is one of the better substitutes of petrol in terms of performance, consumption and cost.

**ICME107: STRUCTURAL AND THERMAL ANALYSIS OF STEAM TURBINE USING
ANSYS**

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Abstract – In the present work the first stage rotor blade of a two-stage Steam turbine has been analyzed for structural, thermal using analysis which is a powerful Finite Element Software. In the process of getting the static and thermal stresses, the fatigue life in the rotor blade has been improved using this software. The first stage rotor blade of the Steam turbine has been analyzed for the static and thermal stresses resulting from the tangential, axial and centrifugal forces. The Steam forces namely tangential, axial was determined by constructing velocity triangles at inlet and exist of rotor blades. The rotor blade was then analyzed for the temperature distribution. For obtaining temperature distribution, the convective heat transfer coefficients on the blade surface exposed to the Steam have to feed to the software. After containing the temperature distribution,

the rotor blade was then analyzed for the combined mechanical and thermal stresses and also the fatigue life. Steam turbine is an important functional part of many applications. Reducing the stresses and increasing the fatigue life is the major concern since they are in high temperature environment. Various techniques have been proposed for the increase of fatigue life and one such technique is to have axial holes along the blade span. Finite element analysis is used to analyze thermal and structural performance due to the loading condition, with material properties of structural steel. Three different models with different size of holes (2, 3, and 4mm) were analyzed to find out the optimum number of holes for good performance. Graphs are plotted for stresses for existing design (7 holes) and for fatigue sensitivity against size of the holes (2, 3, and 4 mm). It is found that when the number of holes of the blades is increased, the stresses are reduced, and number of cycles is increased. Thus, the blade configuration with 7 holes of 2mm size is found to be optimum solution.

ICME108: AEROGEL BASED THERMAL BARRIER COATING

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Abstract – Work focuses on one of the most studied aerogel materials, silica aerogels. It aims at presenting a brief overview of the elaboration steps (sol–gel synthesis, aging, and drying), the textural and chemical characteristics (aggregation features, porosity, and surface chemistry), the main physical properties (from thermal, mechanical, acoustical, and optical, to biological, medical, etc.), and a rather broad panel of related potential applications of these fascinating nanostructured materials. It cannot be considered as an exhaustive synopsis but must be used as a simple tool to initiate further bibliographic studies on silica aerogels.

ICME109: FABRICATION AND THERMAL ENERGY TRANSFER IMPROVEMENTS IN AUTOMOBILE WHEELS & TYRES

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Abstract – A wheel is a circular component that is intended to rotate on an axle bearing. The wheel is one of the key components of the wheel and axle which is one of the six simple machines. Common examples are found in transport applications. A wheel greatly reduces friction by facilitating motion by rolling together with the use of axles. In order for wheels to rotate, a moment needs to be applied to the wheel about its axis, either by way of gravity or by the application of another external force or torque. Using the wheel, Sumerians invented a

contraption that spins clay as a potter shapes it into the desired object. A tire (American English) or tyre (British English) is a ring-shaped component that surrounds a wheel's rim to transfer a vehicle's load from the axle through the wheel to the ground and to provide traction on the surface over which the wheel travels. Most tires, such as those for automobiles and bicycles, are pneumatically inflated structures, which also provide a flexible cushion that absorbs shock as the tire rolls over rough features on the surface. The materials of modern pneumatic tires are synthetic rubber, natural rubber, fabric and wire, along with carbon black and other chemical compounds. They consist of a tread and a body. The tread provides traction while the body provides containment for a quantity of compressed air. Before rubber was developed, the first versions of tires were simply bands of metal fitted around wooden wheels to prevent wear and tear. Early rubber tires were solid (not pneumatic). Wheel and Tyre strength and life depends on many factors like Temperature, grip, road surface, flexing due to weight etc.,. The aim is to fabricate and modify the components of tyres, make changes in treadpattern, and add additives to the filling gas to improve the thermal efficiency of tyre during the conduction, convection and radiation effects while cruising on various land surfaces.

ICME110: PERFORMANCE ANALYSIS AND EMISSION CONTROL TEST ON HIGH PRESSURE STEAM BOILER USING BIOMASS BRIQUETTES

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Abstract – Today, renewable energy source of power generation has become very promising. As we know that conventional or non-renewable source of energies are very limited and are depleting very rapidly. Increasing energy needs of the world and continually growing population there is a power demand gap and it needs alternate sources of energy. So, there is a view to generate more and more power from renewable sources of energy. There are various forms of renewable energy sources. Biomass is one of the important sources of renewable energy. India has huge volume of potential for renewable energy sources. In India about 500 million metric tons of biomass energy is produced every year. According to International Energy Agency (IEA), Renewable energy could meet almost half of the global energy demand by 2050. Biomass Briquettes is the one of the biomass sources which will be used at Industrial boiler to generation of steam also Emission from the Boilers stack may affect the ambient air quality. The situation aggravates when stack air contains high percentage of impurities like sulfur, hydrocarbon, etc. NO_x is a leading cause of air pollution in big cities with large volumes of vehicular traffic. It works as an oxidation medium and reacts with volatile organic compounds (VOCs) to create smog, which affects the ozone layer, especially when temperatures are hot. NO_x also contributes to the creation of acid rain. The high temperature of stack air also impacts the air quality in terms

of thermal pollution. The combustion of conventional type fuel like firewood for steam generation inevitably results in emission of gaseous pollutants to the atmosphere. Each of these pollutants is examined below to ensure the emission limit and the same parameters will be recorded after changing the fuel like biomass briquettes.

