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<td>3.</td>
<td>C. Sivapragasam, K. Selva Rani, S.Vanitha, A.Kowsiga, G.Lidwin Joan Jeraldine</td>
<td>Effect of Different Combinations of Panchagavya on Plant Yield</td>
<td>Use of organic fertilizer is being promoted as the sustainable method of agriculture for maximizing yield. In this study the six different combinations of Panchagavya are prepared and laboratory growth study is made using seed. Vigour index is used for quantifying growth rate of seeds. Result indicates that 500ml of tender coconut water added to the control combination gives maximum yield. The efficacy of the optimal Panchagavya combination from the lab study is applied to the field directly yielding much higher growth than the other methods used by the farmers.</td>
<td>organic fertilizer, panchagavya, tender coconut water, vigour index,</td>
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References:

Authors: S. Vanitha, C. Sivapragasam, K. Rohini, A. Malathy

Paper Title: Genetic Programming based Modeling Method for Prediction of Phosphate in Water Hyacinth based Wetland System

Abstract: Phosphate Removal is very essential while discharging into natural water bodies. In this study, water hyacinth based wetland system is created at lab scale level, the inlet phosphate, outlet phosphate is studied daily till maximum removal is obtained. Weather parameters namely Apparent temperature (Ta) and wastewater temperature (Tw) are collected. Genetic Programming (GP) based mathematical model is developed and influence of weather parameter and wastewater temperature is studied. It is seen Genetic programming based mathematical model can predict the behaviour of wetland system accurately and the influence of weather is not evident in small level wetland system because of less in variation of Ta and Tw. Also it is recommended to conduct the experiments with variation of Ta and Tw to understand the major input parameter affecting the wetland system.

Keyword: phosphate removal, genetic programming, weather parameters, mathematical modeling

References:

Authors: S. Vanitha, C. Sivapragasam

Paper Title: Suitability of Macrophytes for Wastewater Treatment and Biogas Generation

Abstract: In this paper three sustainable approaches are made in waste management option. Firstly primary treated domestic sewage is treated by aquatic macrophytes using duckweed, water hyacinth and water lettuce. Biochemical Oxygen Demand (BOD), Chemical Oxygen Demand (COD), Total Suspended Solids (TSS), Total Dissolved Solids (TDS), Phosphate, Nitrates are tested before and after. Result indicates in terms of water quality, almost all three plants shows same removal efficiencies. BOD and TSS removal efficiency is attained more than 95%. COD and TDS removal is reached upto 50% for almost all plants. Secondly the used aquatic
macrophytes for wastewater treatment is again used for generation of biogas (water lettuce unit, duckweed unit, water lettuce unit). In addition to three aquatic macrophytes, sludge is collected from aquatic macrophyte unit for generation of biogas. Comparison is made with conventional cow dung biogas unit. Result indicates water lettuce and duckweed produce biogas at earlier stage itself and water hyacinth takes some time for starting of biogas production. This may be due to the structure and texture causes some time for decomposition. Sludge gives maximum biogas generation among all experimental setup. Also in this study cow dung did not give biogas more may be due to poor blend ratio of cow dung with water is one of the reason.

**Keyword:** domestic sewage, Aquatic plants, biogas, spinach plant.

**References:**

**Authors:** T.R. Neelakantan

**Paper Title:** User-friendly Method and Skew Removal in NIRF

**Abstract:** National Institute Ranking Framework (NIRF) initiative of Government of India is becoming popular among students. NIRF changed ranking methods in the past and stabilizing. This paper presents some analyses and suggestions based on the 4th edition of annual ranks released in April 2019. Unlike many private ranking systems, NIRF ranking is performed by the Government of India and it analyses a lot of data. However, if the facilities of presenting data in the user-friendly format are provided, many students and others may benefit a lot. Further, some of the parameters are less required by students and has skew. Suggestions are given to improve NIRF so that more students and others will get benefitted.

**Keyword:** Higher Education, National Institute Ranking Framework, Rank.

**References:**

**Authors:** T.R. Neelakantan, T. Rajeshwaran and G. N. Renganathan

**Paper Title:** Hydraulic Advantage of Piano-key Weir Over Ogee Weir

**Abstract:** The piano-key weir is a new encouraging hydraulic structure yet to become a widespread usage due to limited knowledge of the hydraulic performance. A laboratory investigation on the hydraulic efficiency of the piano-key weir was compared with that of an ogee weir. The experiment data confirmed that the piano-key weir discharged more than ogee weir for the same upstream head. However, the coefficient discharge of the piano-key weir is extremely low compared to the ogee weir.

**Keyword:** hydraulic performance, labyrinth, piano-key, weir

**References:**

**Authors:** T.R. Neelakantan, D. Vijay, R. Sasikrishna, R. Ashokkumar

**Paper Title:** Performance Advantages of Labyrinth Weir

**Abstract:** Weir is a very common structure across water courses to control flow and to release surplus water from water bodies. Simple straight weirs are less efficient compared to labyrinth weir where the weir length is...
increased by folds. In this research, experiments were conducted in the laboratory to find the increase in discharge due to labyrinth or decrease in coefficient of discharge due to labyrinth. Further two labyrinth weirs were analyzed to understand the efficiency with respect to the shape of the labyrinth weir. Compared to the ogee weir, the labyrinth weir discharges more water (more than 60%) for the same head of flow.

**Keyword:** coefficient of discharge, hydraulic performance, labyrinth weir, ogee weir

**References:**

**Authors:** Shaji M Jamal, Femi K M et al, T.R Neelakantan

**Paper Title:** A Compact Equipment for Removing Dissolved Iron from Drinking Water

**Abstract:** Iron is an essential mineral for health, but more than desired content in water may become objectionable as it will give a rusty colour on laundered clothes and affect the taste and may cause odour. A new and effective economic product was developed for removing iron from waterworks on the principle of cascading aeration. It requires only less space, zero maintenance, it is energy efficient and it can be used for water with a range of iron content.

**Keyword:** Dissolved iron, Drinking water, Iron remover

**References:**

**Authors:** Muthukannan M, Vinod Kumar M

**Paper Title:** Structural Performance of Steel Fibre Reinforced Lightweight Concrete Frames Subjected to Lateral Load

**Abstract:** Masonry infilled Reinforced Concrete (RC) framed structure is the utmost common kind of building in which, RC frames contribute in resisting lateral forces. Due to heavy mass and rigid construction, the RC framed buildings performs unfortunate under lateral forces. Practice of Lightweight concrete (LWC) is superlative because the dead load of concrete is massive. Low density materials are chosen in LWC, reduces the mass of the building thus decreasing the influence of lateral forces. However, LWC having a lesser modulus of elasticity has a more rapidly develops the cracks in the RC members. In this investigation, pumice is a naturally available material of volcanic source, has low density, which creates it ideal for production of LWC, likewise steel fibres are employed as an additive to enhance the energy absorption ability and to reduce the possibility of development of the cracks. In the present paper the structural behaviour of Lightweight RC framed structures realized by using steel fibres and subjected to lateral forces, In this study, four RC frames viz., F1-NWC (Control), F2- NWCF (with 1% Vf of steel fibres), F3-LWC (with 20% substitute of coarse aggregate instead of pumice aggregate) and F4-LWCF (with 20% substitute of coarse aggregate instead of pumice aggregate and 1% Vf of steel fibres) were casted and tested under in-plane horizontal loading, which are designed according to
Indian Standard (IS) code IS 456 (2000). It was observed that the behaviour of F4-LWCF significantly better in comparison to other frames in various parameters such as load carrying capacity, displacement, ductility, stiffness and energy dissipation.