ICME111: DESIGN AND THERMAL PERFORMANCE ANALYSIS OF DISC BRAKE ROTOR

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Abstract – The following work studies a conceptual design and Thermal Performance & Analyse of a solid Disc brake Rotor. Disc brakes offer higher performance braking, simpler design, lighter weight, and better resistance to water interference than drum brakes. The aim of this conceptual design was to increase the strength, heat dissipation and thermal performance of the solid Disc brake Rotor, without increasing the weight of the Rotor by a large amount and reducing the thermal deformation at high operating temperatures. The heat dissipation and thermal performance of solid Disc brake Rotor strongly depends on the air flow through the rotor passages. In this thesis, the thermal convection and heat dissipation are determined. Then a numerical model for rotors is generated and Analysis is conducted to determine the desired parameters. To analyze more realistic Disc brake Rotor models, commercial Analysis software packages, Ansys and Hypermesh, are used to Analyse the Temperature distributions, temperature contours, and pressure distributions inside the rotors.

ICME112: CHARACTERIZATION AND INVESTIGATION OF LIFESPAN OF V-BELT

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Abstract – Power transmission belting has been used for more than 200 years. The first belts were flat and ran on flat pulleys. Later cotton or hemp rope was used with v-grooved pulleys to reduce belt tension. This led to development of vulcanized rubber V-belt in 1917. The need to eliminate speed variation led to development of synchronous or toothed belt about 1950 and later development of fabric reinforced elastomer material. V-belts are commonly used in industrial application to transmit the power one end to another end. V-belts have 75% of belt contact with grooved pulley. Due to the contact more friction is created to transmit the power effectively at

the same time heat is also produced. Now a day's EPDM rubber, polyester, and hard clothes are used to manufacture the V-belt. In this project comparison between mechanical properties of EPDM rubber and FKM rubber have to be done.

ICME113: PERFORMANCE ANALYSIS OF WASTE RUBBER COMPOSITE BRICKS

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Abstract – With the growth and development on all fronts in our country roads. This has in turned resulted in a huge demand for the material in construction and the raw materials from which these are obtained or made. Thus putting an increasing pressure on the natural environment around us. Also the proposal of residual waste. Domestic as wen as industrial has become a major concern and a challenge for the authorities and care-takers. Ironically in spite of speech of each one of us being the source and victim of this problem. Very few among us ventured their time knowledge and expertise into addressing this issue and arriving at universal solutions. Some of these initiators have laid an example of large quantities and varieties of wastes and industrial by-products have a potential for use in the construction industry. One such material which has tremendous potential for recycle and reuse in construction related activities is rubber. Appropriate recycling of rubber waste can help in resolving a challenging environment economic and social problems. This project is an attempt at documenting a prevalent applications of rubber waste and also bringing forth various innovative and path breaking products and solutions.

ICME114: ADVANCED FIBER REINFORCED POLYMER (FRP) COMPOSITES FOR MECHANICAL ENGINEERING APPLICATION

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Abstract – Polymers and their composites are one of the most advanced and adaptable engineering materials. The strength of any composite depends upon number of factors such as volume/weight fraction of reinforcement, L/D ratio of fibers, types of fibers, orientation angles, chemical treatment of reinforcement, and many others. The present work focuses on the analysis of mechanical properties (tensile, flexural, and impact) of synthetic and natural fiber (glass/jute)-reinforced polyester composites. An attempt is made to reduce the usage of synthetic glass fibers by incorporating natural jute fibers such that the resultant hybrid composite shows increased strength when compared with single reinforcements of glass or jute fibers. The test specimens were prepared and tested according to ASTM standards.

**ICME115: EXPERIMENTAL INVESTIGATIONS OF EXHAUST EMISSIONS
ANALYSIS OF SINGLE CYLINDER FOUR STROKE PETROL ENGINE USING
GASOLINE AND LPG**

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Abstract – In this project the main aim is to evaluate the exhaust emission by running the conventional engine on Liquefied Petroleum Gas (LPG) as an alternative fuel for four-stroke spark ignition engine. In our project, we have installed LPG fuel system to four stroke vehicle where in we can use both gasoline and LPG. The alternations made to install LPG in the vehicle are discussed. Liquid petroleum gas (LPG) has lower carbon content, higher calorific value, octane number and flame propagation speed will improve the emission results compared to gasoline fuel. The engine used in the study is originally a single cylinder; four-stroke spark ignition engine with certain modifications is to make to permit the experiments to run on LPG fuel. Work was done in Thermal Engineering Lab of Mechanical Engineering Department. For this experiment minor modification done to run the engine by LPG without any problem using some necessary attachments like attachment for LPG tank, conversion KIT, tubes, etc., Exhausts analyzer is to be inserted into the engine exhaust tailpipe for measuring the exhaust emissions are measured by the latest technology exhaust analyzers are: HC, CO, CO₂ and O₂. This comparative Investigation of Exhaust Emission Analysis shows that LPG is one of the better substitutes than petrol. For lower speeds LPG suitable for vehicle and gasoline is suitable for the higher speed operations. So, these combinations of fuel supply will be suitable for city traffic conditions, where mostly the mode of operation is low speed. Using this concept we can control our expenditure in buying of fuels.

**ICME116: HARVESTING ENERGY FROM DRAINAGE WATER USING WATER
WHEEL**

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Abstract – Since time immemorial, the main source of energy has been oil, natural gas, nuclear energy, wood and coal. However, all these sources are limited and are the main cause of pollution and this has led to development and more focus on sustainable energy supply with minimum pollution effects. Hence research and analysis has shown that wind energy, solar energy and biomass are the most prominent solutions to the above problems because they are

eco-friendly and readily available in nature. A water wheel is a simple turbine device with buckets, paddles or blades, that is rotated by moving water, it converts kinetic energy of water into mechanical movement. Then the mechanical movement is converted into electricity by use of dynamo. From the electricity we can use in our home. The main objective of our project is to design a water wheel free energy device using drainage water. There are three types of waterwheel. They are horizontal water wheel, undershot vertical waterwheel and overshot vertical water wheel. In our project, we use undershot vertical water type wheel. It has 16 blades and its type is flat prior type. An undershoot wheel is a vertically mounted water wheel with a horizontal axle that is rotated by the water from a low weir striking the wheel in the bottom quarter. Most of the energy is gain from the movement of the water and comparatively little from the head. The parts are dynamo, pipe, water tank, water wheel, battery, light.

ICME117: STATIC AND MODAL ANALYSIS OF GRAVITY ROLLER CONVEYOR

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Abstract – The purpose of this project is to investigate the static and modal analysis of the ravity roller conveyor resulting from the different material using finite element analysis. This analysis suggests the best material for the gravity roller conveyor to minimise the stress and deflection produced in the conveyor. The finished materials are transported from one station to another station using conveyor. The gravity roller conveyor uses only the gravitational force for the transportation of material. The roller of the gravity roller conveyor is considered for optimisation, because it occupies the major part of the conveyor. The reduction in weight greatly helps to save the material since the member of the roller used in the conveyor depends on the length of transportation of the material. The modal analysis of the conveyor is carried out to observe the natural frequency of the system.

ICME118: PERFORMANCE ANALYSIS OFDOVER BODY

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Abstract – Grains are developed in little scale by ranchers in creating nations like India. Grain is sold by ranchers without deseeding. The normal bit cost is around double the cost of the cob.

Subsequently, more wage can be created by agriculturists if corns are decorticated and bits are sold without anyone else's input in the market. However, this requires a modest, physically worked and proficient corn deseeding. Absence of corn preparing machines i.e. corn deseeding, is a noteworthy issue of grain creation, particularly in our nation. An investigation outlined, created, and execution of corn deseeding comprises of feed by physically with control stream rate, sifting unit, isolating unit, and hand lever framework. The execution of the machine was assessed as far as limit, deseeding effectiveness, material productivity and mechanical harm. Entertainment models that could be utilized to express the relationship existing between the deseeding execution files, dampness substance and feed rate were set up.

ICME119: DESIGN AND FABRICATION OF AGV FOR SERVING FOOD IN FOOD INDUSTRY

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Abstract – In today's scenario in terms of the hotels and restaurants, the food industry is rapidly increasing to cope up with food demand of cities. As a consequence, no of workers in food industry also increases. As number of hotels and restaurants increases it is hard to find workers (especially waiter) who works for low salary and existing waiters also forced to work for more hours. To help waiters to reduce their work load automation is needed in food industry. Our aim is to automate the food service part of food industry, which will help the workers to be focused and give them healthy working environment. It can be done with the help of serving machine which will be specifically designed to work on existing hotels and restaurants. This machine will be a line follower with sensors include ultrasonic (for vision), speech module (for communication), IR transmitter / Receiver (for finding path). This machine will enhances both productivity and efficiency of overall food industry. Here we use ultrasonic sensor in front and back to see and avoid obstacles or people who are in the way of the machine path. Speech module will communicate with people in places like after reaching target table "Food has been delivered", if a person is on the way "Please move out".