**Keyword:** Lateral forces, Lightweight concrete (LWC), Pumice aggregate, Steel fibres.

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1. ASTM C494 Type F “Standard specification for chemical admixtures for concrete”.
7. IS: 10262 (2009), “Guidelines for Concrete Mix Proportioning”.

**Authors:** A. Chithambar Ganesh, M. Muthukannan

**Paper Title:** Effect of steel fibers over the Self Compacting Concrete

**Abstract:** The introduction of self-compacting concrete in the construction industry overcomes the flaws caused due to the improper compaction of concrete. Fibers are proved to increase the properties of conventional concrete. This research focuses on the performance of self-compacting concrete after augmenting steel fibers. The steel fibers are added in proportions such as 0.25 percentage, 0.5 percentage, 0.75 percentage and 1 percentage. After casting the self-compacting concrete, the strength was assessed for 7 days and 28 days and its compressive strength and split tensile strength was analyzed. The inclusion of steel fibers yielded good outcome in the tests and it is proved to yield better engineering properties.

**Keyword:** The steel fibers are added in proportions such as 0.25 percentage,

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**Authors:** Premkumar R, Ramesh Babu Chokkalingam, M Shanmugasundaram, S.Rajesh

**Paper Title:** Effect of Silica fume on Ordinary Portland Cement and Polymer Concrete Made out of M Sand

**Abstract:** In this investigation, conventional concrete was made with replacing the sand by 80 % of M-sand and the cement by fillet material silica fume in varying percentages say 5%, 10 %, and 15%, to study the compressive strength, split tensile strength and flexural strength. In order to the maximum strength was attained at 10% of silica fume. The result showed that by increasing the silica fume content, the strength of the M-sand concrete was decreased because higher fineness of silica fume content decreases the strength of the M-sand concrete. Secondly polymer concrete with unsaturated polyester resin with hardener MEXP. Cobalt as the accelerator and silica fume in varying percentages say 0%, 5% and 10% was made to study the compressive strength and split tensile strength of polymer concrete. In improved silica fume content the strength was high. Polymer concrete improved the mechanical properties. Polymer concrete system was mainly useful to fill the micro voids. In this research, the maximum strength was attained at 5% of silica fume filler added with polymer.
concrete. Thus the high strength of the concrete was obtained due to the pozzolanic reaction with the silica fume.

**Keyword:** M Sand, Polymer Concrete, Polyester resin, Silica fume.

**References:**


**Authors:** S.Christopher Gnanaraj, Ramesh Babu Chokkalingam, S.K.M. Pothinathan, R.Rekha

**Paper Title:** Experimental Research on Treatment of Greywater using a Prototype

**Abstract:** Water is principal standard resource brought by nature. Freshwater deficiency is a noteworthy issue impacts no less than one fifth of the aggregate masses and more will be affected on account of people advancement. Now a days the openness of consumable water isn’t abundant. Hence to satisfy the need and demand, the best course of action is reusing, and treatment of family wastewater except an irreplaceable part for the human activities. We pick diminish water reuse and stimulate near bore well. For this examination unrefined water and bore water is accumulated from three one of a kind domain, which is attempted by physical and naturally while treating. This ask about expected to consider the efficiencies of unravel treatment for greywater reuse with three models using fine aggregates, various sizes of coarse aggregate, powdered activated carbon in view of quick sand channel thought and complexity and bore water standards. Physt-blend parameters viz. turbidity, pH, CHEMICAL OXYGEN DEMAND (COD), DISSOLVED OXYGEN (DO), Total dissolved solids (TDS), Conductivity, Hardness and alkalinity were penniless down. Organic parameters including coliform were finished by two strategies. The empirical formulas were additionally developed utilizing this investigation. The correlation between's pH-turbidity, pH-EC, pH-DO, pH-BOD, turbidity-Hardness, turbidity-DO, turbidity-BOD, turbidity-COD, BOD-DO, BOD-COD were derived. The expulsion proficiency of pH, turbidity, hardness, ELECTICAL CONDUCTIVITY(EC), DISSOLVED OXYGEN(PO), BIOLOGICAL OXYGEN DEMAND(BOD) and CHEMICAL OXYGEN DEMAND(COD) were between 50% - 90%, 75% - 90%, 70% - 85%, 50 - 90%, 85% - 99%, 70% - 90% and 55% - 90% individually. It is a convincing system for treatment of diminish water when appeared differently in relation to the standard method so it can be executed on little scale at houses, structures et cetera. The result get also nearer to the ground water of different sources. The best level of capability were high, showing the capacity of the structure, and proposing their change keeping in mind the end goal to achieve ordinary viability.

13. **Keyword:** About four key words or phrases in alphabetical order, separated by commas.

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Authors: Ganesan Nagalingam, Ramesh Babu Chokkalingam, Meyyappan PL

Paper Title: Strength Attainment of Geopolymer Concrete with GGBS at Ambient Curing

Abstract: Geopolymer concrete plays a major role in concrete industry by replacing cement and using the industrial wastes. In this study, the cement is completely replaced by GGBS and strength properties are analyzed. An M30 mix design is prepared and the specimens are cast and tested. For this, sodium hydroxide and sodium silicate are used as activator and its ratio is fixed as 1:2.5. Sodium hydroxide of 12 molarity, 550kg/m3 of GGBS is used in the study. Admixture La Hypercrete S25 (HTS code 38244090) is added in the mix by 1% of weight of GGBS to obtain the required workability. For compression study, cubes in 100 mm size are cast. Cylinders with 100mm dia and 200mm height are tested for splitting tensile strength and beam specimens of 500mm long and 100mm cross sections were cast for determining the flexure behaviour. The beams are subjected to ambient curing and tested at 3, 7, 14, 28 and 56 days. The test result shows that there is a gradual increment in all the strengths from 3 to 56 days and it proves that geopolymer concrete with GGBS cured at ambient temperature performs well in the strength properties.

Keyword: activator, admixture, ambient curing, Geopolymer concrete, GGBS

References:
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Authors: Arunkumar K, Muthukannan M

Paper Title: Assessment of Blast Resistant Structures

Abstract: According to National Crime Record Bureau (NCRB) report, accidents due to Fire has been ranked fifth it’s up by three positions from the last year’s ranking and accidents due to fire killed more human lives and lead to property loss. Due to explosive accidents, it revealed that loads, for example, the effect of essential sections, and effect of optional parts, and pressure by reflective and blast waves are generated and it collapses the whole structure. To overcome the damages due to fire accidents, strengthening of members, protection to the structure, design the structural member as a more adequate to resist the blast load and design the structure as a blast resistant may be good. In this paper, various structural members due to blast load and the numerical methods to persist the blast load behaviour are reviewed. The behaviours of various type of concrete under blast load were discussed. Based on the review, it may be concluded that to avoid explosive collapse the structural member has to be designed to withstand the blast waves and utilization of adaptable type materials which was light in weight result by decreasing transfer of energy and less strength, less ductile fibres mixed into the concrete will give blast performance to the concrete.

Keyword: Blast Resistant Structure, Blast Loading, Field Blast Test, Fibre Reinforced Concrete.

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48. Fire accidents in India so far http://www.beyondcarlton.org/7-worst-fire-accidents-india-2018/

Authors: PL. Meyyappan, B. Jayaprakash

Paper Title: Optimized Utilization of Flyash and Cowdung ash in Enhancing the Properties of Self Compacting Concrete

Abstract: In a brief outlook, the conventional concrete has a numerous setbacks in order to congregate the vast demand of the construction industries, regarding the complex construction projects in a stipulated time. Among that, the improper and lack of compaction will leads a key role in affecting the strength and durability characteristics of the concrete in several ways. This issue will be resolved in the existence of the self compacting properties within the concrete. Since the lack of design procedures and mixing guidelines in relevant to Indian standards, many researchers used EFNARC guidelines for their studies. In this paper, the combined effect of the filler materials such as flyash and cowdung ash in satisfying the requirements of SCC is presented for the different replacement levels such as 5%, 10%, 15%, 20%, 25% and 30%. The optimum combined replacement level is found as 15% in succeeding the requirements of the filling and passing ability properties of SCC.

Keywords: SCC, EFNARC Guidelines, Concrete, Strength

References:

16. 66-70

**Authors:** Muthukannan M, Arunkumar K, Maheswari M

**Paper Title:** Treatment of Textile Waste Water using Different Local Absorbents

**Abstract:** The waste water resulting from textile industries is a major environmental pollutant, and it can also contaminate soil when deposited on the ground. There are various commercially available absorbents for treatment of waste water, however, cheaper alternatives are being proposed in this study. Waste water, highly alkaline and high in suspended solids and colour, was used for the investigation. Different proportions of local materials, sugarcane bagasse, saw dust, maize, and lime stone, were utilized in the process, thus, with a view to ascertain their efficiency to modify the water properties: colour, turbidity, sulfate, chromium, iron, Chemical Oxygen Demand, and Biochemical Oxygen Demand. While a dosage of 1-5 ml per 250 ml of sample was added for the adsorption process, activated carbon was replaced with each natural absorbents by 0-100% replacement at 20% intervals and added to the sample water. The optimum adsorbent dosage was obtained by making many trials with different dosages and different pH. The adsorption process was done by using adsorption column. The results showed that the alternative materials studied, could be used effectively for treatment of textile industrial waste water, with performance similar to the conventional absorbents.

**References:**

**Keywords:** waste water, adsorbent, activated carbon, textile dye, eco-friendly.

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**Authors:** Ganesan Nagalingam, Ramesh Babu Chokkalingam, Meyyappan PL

**Paper Title:** Durability Behaviour of Geopolymer Concrete with Metakaolin and GGBS

**Abstract:** This study consists of preparation of Geopolymer concrete mix with Ground Granulated Blast furnace Slag (GGBS) which is followed by the usage of Metakaolin in replacement of GGBS with 5% variation from 0 to 25%. From previous researches on geopolymer concrete with GGBS, an optimized mix is selected and tested for durability behaviour. A 12 Molarity sodium hydroxide solution along with sodium silicate in the ratio of 1:2.5 is used as activator in this study. La Hypercrete S25 which belongs to the category of carboxylic is used as admixture for escalating the workability. Water absorption, Acid resistance, and Rapid Chloride Penetration (RCPT) are the durability tests performed on the specimens. The prepared specimens are water cured at room temperature for the required days in accordance with the codal guidelines and tested for durability. For water absorption test, concrete cylinders of 50mm dia and 100mm height are prepared. 100 mm size cube specimens prepared for acid resistance test. The specimens for RCPT include preparation of discs of 100 mm dia and 50
In all the test specimens, GGBS is replaced by Metakaolin. It is believed from the test results that geopolymer concrete with Metakaolin and GGBS performs well in durability aspects.

**Keyword:** activator, admixture, Geopolymer concrete, GGBS, Metakaolin,

**References:**


Authors: PL. Meyyappan, N. Ganesan

Paper Title: Establishing Relationship of Porosity and Strength of Fibre Reinforced Concrete

Abstract: There are numerous factors that affect the performance of concrete in terms of strength and durability aspects. Amongst, the pores in the concrete are the one which is playing a foremost role in deciding strength and durability characteristics. The presences of pores in the concrete are due to inferior quality of concrete ingredients, lack of w/c ratio, improper compaction, poor workmanship etc. Many past studies reveal that the presence of fillers materials may reduce the pores on the concrete. But at the same time, the strength and durability should improve a lot. Under these circumstances, the presence of steel fibres in the concrete will give a better solution to arrest the pores and furnish desired results in all aspects. This study is made an attempt to establish the relationship between porosity and compressive strength on the various proportions of steel fibres of M20 and M40 grade concrete.

Keyword: Steel fibre reinforced concrete; fibre content, Compressive strength; Porosity

References:


Abstract: The current challenges faced by the civil professionals are unbearable high cost of construction materials, green house effects and disposal of waste materials. All these problems are raised due to the limited supply of natural materials, more construction demand, and enormous generation of waste materials from various sources of occupations etc. The superlative solution for all the problems is to utilize the possible maximum extend of waste materials to the manufacturing of construction materials without compromising its properties. In regarding that, an attempt is made to study the possible way of utilizing the locally available waste products such as sugar cane bagasse, wild green grass and rice husk in to the concrete. All these waste products are dried and burnt into fine ashes. These ashes are added in to the concrete with various proportions such as 0%, 5%, 10%, 15%, 20%, 25% and 30% for examining the strength and durability properties of M20 grade concrete. The test results reveal that, the waste products can be effectively in to the concrete and the optimum proportion found to be around 15% to 20%.

Keywords: Waste Materials, Sugar cane bagasse, Rice husk ash, Green grass ash, Concrete

References:
Polystyrene fibers, GGBS based Geopolymer Concrete. Geopolymer Concrete, Ambient Curing

References:
2. Sundeeplini, Megha Sharma and Dr Vivek Tandon (2016), ‘Ground Granulated Blast Furnace Slag (GGBS) and Rice Husk Ash (RHA) Uses in the Production of Geopolymer Concrete’ Geo-Chicago 2016 GSP 270 621 University Of Wisconsin-Milwaukee on 08.22.16. Copyright ASCE.
11. P. Nath, P. K. Sarker, ‘Geopolymer concrete for AmbientCuring

Authors: Jagan Sivamani

Paper Title: Behaviour of Low cost Tiles and Bricks manufactured using Agricultural Wastes

Abstract: In this study, an attempt has been taken to utilize the wastes produced from agriculture as a partial replacement to scarce material like fine aggregate in the manufacturing of useful construction materials. Also, Waste Sludge (WS) generated through treatment plant from Kalasalingam Academy of Research and Education was used suitably as one of the ingredients in the manufacturing of construction materials. Various other wastes generated through agriculture such as Banana Fiber (BF), Rice Husk Ash (RHA), and Sugarcane Bagasse Ash (SBA) was also utilized suitably after pre-treatment in the manufacture of tiles and bricks. Five different mixes under various levels of replacement of waste sludge and agricultural wastes were prepared to study its behavioral performance. Various tests conducted to study the performance behavior include Compressive Strength, Water Absorption and Physical Parametric tests on both brick and tile specimens. Results indicate that all physical and mechanical properties of bricks and tiles fall within BIS standards by the combination with a higher percentage of Red Soil,Sugarcane fiber and Waste Sludge.

Keyword: Agricultural wastes, Bricks, Fine Aggregate, Pre-treatment, Tiles and Waste Sludge

References:
Conference on Technology and Innovation for Sustainable Development, Thailand, 2008

Authors: S.Rajesh, NVN.Namoothiri,S.Vanitha
Paper Title: Water Quality Index of river Thamirabarani at Papanasam (upper&lower dam) region, Tamilnadu, India
Abstract: This study is done to evaluate water quality of the Thamirabarani river, by using Water Quality Index method. The water quality index of the river water was done, by analyzing the physical and chemical parameters of water samples taken at seven locations in Jan 2017 to March 2017, along the through flow path of the river. The analysis results were compared with maximum permissible limit values recommended by WHO and BIS for drinking, irrigation and aquatic life. The water quality for Dinking was assessed utilizing the WQI technique. The computed WQI values in this study are found to be between 55.65 to 23.3(for drinking), 47.1 to 14.4 (for Irrigation) and 61.2 to 15.4(for Aquatic life).The results are indicates that, for the stretch of Tamirabarani where study was conducted, the water is suited for irrigation.