ICMEI02: DETERMINATION OF INFILTRATION CHARACTERISTICS OF SOIL USING DOUBLE RING INFLTROMETER

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Abstract- Infiltration is the process of penetration of water into the ground surface and the intensity of this process is known as infiltration rate. The infiltration rate is expressed in terms of

volume of water poured per ground surface per unit of time. Soil erosion, surface runoff and ground water recharge are affected by this process. At a certain moment the maximum infiltration rate can be indicated by the infiltration capacity of soil. Infiltration of water into the soil can be determined by a simple instrument called Double ring infiltrometer. The cylindrical ring infiltrometer consist of single metal cylinder. These cylinders are partially inserted into the ground and water is filled up to a margin inside the cylinder and after that the speed of penetration of water is measured with respect to the time and depth of penetration of water inside the cylinder. Two types of cylinders are taken for this experiment of diameter 30cm, 60cm and they are experimented as 30-60cm double ring infiltrometer. Double ring infiltrometer is better than single ring infiltrometer. In single ring infiltrometer the water will spread horizontally and vertically both, from which water will not move only towards the ground water but using double ring infiltrometer the water will penetrate in one direction that is towards the ground water without much wastage of water.

ICMEI03: FINITE ELEMENT ANALYSIS OF DISC BRAKE

R.Nagaraj

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Abstract- Brakes being major component in automobiles requires at most attention and advances for road safety. When brakes are applied heat is generated. This heat has to be dissipated very fast to maintain a constant temperature of the brake disc. Maintaining a constant temperature minimizing the thermal fatigue of the brake disc material. Against this background, thermal analysis of various areas and materials of disc brakes is carried out using commercial Ansys Finite volume based CFD Solver the domain is a brake disc of all-terrain vehicle with Four materials namely Grey cast Iron, Aluminum Alloy , Structural Steel And Polyethylene. In addition, the surfaces of the disc were also modified of each disc material by creating various shape hole such as circular, elliptical, oblique-circular, oblique-elliptical, and vanes vents on the surface of disc.

ICMEI04: DESIGN AND ANALYSIS OF TRIPLE U TUBE HEAT EXCHANGER

Gowri Sankar S

PG Scholar, Pandian Saraswathi Yadav Engineering College, Sivagangai

Abstract- The heat exchanger consist 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.

**ICMEI05: REDUCTION OF COLD START EMISSION IN SI ENGINE USING
ZEOLITE CHAMBER**

Mari

PG Scholar, Pandian Saraswathi Yadav Engineering College, Sivagangai

Abstract- A significant amount of effort has been extended over the past 30 years to treat automobile exhaust. For automobiles equipped with modern three-way-catalyst, the emissions occur during the so-called “cold-start period”, and these emission must be reduced to meet new regulations and improve the Environment. The Cold start period refers to the first few minutes after Engine ignition before the catalyst reaches its “Light-off-temperature” (from 250°-300°C). The three-way catalyst systems for gasoline Engines do not activate under Engine cold start conditions since exhaust gas temperature is low. Zeolite based emission adsorber substrate stores high concentration emissions emitted immediately after Engine start and oxidizes when emission is released as the Exhaust gas temperature rises.

ICMEI06: DESIGN AND FABRICATION OF BRAKE FAILURE INDICATION

Kani Manickam

PG Scholar, Pandian Saraswathi Yadav Engineering College, Sivagangai

Abstract- The aim is to design and develop a control system based electronically controlled automatic brake failure indicator. The braking system of two wheeler is undoubtedly one of its more important feature. The aim is this work is to create a better braking system with indicator.

ICMEI07: DESIGN OF TENDER COCONUT CUTTING MACHINE

Komala Devi.K

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Abstract- Portable agro machine rics play a vital role in major farms today life. The necessary of machineries is to reduce the human effort and to save time. The easiest way of opening tender coconut is proposed. The selected concept mainly consists of punching by a lever and torsion spring mechanism. This research work includes the study of problems that were faced during the cutting of coconut. By studying such problem the need of efficient coconut cutting machine was developed. The purpose of this research is to develop, test, and evaluate the young coconut cutting machine. The application of screw jack for the development of this machine reduces the cost of fabrication. By using such type of machine anyone can easily punch a hole and cut the coconut. The initial design is used to get optimal of hydraulic punching and shearing machine for tender coconut. The present innovative work is helpful for hawker, which reduce the mental fatigue and decrease the operation time for extracting

coconut water on large extent. We promote our machine for street hawkers to reduce his effort for punching and cutting of coconut. The punching tool has a locking device to hold the tender coconut. And the remaining two rod are moving upward during shearing operation. The fixed base plate has is then ready to place the coconut for shearing operation and for holding purpose.

**ICMEI08: IMPROVEMENT OF COOLING TOWER PERFORMACE WITH DESIANT
AIR FILTERATION PROCESS**

Lingaraj

PG Scholar, Pandian Saraswathi Yadav Engineering College, Sivagangai

Abstract- The cooling tower performance is majorly rely on ambience air temperature and working medium water temperature. In winter performance of cooling tower is less as air moisture is more and makes it to absorb less vapor from water and summer, performance of cooling tower is better efficiency which results in better performance. In order to improve performance of cooling tower in winter , desiccant air filtration method can be adopted to absorb moisture in air and to develop the cooling tower overall performance throughout the year .The better the cooling tower performance, will result in energy efficiency of electric drives as well.