Keyword: Drinking water, Physicochemical Characteristics, Pollution, Water Quality Index, Water Quality indicators, Thamirabarani river.

References:
13. Shweta Tyagi, Bhavtosh Sharma, Prashant Singh, Rajendra Dobhal 2013. “Water Quality Assessment in terms of Water Quality Index method. The water quality index of the river water was done, by analyzing the physical and chemical parameters of water samples taken at seven locations in Jan 2017 to March 2017, along the through flow path of the river. The analysis results were compared with maximum permissible limit values recommended by WHO and BIS for drinking, irrigation and aquatic life. The water quality for Dinking was assessed utilizing the WQI technique. The computed WQI values in this study are found to be between 55.65 to 23.3(for drinking), 47.1 to 14.4 (for Irrigation) and 61.2 to 15.4(for Aquatic life).The results are indicates that, for the stretch of Tamirabarani where study was conducted, the water is suited for irrigation.

Authors: S.Rajesh, P.Saravanan,S.Pauline,R.Premkumar
Paper Title: Performance Evaluation of Phosphorous Removal by Coagulation using Natural Coagulants
Abstract: Phosphorus is one of the major nutrients contributing the increased eutrophication of lakes and natural waters. The concentration of phosphorus in domestic sewage is generally adequate to support aerobic biological wastewater treatment. Coagulation and flocculation processes can also remove phosphorus from industrial wastewater. In this experimental study, an attempt is made to feasibility of natural coagulants like Cassia Alata, Calotropis Procera, Hyacinth bean, Banana leaves, Carica Papaya, Acacia mearnsii, Jatropha Curcas, Cactus and Tamarind seeds on the decrease of Phosphorous from Industrial wastewater. The batch coagulation test was done to optimum graph was plotted between the removal efficiency all the chosen coagulants. From the optimum trials, that the rate of phosphorous removal is more for hyacinth bean with a level of 75, trailed by casuarinas leaves with 74% and Banana leaves with 73%. Tamarind seed demonstrates the least
Phosphorous expulsion from the wastewater with 56%. From the optimum trails, the Hyacinth bean can be utilized as a successful coagulant for the expulsion of phosphorus from the wastewater. In the optimum trails coagulation studies were carried out to investigate the factor like optimum dosage, pH, initial concentration of Phosphorous, Mixing time and the settling time which influences the removal of phosphorous by coagulation process. From the study, it might be inferred that the maximum percentage removal of phosphorous was acquired for the coagulant measurement of, pH of 8, the initial phosphorous concentration of, mixing time of and settling time of 45 minutes. It might be presumed that the Phosphorous removal from the industrial wastewater of 95% was conceivable when we kept up the optimum condition by the coagulation procedure.

**Keyword:** Effective Coagulant, Industrial Waste Water, Natural Coagulant, Phosphorous Removal.

**References:**

**Authors:** C.Marimuthu, S.Vidya, S. Diwakaran

**Paper Title:** Biogas Production from Poultry Wastewater using Anaerobic Digester

**Abstract:** Experimental work was carried out for the production of Biogas from poultry waste water. The Poultry waste was collected from farm near Nagarcoil at Kanyakumari District. Batch anaerobic digester was designed for 20L capacity. The experiment was carried out for 36 days to monitor the performance. Various parameters like pH, TS, COD have checked for every 24hours. The Production of biogas was measured by water displacement method. The methane content was analyzed by gas chromatography test. Based on the experimental data, kinetics studies have done for various models like Line Weaver-Burk method, Eadie-Hofstee method, Hanes-Woolf method. The Eadie-Hofstee Method has provided better prediction than other method. These results thus indicate that, Eadie-Hofstee Method is best to identify the growth rate, substrate concentration and Limiting Substrate Concentration of the system. The sludge of the poultry wastewater and digester were characterized by SEM analysis. The imaging was done to determine the morphological structure of the sludge and to view the bacterial growth on the surface of the sludge.

**Keyword:** Anaerobic Digester, Biogas, Kinetic studies Poultry waste.

**References:**
Paper Title: An Experimental Study on Mechanical and Durability Properties of Cement Replacing with Marble Powder

Abstract: Leaving the waste products straight to the environment directly can cause environmental issues. Waste can be used as a mixture to create fresh products or can be used as admixtures. In order to make more efficient use of natural assets and protect the environment from waste deposits an inert material which is procured as an industrial by-product during sawing, grinding, and polishing of marble. These wastes can be used as concrete constituents by partly replacing the cement making it cost-effective. The main objective of this research is to examine whether there is any possibility of utilizing marble powder in concrete production or not. This research involves concrete m20 mixture by replacing cement with marble powder in different proportions (0%, 5%, 10% & 15%) by weight to determine the optimum proportion of replacement. The properties of concrete such as compressive strength, flexural strength and modulus of elasticity were determined at age of 7 and 28 days. The durability characteristics of concrete with cement partially replaced by waste marble powders were also evaluated.

Keywords: Concrete, Durability, Mechanical Properties, Normal strength concrete, Waste Marble Powder.

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6. IS 383-1970, Specifications for Coarse and Fine Aggregate from Natural Sources for Concrete, Bureau of Indian Standard, New Delhi, India.

Authors: S.Suresh, J.Revathi

115-118
Abstract: This paper presents an application of fuzzy logic to forecast the compressive strength of concrete. The fuzzy model examines 7 different input parameters that comprises: Cement, Coarse aggregate(CA), Super plasticizer(SP), Fine Aggregate(FA), Slag, Fly ash, Water(W), and 28 days compressive strength is taken as the output parameter. By using Gaussian membership function, the fuzzy logic technique is used for developing models. For assessing the results of FL model with experimental results, root mean square error, mean absolute error and correlation coefficient are used. The results showed that FL can be a better modeling tool and an another technique for predicting the concrete’s compressive strength.

Keyword: Fuzzy Logic, Gaussian membership function, Compressive strength, Concrete.

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are not willing to take any risk and pay for any other modern method of construction.

Keyword: Affordable housing, Urbanization, Income level, Slums, Economic backwardness

References:
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Authors: S.D.Anitha Selvasofia, G. Prince Arulraj, V.G.Srisanthis

Paper Title: Analysis of Traffic Congestion and Remedial Measures, Coimbatore City

Abstract: During the past few years, there has been high growth of demand for road transportation. The volume of road traffic has increased continuously over years due to the increase in the vehicle population, buying power, rented cab services, increasing economy activities and urbanisation. Road accidents and traffic congestion impose a burden on the society. Reducing the traffic congestion and road accidents are very important for efficient road transportation. With the increase in population in Coimbatore, the number of vehicles also increased. An effort has been made to study the traffic volume of Avinashi Road NH47, Trichy Road, NH81, Sathy Road NH209, Mettupalayam Road NH67 and other Corporations Road. The vehicle population in Coimbatore has increased at an alarming rate. In the year 2014-15, around 27100 two wheelers, 4800 cars and 1800 other transport vehicles have been registered. In the year 2015-16, 33000 two wheelers, 6700 cars and 3040 other vehicles have been registered. The increase in the percentage comes to 20%, 40%, 40% respectively during the years 2014-15, 2015-16. Coimbatore has a large number of floating population. The traffic on its roads has increased so much that it often becomes very difficult to cross a road. During the peak hours of the day, we find an unending stream of buses, trucks, cars, temps, scooters, motor-cycles and cycles are seen in many roads. Most of the drivers of the vehicles do not observe traffic rules. Other than this, accident data opinion survey was also carried to know the problems faced by the pedestrians. After analyzing all the data, remedial measures such as widening of road, removal/relocation of bus stops, implementation of speed breakers and introduction of manned and unmanned traffic signals are suggested in the study area. An overall analysis was carried out to determine the effects of introducing the remedial measures. It is found that the traffic congestion can be reduced if the remedial measures are implemented.