**ICMEI09: STRESS ANALYSIS ON SPUR GEAR USING DIFFERENT
MATERIALS BY ANSYS**

Rasathi S

PG Scholar, Pandian Saraswathi Yadav Engineering College, Sivagangai

Abstract- Gears are machine elements used to transmit motion and power between rotating shafts by means of progressive engagements of projections. Gears have wide variety of applications. Their application varies from watches to very large mechanical units like the lifting devices and automotive. Engineering components made of composite materials find increasing applications ranging from space craft to small instruments. It is possible that gears will predominate as the most effective means of transmitting power in future machines due to their high degree of reliability and compactness. The main objective of the present work is to investigate Finite Element Analysis of the spur gear pair for different material in ANSYS software. In this paper A review has been taken for case-I purpose is to design the spur gear and study the weight reduction and stress distribution for cast steel and composite materials and results are observed. And in case-II Static analysis is performed to determine the deformation and Von-mises stresses. Analysis is done by considering different materials for gears like Structural Steel, Gray Cast Iron, Aluminum Alloy and Epoxy E Glass UD, and results are compared.

**ICMEI10: THERMAL ANALYSIS SHEET METAL DURING ULTRASONIC
WELDING**

Karantha Malai Murugan

PG Scholar, Pandian Saraswathi Yadav Engineering College, Sivagangai

Abstract- In this project design and analysis of sheet metal during ultrasonic welding is carried out. The model of the sheet metal is designed using the software called pro E, and the systematic analysis of the designed model is done using ANSYS software. The model selected is sheet metal. Here we are analyzing the sheet metal by using super alloy nickel 201. Then the model is analyzed for the temperature distribution, total heat flux and directional heat flux in thermal analysis and deformation and stress distribution in structural analysis which is done by using ansys workbench.

**ICMEI11: STEADY STATE THERMAL & STRUCTURAL ANALYSIS OF GAS
TURBINE BLADE USING FEA**

X.Mariya Prakash

PG Scholar, Pandian Saraswathi Yadav Engineering College, Sivagangai

Abstract- Cooling of gas turbine blades is a major consideration because they are subjected to high temperature working conditions. Several methods have been suggested for the cooling of blades and one such technique is to have radial holes to pass high velocity cooling air along the blade span. The forced convection heat transfer from the blade to the cooling air will reduce the temperature of the blade to allowable limits. Finite element analysis is used in the present work to examine steady state thermal & structural performance for Inconel718 and Titanium T6. Four different models consisting of solid blade and blades with varying number of holes (6, 9 & 12 holes) were analysed in this Project to find out the optimum number of cooling holes. The analysis is carried out using ANSYS CFD software package.

ICMEI12: DESIGN AND ANALYSIS OF SHOCK ABSORBER USING ANSYS

D.Gopala Krishnan

PG Scholar, Pandian Saraswathi Yadav Engineering College, Sivagangai

Abstract- The shock absorbers duty is to absorb or dissipate energy. In a vehicle, it reduces the effect of traveling over rough ground, leading to improved ride quality, and increase in comfort due to substantially reduced amplitude of disturbances. When a vehicle is traveling on a level road and the wheels strike a bump, the spring is compressed quickly. The compressed spring will attempt to return to its normal loaded length and, in so doing, will rebound past its normal height, causing the body to be lifted. The weight of the vehicle will then push the spring down below its normal loaded height. This in turn causes the spring to rebound again. This bouncing process is repeated over and over, a little less each time, until the up and down movement finally stops. If bouncing is allowed to go uncontrolled, it will not only cause an uncomfortable ride but will

make handling of the vehicle very difficult. The design of spring in suspension system is very important.

ICMEI13: DEVELOPMENT OF DUAL-AXIS SOLAR TRACKING USING ARDUINO WITH LAB VIEW

Kali doss

PG Scholar, Pandian Saraswathi Yadav Engineering College, Sivagangai

Abstract- As the energy demand and the environmental problems increase, the natural energy sources have become very important as an alternative to the conventional energy sources. The renewable energy sector is fast gaining ground as a new growth area for numerous countries with the vast potential it presents environmentally and economically. Solar energy plays an important role as a primary source of energy, especially for rural area. This paper aims at the development of process to track the sun and attain maximum efficiency using Arduino uno and LabVIEW for real time monitoring. The project is divided into two stages, which are hardware and software development. In hardware development, four light dependent resistors (LDR) have been used for capturing maximum light source. Two DC motors have been used to move the solar panel at maximum light source location sensing by LDR. The GUI is constructed by using LabVIEW. The performance of the system has been tested and compared with static solar panel. This paper describes the design of a low cost, solar tracking system.

ICMEI14: CONSTRUCTION SAFETY MANAGEMENT

S.Vigneswaran

PG Scholar, Pandian Saraswathi Yadav Engineering College, Sivagangai

Abstract- The aim of this research is to identify and evaluate the safety management in construction projects to minimize and control health and safety (H&S) of construction workers and procedures effectively. Questionnaire is used to collect a wide range of opinions from experienced professionals working in different construction sites for comparison between them. The reviews of the related literature are the first step in obtaining information from previously related studies. The literature reviews provide a theoretical background about safety management that guided the design of the questionnaire. This research concludes that the construction industry has a high number of fatalities and long-term injuries. This is unacceptable in a modern society and it also makes the industry inefficient, with days lost due to injuries. This research shows that the high rates of accidents are due to several common factors, such as poor construction planning, lack of safety in design, inadequate safety training, and worker behavior, inherent safety H&S risk of construction and lack of knowledge of site rules.