Keyword: Accident study, Traffic volume, Traffic congestion, manned traffic signals, traffic signals

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17. Gary A. Davis (001, ‘Using Bayesian Networks to Identify the Causal Effect of Speeding in Individual Vehicle/Pedestrian Collisions’ 17th Conference in Uncertainty in Artificial Intelligence, University of Washington, Seattle, Washington, USA, pp. 105-111

Authors: T Bharath, J Sarathkumar Sebastín
Paper Title: An Experimental Study on Ice Pattern for Casting Process

Abstract: The casting process has come to wide range of use in manufacturing process. Wooden, aluminum and wax are mostly used materials for pattern in the casting. However, it contains some limitations such as expansion of wax pattern, cracks in ceramic, complexity limitation in wooden pattern and removal of wooden pattern from sand mold etc., in the light of this, the work attempts to use ice pattern for mold making and sublimating ice pattern to create cavity in the mold for pouring. Ice pattern can be produced with aid of rapid freeze prototyping (RFP) or by traditional ice mold method. Integration of RFP/Traditional ice mold method with sublimated ice in casting process allows the quick creation of complex metal parts. Here, mold is produced by ice pattern and then ice pattern is removed by sublimation process (sublimation is the process of direct conversion of solid phase to vapor phase of matters) to create cavity. The advantages of no parts geometric complexity problems, No need of parting line design, less complex limitation, sound casting, clean and less cost of process operation, and better performance. This paper will present our creation study on sublimation of ice pattern in greensand for mold making for casting, and results of the cast piece obtained from sand casting process.

Keyword: Rapid freeze prototyping, ice pattern, sublimation of ice, green sand, sand casting process.

References:

Authors: S. Suresh Kumar, M. Uthayakumar, S. Thirumalai Kumaran, K. Vinoth Babu
Paper Title: Synthesis, Characterization and Testing of Al Alloy Based Hybrid Composite Materials

Abstract: The developments in the area of aerospace, advancing activities in aircraft field and automotive industry emerges the exploit of new materials. In such applications, the role of Metal Matrix Composites (MMCs) is inevitable. In the proposed article, the fabrication of Al (6351) alloy reinforced with SiC and varying weight proportion of Boron Carbide (B4C) was done through stir casting process. The characterization of prepared composite materials is evaluated to ensure the homogeneous distribution of reinforced particulates in Al matrix. The existence of alloying elements and their mapping is done through EDS. Moreover, the enhancement of physical and mechanical behavior of the fabricated composites is also discussed in detail.

Keyword: hybrid composite, stir casting, SEM, microstructure, mechanical properties.

References:
2. Wang Zhelong, Geng Xuesong, Chi Guanxin and Wang Yukui, “Surface Integrity associated with SiC/Al particulate composite


Authors: P. Ram Kumar, M.Sivasubramanian, P.RajeshKanna, P.Raveendiran

Paper Title: **Thermal Characteristics Analysis on Multi- Heat Pipe Induced Heat Exchanger**

Abstract: In this investigation of multi heat pipe induced in heat exchanger shows the developments in heat transfer is to improve the efficiency of heat exchangers. Water is used as a heat transfer fluid and acetone is used as a working fluid. Rotameter is set to measure the flow rate of cold water and hot water. To maintain the parameter as experimental setup. Then set the mass flow rate of hot water as 40 LPH, 60LPH, 80 LPH, 100LPH, 120 LPH and mass flow rate of cold water as 20 LPH, 30 LPH, 40 LPH, 50 LPH, and 60 LPH. Then 40 °C, 45 °C, 50 °C, 55 °C, 60 °C are the temperatures of hot water at inlet are maintained. To find some various physical parameters of Qc, hc, Re, Pr, Rth. The maximum effectiveness of the investigation obtained from condition of Thi 60 °C, Tci 32 °C and 100 LPH mhi, 60 LPH mci the maximum effectiveness attained as 57.25. Then the mhi as 100 LPH, mci as 60 LPH and Thi at 40 °C as 37.6%. It shows the effectiveness get increased about 34.3 to the maximum conditions.

Keywords: Multi Heat Pipe, heat exchanger, Mass flow rates, Temperature of hot water, Heat transfer rate, Effectiveness.

References:


Authors: Vignesh Sreekanathan Mair, Jothiraj Palaniappan, Winowlin Jappes JT
Abstract: Ionizing radiation finds its part in a wide spectrum of fields such as medicine, industry and research. These radiations in the form of alpha, beta, neutron particles, gamma and X-rays are very dangerous for not only humans but also for biotic and abiotic environments. The present article briefly works out the irradiation shielding ability of some potential composite materials to recognize the shielding tendency and enabling the same to find some promising applications in defense as well as nuclear research. The physics of irradiation decay and shielding is appraised in this critique. This review article studies about various materials employed for the attenuation of nuclear radiations and their response in terms of attenuation rates (I/I₀) after exposure to the radiation. The study also focuses on the mechanical performance of the shielding materials meticulously for the application of dry storage of the spent fuel possessing a potential threat of radiation hazards. Moreover the evolution of composite materials in the structural applications is contemplated.

Keyword: Attenuation, Composite materials, Dry Storage, Irradiation shielding

References:
Abstract: In the past three decades, it is very challenging for the researchers to design and develop a best gas turbine engine component. Engine component has to face different operating conditions at different working environments. Nickel based superalloys are the best material to design turbine components. Inconel 718, Inconel 617, Hastelloy, Monel and Udiment are the common material used for turbine components. Directional solidification is one of the conventional casting routes followed to develop turbine blades. It is also reported that the raw materials are heat treated / age hardened to enrich the desired properties of the material implementation. Accordingly they are highly susceptible to mechanical and thermal stresses while operating. The hot section of the turbine components will experience repeated thermal stress. The halides in the combination of sulfur, chlorides and vanadate are deposited as molten salt on the surface of the turbine blade. On prolonged exposure the surface of the turbine blade starts to peel as an oxide scale. Microscopic images are the supportive results to compare the surface morphology after complete oxidation / corrosion studies. The spectroscopic results are useful to identify the elemental analysis over oxides formed. The predominant oxides observed are NiO, Cr2O3, Fe2O3 and NiCr2O4. These oxides are vulnerable on prolonged exposure and according to PB ratio the passivation are very less. In recent research, the invention on nickel based superalloys turbine blades produced through other advanced manufacturing process is also compared. A summary was made through comparing the conventional material and advanced materials performance of turbine blade material for high temperature performance.

Keywords: nickel, corrosion, oxide, SEM, EDS, XRD

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Authors:
Shan M Assis, S. Jeyakumar, K. Jayaraman

Paper Title:
Flow characteristics of Isymmetric Cavity Rear Wall Divergence Angle in a Scramjet Combustor

Abstract:
Non-reacting experimental study was performed on a rear wall angled cavity actuated supersonic flow of Mach 1.5 from a convergent divergent nozzle using a blowdown wind tunnel test setup. Ten different model combinations of double angled rear wall cavities is preferred for the study of improvements in the geometrical design of the combustor. Flow field properties of various cavity geometries were analyzed based on the key parameter like, wall static pressures, stagnation pressure loss to the flow and qualitative mixing of flow using momentum flux distribution. The static pressure is found to decrease inside the combustor with a decrease in the secondary dual rear wall angle below 90 degrees whereas value increases at the rear wall Ouling to oscillation and recompression of shear layers inside the cavity region. In addition, the decrement in primary rear wall angle, an enhancement in mixing profile and a reduction in stagnation pressure loss are also observed.

Keyword:
Cavity divergence angle, scramjet, momentum flux distribution, wall static pressure, pressure loss.

References:
6. Wei Huang, Zhen-guo Wang, Li Yan and Wei-dong Liu, “Numerical validation and parametric investigation on the cold flow
Abstract: The prevention or minimization of erosion is an urgent need. The proper selection of the material and the adopting methods for controlling the factors influencing erosion are the commonly used techniques. Duplex Stainless Steel because of its good corrosion resistance and other properties becomes a common choice. To have an effective control over erosion we must understand the effect of each parameter over the rate of erosion. Air jet test rig was used to study the erosion behavior of Duplex Stainless steel of 2205 grade in a controlled environment. Erosion tests were carried out with varying angle of impact, flow velocity and mass flow rate under standard conditions using an air jet erosion rig made according to ASTM G76 standard. Examination of the results associated with various elements such as impact angles, mass flow rate and flow velocity. The results showed that the erosion rate was maximum at lower impact angles and decreases with higher impact angles and the erosion rate increase with an increase in velocity and decrease with the increase in mass flow rate.

Keywords: duplex steel, erosion, standard.

References:

Authors: Roshan Kuruvila, S. Thirumalai Kumaran, M. Adam Khan

Paper Title: Analysis of air jet erosion on duplex stainless steel

36.

Authors: R.Manikandan, .S.Rajesh, Chatush, P.Sibhin, Vignesh, G.Rampranav

Paper Title: Hazard Identification and Risk assessment in the Olive products manufacturing industry

Abstract: Nowadays health and safety issues have been raised all the manufacturing industry during making products. Here the work is considered about the manufacturing process of Olive products and issues faced by workers in the industry. In industry workers mostly exposed by health and safety hazards. The objective of this study is to identify the risk level in the manufacturing process of Olive in industry and to assessment procedure is given for access to the manufacturing process without adverse effect to the human being. The risk level is estimated using hazards, risk (probability of hazards), severity and risk assessment matrix. Based on the aforementioned consideration in the industry during the manufacturing process of Olive, the risk management action is given and it should be reviewed and documented.

Keywords: Health issues, Safety issues, Olive manufacturing process, Risk assessment.

References:

Authors: R.Manikandan, S.Rajesh, T.Nikhil Babu, P.Vaibhav, P.Pradeep kannan

Paper Title: Manufacturing Process of Ductile Pipe using Casting Technique

Abstract: In this paper, the study the behavior of bendable iron which is used to the manufacturing of ductile steel pipe. Bendable Iron offers higher elasticity than mellow steel and holds the intrinsic consumption opposition of cast iron because of its spheroidal graphite small scale structure. Thus this bendable iron is utilized in the production of channels by Srikalahasti Pipes Limited. The state of graphite in the microstructure of the metal ranges from 100mm to 1100mm measurement for ductile and cast iron. Channels produced using Ductile Iron give considerable advantages as far as weight bearing capacity, sway opposition and ability to continue outer static/unique stacking. These channels have adaptable push-on joints which don't spill at a high or low weight, notwithstanding when avoided and are prominently known as 'Prepared to utilize' funnels, because of the simplicity of joining these channels. In the assembling procedure of Ductile Iron funnels water is utilized for cooling frameworks in different areas. Keeping in perspective on generally water necessity and to lessen groundwater tapping, a 5 MLD sewerage treatment plant has been set up in 2011 at a capex of Rs 20 crores which is adequate for procedure water prerequisite of the plant, which helped in sparing water amid the assembling procedure. The investigation of utilization of Ductile iron in the assembling of channels by Srikalhaasthi Pipes Limited is giving beneficiaries in different segments as these are provided to different water sheets, civic enterprises, military specialist administrations, railroads, and contractual workers the nation over for their water foundation ventures.

Keyword: Ductile iron, Cast iron, Graphite, Pipes.

References:

Authors: Venkumar P, Sureshkrishna K, Vignesh N, Sundaramoorthy K, Muthu Kumaran E

Paper Title: Automatic Drip Irrigation Using Solar Energy

Abstract: The proper usage of water is essential in irrigation because of the shortage of water. The shortage of water is due to lack of rain and continuous supply of water for irrigation as a result lot of water got wasted.
Most of the physically challenged have depression because of their physical disability. To avoid depression they have to streamline their thoughts. Analysis of thought is one of the introspection practices in the World Community Service Centre (WCSC), Aliyar, Tamilnadu, India, which is designed and developed by Vethathiri Maharishi. Throughout the world so far around seven and half million people were trained in this analysis of thought introspection practices through this centre. Thought is one of the important processes for the humankind; if one should understand the thought then one can understand the whole process of the universe. Thought is very important for the differently abled people. The objective of this research is to explain the concept of Vethathiri Mahaishi’s analysis of thought and analyzing the effect of this introspection practices through the questionnaire based analysis to the differently abled people. The result shows that the effect of Vethathiri Maharishi’s analysis of thought is very effective and useful to the people to streamline their thoughts. 

Keyword: Depression, Physically Challenged, Thoughts

References:

Impulse force is the key for all high speed aero propulsion system. Solid propellants are uncontrollable once it ignited because it has the ingredients (fuel, oxidizer) for combustion within the chamber in which they are ignited. Since an entire solid propellant motor performance depends on propellant choice, chamber pressure, and nozzle design, the evaluation of propellant properties is highly needed. In the proposed Ultrasonic Impulse measuring system, the solid propellant motor, when fired, produces a thrust force which makes a bending moment in the simply supported beam. A sensitive Ultrasonic sensor will calibrate the bending moment, proportional to the Impulse force. The effective burning time is noted. Thermocouple reading, load cell reading, and the effective burning time value is used for calculating the mass flow rate, effective exhaust velocity, and specific impulse. The different fuel – oxidizer combinations with catalysers, binders are made. The small scaled propellant motor with length 0.12m, Diameter 0.025m, Exit Nozzle Diameter 0.003m, Empty Motor weight 20grams are used. The Recrystallation method is used for propellant preparation. The pyrotechnic ignition is adapted. The Grain test, Rope test are carried out. We have chosen high molecular weight, and low heat of formation value propellants. There are 4 different propellant combinations are tested with the proposed impulse measuring system. The Specific impulse reading of KNO3 + C12H22O11 + Al powder combination has highest value among all the propellants. It has 87seconds of specific impulse. The proposed impulse measuring system gives the reasonable readings with minimum error. We have compared the experimental results with the theoretical results and got the specific impulse of 90 seconds. The heat of combustion value and the characteristic velocity of the solid propellant combination (KNO3 + C12H22O11 + Al powder) are decreased.
**Keyword:** Impulse force, Ultrasonic Impulse Measuring System, Bending moment, Heat of formation, Characteristic velocity, Recrystallation method.