**ICME120: DESIGN AND IMPLEMENTATION OF PATIENT ASSISTING
MULTIPURPOSE WHEEL CHAIR**

Dharanidharan V¹, Dharshini K², Dharshini R³, Dhelipkumar S⁴, Dr.D.Pritima⁵

,1,2,3,4 UG. Scholars, Mechanical Engineering,

⁴Professor, Fatima Micheal College of Engineering and Technology

Sri Krishna College of Engineering and Technology, Coimbatore

Abstract – An intelligent power chair motor drive supported Node MCU is projected within this paper. This system is developing for making certain safety visit deformed or older individuals. By victimization on 2 inaudible, the system will avoid collisions, as well as stationary and operating hindrance. They will be walking individuals and operating vehicles, as all of them to source severe damage to individuals in wheelchair. The ability base contain steering wheels of the chair. For management the chair by the user is employed a regular control stick. The acceleration of the wheelchair is directly proportional to the displacement of the management unit, and therefore the chair movement constant direction because the control stick is inform, additionally proportional management permits taking possession any direction inside the radius of 360°. The directive from the control stick is being send to the Node MCU once process the controller send directive within the type of digital signal to the motor driving computer circuit because it guides the motility of chair. The used brushed DC motor parameters area unit 24VDC, 250W that area unit severally controlled by the control stick. The system can decide associate degree applicable action and show the knowledge on the programme.

**ICME121: SYNTHESIS OF REDUCED GRAPHENE OXIDE(RGO) FROM COCONUT
SHELLS USING MECHANICAL EXFOLIATION METHOD TOWARDS DYE
SENSITIZED SOLAR CELL(DSSC) APPLICATION**

M.Buvaniha¹, M.Kartheeswaran², Dr.K.Vijayakumar³

,1,2, UG. Scholars, Mechanical Engineering,

³Professor, Sree sowdambika college of engineering

Abstract – This current work effectively synthesised reduced graphene oxide (rGO) based on coconut shell waste using a mechanical exfoliation .Coconut shells was undergone carbonization process and the resultant can be converted into graphene oxide followed by rGO using high energy ball milling .The ball milling process introduces defects and removes oxygen functional groups, producing the purify form of rGO. The prepared rGO sample was confirmed by physiochemical characteristics of X-ray diffraction analysis(XRD), Raman Spectroscopy, Ultra Violet(UV)-Visible Spectroscopy, Fourier transform infrared spectroscopy. To evaluate morphology Scanning Electron Microscope(SEM) and Transmission Electron Microscope (TEM) has been introduced and confirms the structure of rGO. The prepared rGO sample was used for Dye-Sensitised Solar cell application in a counter electrode part.

**ICME122: DEVELOPMENT AND INVESTIGATION OF MECHANICAL
PROPERTIES ON HYBRID COMPOSITES**

S.Ashok kumar¹, C.Santhosh kumar², Mr.U.Raj kumar³

^{1,2} UG. Scholars, Mechanical Engineering,

³ Assistant Professor, Sree sowdambika college of engineering

Abstract – The aim of present study is to investigate and compare the mechanical properties of sisal fiber and glass fiber reinforced polyester composites. To improve the mechanical properties, sisal fiber was hybridized with glass fiber with addition of CaCO₃ and Charcoal. The sisal and glass fiber were prepared with 15%, 25%, weight ratios and then incorporated into the polyester matrix by hand layup moulding technique to form composites. The tensile, flexural tests were carried out using hybrid composites samples. This study shows that addition of sisal fiber in glass fiber/polyester composites weight results in increasing the mechanical properties.

ICME123: ENERGY ANALYSIS AND EVOLUTIONARY OF STEAM POWER PLANT

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Abstract – The objective of this project is to blow down the salt deposition on the fire tube boiler line and to control the scale deposition on the inner layers of the boiler. so we have planned to provide to indicate water parameter (PPM) level by using a blowdown controller valve before the inlet to avoid the scale formation on the surface area by using the TDS sensor (total dissolved solids). To control the scale formation and to increase the boiler efficiency as well as its lifetime and to avoid breakdown maintenance period water treatment has to be done before it fed into the boiler to avoid corrosion, scale formation, priming, foaming, salt deposition on the inner layer of the boiler tubes which which were the major barrier to the boiler.