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**Authors:** J.Sarathkumar Sebastin

**Paper Title:** Theoretical Examination of Laser Propulsion for Aerospace Application

**Abstract:** This paper represents the significance of laser Propulsion for Aerospace Application. Laser impetus is a type of shaft controlled drive where the vitality source is a remote laser framework and separate from the response mass. This type of drive varies from a regular concoction rocket where both vitality and response mass originate from the strong or fluid charges continued board the vehicle. The ongoing tests on laser Propulsion demonstrate that, a little quad copter has flown for 12 hours and 26 minutes charged by a 2.25 kW laser (controlled at not exactly 50% of its ordinary working current), utilizing 170 watt photovoltaic exhibits as the power recipient, and a laser has been shown to charge the batteries of an unmanned elevated vehicle in trip for 48 hours. For shuttle, laser electric impetus is considered as a contender to sunlight based electric or atomic electric drive for low-push impetus in space. In the present examination, correlation of execution parameters of Laser Propulsion with Solar Propulsion are assessed hypothetically.

**Keyword:** Beam Powered Propulsion, Solar Propulsion, laser Electric Propulsion

**References:**

**Authors:** J.Sarathkumar Sebastin

**Paper Title:** Anaerobic Digestion Creating Renewable Energy-The Ultimate Closed Loop System

**Abstract:** This paper clarifies the significance of Anaerobic Digestion (AD) process. Sustainable power source from anaerobic assimilation gets little evaluation in the press when contrasted with other standard inexhaustible power age advances. It has not been so wel known a sustainable power source when contrasted with hydropower sustainable power source or wind sustainable power source in the course of the most recent couple of years. Be that as it may, Renewable vitality from anaerobic processing is boosted the innovation will turn out to be increasingly mainstream in the coming years. Sustainable power source from anaerobic assimilation is amassed in America and Europe and eminently famous in India. Each 1 ton of sustenance waste discarded unnecessarily is in charge of 4.5 huge amounts of CO2 proportionate emanations. Advertisement gives a neighbourhood reasonable secure vitality source free of worldwide financial vitality changes and accessibility, where income is kept in the nearby economy as opposed to going to oil rich nations and multinationals.
Sustainable power source from anaerobic processing is created by the consuming of methane. Sustainable power source from anaerobic assimilation is created in storehouses where specific microbes are added to natural waste. Sewage, vegetation, excrement, slaughterhouse waste and waste water would all be able to be separated in an anaerobic assimilation storehouse. At times, specific silage yields are developed for decay. The microbes are added to the waste and the disintegration happens without oxygen. The methane delivered during decay is scothed nearby, driving turbines and making inexhaustible power. Anaerobic processing isn’t especially reasonable for little scale local sustainable power creation, to a great extent because of the space prerequisites for the storehouses and the sheer measure of waste required to delivering methane. Notwithstanding, sustainable power source from anaerobic assimilation can be delivered on a huge business scale, a training regular in the United States, taking waste from a wide area.

**Keyword:** Anaerobic Digestion (AD), Processing techniques, Applications.

**References:**

**Authors:** Vivek Natarajan, S, Vivekanandhan, B, Armstrong, M

**Paper Title:** Aggrandizement in the Performance of Double slope Solar Still with the Incorporation of Peltier Effect in addition to water depths

**Abstract:** Because of continuous increment in the world population and pollution, the scarcity of water has been increasing constantly. Many researchers are doing research in the field of desalination to convert the impure or scar water into drinkable water. Even though many methodologies were followed, desalination using solar still is the oldest and less cost concept with higher lifetime. So research in this field is still undergoing by enhancing the distillate production by incorporating advanced technologies, by controlling the factors affecting the distillate production and introducing various designs. In this work, the double slope solar still had been used and the performance was found at 1 cm and 0.5 cm water depth. In addition to that, the introduction of Peltier module in the back side of the absorber plate had been fixed to generate the electricity during the day time due to the temperature difference in the Peltier module to charge the battery. The stored current is again used to activate the Peltier to increase the heat generation during the evening time. The performance was increased in both 1 cm water depth and 0.5 water depth by 13% and 9.1% respectively during the heating period in the evening hours.

**Keyword:** double slope solar still, Peltier module, distillate enhancement.

**References:**
Herein, we attempted for the synthesis of novel sponge-sphere like cobalt tungstate nanoparticles (CoWO4 NPs) via a simple co-precipitation technique without using any surfactant/templates. The as-prepared CoWO4 NPs were characterized by various analytical and spectroscopic techniques such as XRD, FT-IR, SEM, EDX, UV-Visible, and elemental mapping analysis. The photocatalytic activity of as-prepared nanoparticles was investigated by the degradation of cationic dye methylene blue (MB) under visible light irradiation. Exibited excellent photodegradation with a decolorization efficiency of 94% within 90 min. In addition, this work gives an novel application of CoWO4 NPs in environmental remediation.


**Paper Title:** Straight-forward Synthesis of Sponge-spherelike Cobalt Tungstate: An Efficient Photocatalyst for Dye Degradation

**Abstract:**

Herein, we attempted for the synthesis of novel sponge-sphere like cobalt tungstate nanoparticles (CoWO4 NPs) via a simple co-precipitation technique without using any surfactant/templates. The as-prepared CoWO4 NPs were characterized by various analytical and spectroscopic techniques such as XRD, FT-IR, SEM, EDX, UV-Visible, and elemental mapping analysis. The photocatalytic activity of as-prepared nanoparticles was investigated by the degradation of cationic dye methylene blue (MB) under visible light irradiation. Exhibited excellent photodegradation with a decolorization efficiency of 94% within 90 min. In addition, this work gives an novel application of CoWO4 NPs in environmental remediation.

**Keyword:** CoWO4, Methylene blue, photodegradation.

**References:**


**Authors:** P. Rameshkumar, A. Pandikumar

**Paper Title:** Facile Fabrication of ZnO Nanofibers Based Photoanode for Cost Effective Metal–Free Organic Dye–Sensitized Solar Cells

**Abstract:** A facile substrate grown method was employed to fabricate zinc oxide nanofibers (ZnO NFs).
modified photoanode on fluorine-doped tin oxide (FTO) substrate. The modified ZnO Nfs photoanode was used to fabricate dye sensitized solar cell (DSSC), sensitized with a cheap metal free organic dye, eosin yellow (eosin-Y). The efficiency of solar to electrical energy conversion was achieved as 1.51% with simulated AM 1.5 G solar irradiation of 100 mW cm⁻². The better efficiency is ascribed to the effective diffusion of electrons within the one dimensional (1D) ZnO Nfs and the efficient interfacial contact between the electrolyte and the ZnO photoanode through pinholes and pores present in the twisted nanofibers. This facilitated the improved interfacial charge transfer. The result demonstrates the promising route of substrate grown ZnO nanofibers for the application of photoanode material in DSSCs.

**Keyword: ZnO nanofibers; Eosin Yellow; ZnO nanostructures; Dye-sensitized solar cells; Photoelectrochemical cells**

**References:**

**Authors:** Arunachalam, S, Selva Kumar, B, Arunandan, M

**Paper Title:** Transition Metal Schiff Base Complexes Synthesis, Spectral Examination and used as a Catalyst in the Oxidation of Alcohols and C-C Coupling Reactions

**Abstract:** In this correspondence, it reveals the formation of Co (II) and Cu (II) complexes consists of a Schiff base ligand having the four donor destinations 2NO. Co(II) and Cu(II) complexes were made ready by the response of 1:1 proportion of the MCl2.6H2O (M = Co/Cu) with a Schiff base ligand prepared by the response of 2-hydroxynaphthaldehyde with orthophenylene diamine in ethanolic medium having the stoichiometric proportion of 2:1. The purged and arranged complexes were analytically explored. Catalytic efficacy was assessed for oxidation of alcohols and C-C coupling responses.