ICME115: CONSTRUCTION SAFETY MANAGEMENT

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Abstract- This paper presented the multi-response optimization of machining parameters is performed in rotary electrical discharge machining (EDM) on composite using grey based Taguchi method. The effects of combination method of EDM (Rotary EDM for 1st step minor diameter and Sinking EDM for 2nd step major diameter of tool electrode) on responses have been analyzed. The machining method consists of two processing stages which are carried out in sequence, namely Rotary and Sinking EDM. Taguchi L₉(3³) orthogonal array was used to

formulate the experimental layout and experiments were conducted on composite with copper multi-diameter electrode. Three input variables such as pulse current, pulse-on time and method of EDM, while material removal rate (MRR), over cut (OC) and taper ratio (TR) were chosen as output responses. From main effect plot showed that the optimum level of parameters are pulse current at 1.0 amps, pulse-on time of 6 μ s by using combination of rotary and sinking EDM method. ANOVA results revealed that the method of EDM and pulse current are the most dominant parameters with contribution of 53.95% and 21.38% respectively.

ICMEI16: EFFICIENT PRODUCTION OF BIOGAS FROM DIFFERENT NON EDIBLE OIL CAKES

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Abstract- Oil seed cakes are the potential source for biogas production and this is the better way to dispose large quantity of oil seed cakes from biofuel industry it has important role in the future energy supply from biomasses like oil cakes and cow dung and this is the way to saving of fuel wood and reduce the pressure on forests. Pongamia, Bassia and Calophyllum are three major species growing in India and produced lot of oil seed cakes. Calophyllum, Simarouba, Jatropha, Pongamia and Bassia seed cakes were used in the experiments, all these five species are the best source for biogas production, among five Calophyllum, Pongamia and Bassia shown good performance. The spent slurry has rich in nutrients as compared to cow dung this can be used as manure.

ICMEI01: ABRASION LOSS AND SURFACE ROUGHNESS OF CRAB CARAPACE IMPREGNATED COIR-POLYESTER COMPOSITES

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Abstract- Roughness plays an important role in determining how an object would be related with its environment. In tribology, Rough surfaces easily obtain wear more quickly and have higher friction coefficients than smooth surfaces. Roughness is often a good analyzer of the performance of a mechanical component. This investigation is aimed to study the abrasion loss and surface roughness behaviors in crab carapace-filled coir fiber reinforced polyester composites. The development of filler-impregnated fiber-polymer composites in recent years necessitated the evaluation and prediction of tribological behaviors in fiber reinforced composites. The composite fabrication was planned by varying the three fabrication parameters with three levels such as fiber length (10 mm, 30 mm, and 50 mm), fiber diameter (0.1 mm,

0.18 mm, and 0.25 mm), and content of crab carapace fillers (0%, 2%, and 4%) as per Design of Experiments (DOEs) in this current investigation. Low velocity integrated wear loss tests on composite samples were carried out, and also the average surface roughness is measured in the fabricated composites.

DEPARTMENT
OF
SCIENCE & HUMANITIES

ICMH101: NEW SORT OF OPEN AND CLOSED MAPPINGS VIA δg^* -SETS

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Abstract – The aim of this paper is to introduce two new classes of mappings of δg^* -closed maps and Weakly δg^* -closed maps using δg^* -closed sets and study their basic properties. We obtain several characterizations and some their properties. Finally we introduce and study a new class of spaces namely δg^* -regular.

ICMH102: TWO DIMENSIONAL SATISFACTORY ROOMMATES PROBLEM

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Abstract – We present a worldwide ranking of roommate pairings as a constraint to the stable Roommates problem. Weakly stable matchings, in contrast to the unrestricted problem, are guaranteed to exist and can be found in polynomial time. However, strongly stable matchings may not exist, thus we consider the difficulty of constructing weakly stable matchings with a variety of desirable qualities. We provide a polynomial-time approach for finding a rank-maximal (weakly stable) matching in particular. We are provided $2N$ men and each person's preference list in the stable Housemates dilemma. The task is to identify a stable matching, which is defined as a set of N pairs that satisfy the stability requirement. This problem is known to be solved in polynomial time; more specifically, there is a polynomial-time algorithm for finding a stable match for a given instance or reporting that a given instance has no stable match. In this study, we extend the problem to three dimensions, defining a matching as a set of triples, and prove that it is NP-complete.

ICMH103: BIPOLAR INTERVAL VALUED MULTI FUZZY SUBGROUPS OF A GROUP

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Arulmigu Palani Andavar College of Arts And Culture, Palani

Abstract – In this paper, bipolar interval valued multi fuzzy subgroups of a group and their properties are discussed and also prove some valuable theorems.

ICMH104: BIPOLAR INTERVAL VALUED MULTI FUZZY SUBGROUPS OF A GROUP

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Abstract – In this paper, bipolar interval valued multi fuzzy subgroups of a group and their properties are discussed and also prove some valuable theorems.

ICMHI01: AN APPLICATION OF FUZZY GRAPH TO REDUCE THE TRAFFIC CONGESTIONS

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Abstract – The main concept of this model is a method of analysing traffic congestions. Traffic congestions are due to increase of a number of vehicles flow in a city. It can be used to represent traffic networks in a city. In this paper, a fuzzy graph model is useful to represent the traffic network system. The road structure design need to be investigated how to reduce the accident prone zone, such that, the total number of vehicles are moving in a particular time on the road and to minimized traffic congestions. To avoid traffic jam in bigger cities, a development of fuzzy application can be used to prevent traffic jam.

ICPYI01: MICROSTRUCTURAL AND MORPHOLOGICAL CHARACTERIZATION OF MgO NANOSTRUCTURES

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Abstract – Magnesium oxide nanostructures have been synthesized by the reaction of magnesium nitrate with aqueous ammonia. MgO nano particles have been prepared via hydroxide precipitation from aqueous solutions, followed by the thermal decomposition of the hydroxide. The structural, functional and optical characteristics of synthesized MgO nanostructures were characterized by X-ray diffraction (XRD), FTIR and UV-Vis-NIR studies respectively. The morphology and size of the nanostructures have been observed by scanning electron microscopy (SEM).

**ICCYI01: DEVELOPMENT OF NANOSTRUCTURED Zn-Co-Ni ALLOY ANODE
FOR LITHIUM ION BATTERIES**

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Abstract – Lithium ion batteries have long been a popular power source for portable electronic gadgets like cell phones. The primary goal is to replace the traditional graphite anode with a higher capacity anode. Lithium metal alloys, or LiM, have gotten a lot of interest in the lithium ion battery market in recent years. The materials have a high specific capacity and are being explored as potential negative electrodes to replace carbon electrodes. The process of alloy electro deposition is frequently utilised to create novel materials with specific mechanical, chemical, and physical properties. In comparison to other processes like mechanical alloying, sputtering, and vapour deposition, this technology has proven to be particularly useful due to its simplicity and low cost.

**ICCYI02: OPTIMIZATION OF PROCESS PARAMETERS FOR ALUMINUM
ANODIZATION USING DESIGN OF EXPERIMENTS**

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Abstract – The anodization of Aluminium has been carried out in sulphuric acid despite other electrolytes like phosphoric acid and oxalic acid which are also widely reported. The anodization with sulphuric acid generates micro pores, which is highly essential to generate micro porous templates. Whereas the anodizations with oxalic acid and phosphoric acid yield a high dense Al₂O₃ layer, which may not be suitable for producing templates. The anodization process is the oxidation of Aluminium atoms present in the surface and forming a superficial Al₂O₃ layer.

**ICMHI02: SOME THEOREMS IN (T, S)-INTUITIONISTIC FUZZY SUB BIGROUP OF
A BIGROUP**

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Abstract – In this paper, we made an attempt to study the algebraic nature of (T, S)-intuitionistic fuzzysubgroup of a bigroup.

2000 AMS Subject classification: 03F55, 06D72, 08A72.

ICMHI03: DISTANCE TWO LABELING ON SPECIAL FAMILY OF GRAPHS

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Abstract–

An $L(2, 1)$ -labeling of a graph G is an assignment f from the vertex set $V(G)$ to the set of non-negative integers such that $|f(x) - f(y)| \geq 2$ if x and y are adjacent and $|f(x) - f(y)| \geq 1$ if x and y are at distance 2, for all x and y in $V(G)$. A k - $L(2, 1)$ -labeling is an $L(2, 1)$ -labeling $f : V(G) \rightarrow \{0, \dots, k\}$, and we are interested to find the minimum k among all possible assignments. This invariant, the minimum k , is known as the $L(2, 1)$ -labeling number or λ -number and is denoted by $\lambda(G)$. In this paper, we determine the λ -number for the coronas $P_m \circ P_n, P_m \circ C_n, P_m \circ K_{1,n}$ and $P_m \circ W_n$ and find an upper bound of the λ -number for the corona $G_1 \circ G_2$ where G_1 and G_2 are any two graphs such that G_2 has an injective $L(2, 1)$ -labeling and also we prove that the bound is attainable when G_1 and G_2 are complete. Also we present an upper bound of the λ -number for the corona $G_1 \circ G_2$ where G_1 and G_2 are any two graphs.

ICPYI02: GEL GROWTH OF TGSP CRYSTAL AND ITS CHARACTERIZATION

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Abstract – Triglycine sulphophosphate (TGSP) is a mixed crystal of the triglycine sulphate (TGS) family. Single crystal of TGSP crystals were grown by gel method at room temperature. The grown crystals are characterized by single crystal and powder X-Ray diffraction, optical absorption spectrum and Fourier Transform Infrared analysis. From the results of XRD, the structural details of the grown crystals were found. Various functional frequencies of the grown crystals were identified from FTIR analysis and the detailed results are presented in this paper.

ICENI01: A PSYCHOLOGICAL STUDY OF ANITA DESAI'S "CRY, THE PEACOCK"

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Abstract – Anita Desai's novel Cry, The Peacock is a commentary on the marital relations of such wives and husbands who belong to different strata of the society. Anita Desai has delved deep into the psychological depth of women like Maya. She has used images of horror like that of the albino monster to present Maya's lacerated feelings. In several of her novels she has depicted the pitiable state of women in Indian society, and herself being a woman, she succeeds admirably in her effort. This novel is, therefore, a treatise on the condition of such women as have the misfortune of having nothing in common with their husbands.