**Keyword:** Cu (II), Co (II), Schiff base, complexes, oxidation of alcohols, C-C coupling

**References:**
Paper Title: Electron Deficient π-hole Assisted Colorimetric Probe for Selective Cyanide Recognition.

Abstract: Here in, simple and novel electron deficient π-hole assisted amide based colorimetric receptor synthesized for cyanide recognition which produce yellow to brownish red color change upon the addition of cyanide in acetonitrile medium. Cyanide has selectively recognized successfully with 1:1 stoichiometric ratio and 1.5523x104 M-1 association constant. Cyanide recognition study was carried out with UV-Vis absorption and FTIR-Analysis and association constant and stoichiometric ratio were calculated by Benesi-Hildebrand plot and job’s continues variation method respectively.

Keyword: Anion sensor, colorimetric sensor, cyanide.

References:
Among the synthetic receptors, Cucurbiturils have gained much attention recent days due to their unique binding potential with variety of drugs and dyes. However, no facile detection method using UV-vis spectroscopy has been developed. Here, we have developed the brilliant green decorated graphene oxide (BGGO) for the detection of cucurbit[7]uril (CB[7]) with good selectivity and sensitivity. Thus, BGGO could able to detect the CB[7] and turn on the release of brilliant green quantitatively. Among the sensors for CB[7], BGGO is the low-cost and sensitive sensor for CB[7] with high selectivity.

Keywords: CB[7] sensor, graphene oxide, Brilliant green, Cucurbituril.
In this work, degradation of Ciprofloxacin has been studied over the catalyst Ag@Nd2WO6/ZnO (ANWZ) synthesized via hydrothermal method. The catalysts are characterized with techniques such as X-ray diffractometer, Scanning electron microscope with EDX spectroscopy and DRS- UV spectroscopy respectively. For the results shows, the PXRD spectroscopy was confirmed a phase purity and crystalline structure of the as-synthesized catalyst. The SEM results are explained about the morphology structure of the material, the structure spherical with nanorod like clustered morphology structure was shown in SEM and the reacting elements in the catalytic material are confirmed by EDX spectroscopy. And the DRS-UV spectroscopy technique is telling about the band energy value for prepared materials and also select the suitable way (i.e: Visible or UV light irradiation) for the degradation. The photocatalytic process, Ciprofloxacin (CIP) drug are degraded under visible light within 140 minutes and the degradation efficiency is 95.54%. The reusability test explains the efficiency and stability of the ANWZ catalyst and its stable up to the fifth run. Further, the photodegradation process, the catalyst is tested antibacterial activity study against Bacillus cereus and Escherichia Coli bacterial organisms. From the result, Bacillus bacteria contain more efficient antibacterial activity than that of E.coli bacteria.
are characterized by numerous spectroscopic techniques. Interestingly, the sheet-like Fe2V4O13 demonstrated proficient photocatalytic performances towards the reduction of Cr6+ into Cr3+. The obtained UV-visible spectroscopy results portrayed that sheet-like Fe2V4O13 could reduce above of Cr6+ solution within 40 min. Moreover, the sheet-like Fe2V4O13 holds very good stability even after five consecutive cycles. This study could open new insights for the design novel nanostructured binary metal oxides for environmental applications.

**Keyword:** Heavy metals, Photocatalyst, Fe2V4O13, photoreduction, Chromium.

**References:**


**Authors:** Sundaravel Balachandran, Stalindurai Kesavan, Arunpandi Pandi

**Paper Title:** Effect of Prosopis Juliflora on the Soil Fertility in Usilampatti zone, Tamil Nadu

**Abstract:** The invasion of Prosopis Juliflora in the tropical and sub-tropical ecosystems reached alarming condition because of their allelopathic nature and potential threat to the diversity. In this paper, the effect of Prosopis Juliflora on soil fertility in Usilampatti area is analysed. The concentration of macronutrients and micronutrients beneath and outside the Prosopis Juliflora canopy is studied and compared. The paper also explains the soil characteristics on the basis of the pH of the soil sample.

**Keyword:** Prosopis Juliflora, Invaded species, soil amelioration, biodiversity

**References:**

The seeds of Cicer arietinum were made into flour, cooked in different methods and analyzed for nutrient analysis via colorimetry. D. Geetha, M. S. Revathy, Gangadhara Angajala, P. Manorama, L. Sudha.


The electrochemical impedance studies of GNFC proved that such material can be useful for the anode material of the Li-ion batteries. The fast charge-discharge property may be due to the heteroarchitectures of the GNFC.

Graphene was blended with Nickel ferrite in the form of nanocomposite, which was prepared by solid state synthesis using tartaric acid as an activating agent. The nanocomposite was characterized by XRD, SEM, FTIR and UV Visible spectroscopy. Unlike the other composite materials, the Graphene – Nickel ferrite composite (GNFC) showed high specific reversible capacity, which has been studied by the cyclic voltammeter. The electrochemical impedance studies of GNFC proved that such material can be useful for the anode material of the Li-ion batteries. The fast charge-discharge property may be due to the heteroarchitectures of the GNFC.

Graphene, Nickel ferrite nanoparticles, electrochemical performance.

5. Y. Xiao, X. Li, J. Zai, K. Wang, Y. Gong, B. Li, Q. Han, and X. Qian. "CoFe2O4 - graphene nanocomposites synthesized through an ultrasonic method with enhanced performances as anode materials for Li-ion batteries", Nano-Micro Lett., vol. 6, September 2014, pp. 307-315.
14. Y. Xiao, X. Li, J. Zai, K. Wang, Y. Gong, B. Li, Q. Han, and X. Qian, "CoFe2O4-graphene nanocomposites synthesized through an ultrasonic method with enhanced performances as anode materials for Li-ion batteries", Nano-Micro Lett., vol. 6, October 2014, pp. 307-315.

The seeds of cicer arietinum were made into flour, cooked in a different methods and analyzed for phosphorous, phytin, ionic boron, iron and thiamin by standard methods.Nutritious values of cicer arietinum varies significantly when they cooked. Mode of cooking play a vital role in the determination of nutrition in food. Gram flour has significant amounts of niacin and thiamin and iron because it is its uncooked flour form.This flour have 280 mg/100g phosphorous, 1.6 mg/100g ionic boron, 0.357 mg/100g thiamin and...
4.7 mg/100g niacin. Thus, the flour may be used as value addition food which in turn increased nutrition in low cost.

**Keyword:** Microwave cooking; Thiamin; Niacin

**References:**

**Authors:** K.Viswanathan

**Paper Title:** Variation of Azimuth Angle Distribution of EAS, With Slope of the Detector Array Plane – A Examination by Semi-Montecarlo Simulation

**Abstract:** The azimuth angle distribution of EAS is expected, as Cosmic Rays are isotropic. It is seen that, if the plane of the detectors is not horizontal, the azimuth angle distribution becomes non-uniform. In such cases it is necessary to make proper correction for this non-uniformity, when one attempts to use the EAS data collected in such array, for source search. An attempt is made to correlate the extent of non-uniformity with the slope of the array plane, using simulation.

**Keyword:** Cosmic Rays, Azimuth angle distribution, Zenith angle distribution, Extensive Air Shower.

**References:**

**Authors:** P. Devendran, S. Ezhil Arasi, R. Ranjithkumar, C. Sambathkumar, V. Manirathinam, N. Nallimuthu, M. Krishna Kumar, A. Arivarasan, S. Asath Bahadur

**Paper Title:** Transition Hausmannite Nanoparticles Embedded on Uniform Carbon Micro Spheres Synthesis for Electrochemical Examination

**Abstract:** Carbon spheres wrapped by maghemite nanoparticles were synthesized through facile hydrothermal method. The structural parameters were analyzed through powder x-ray diffraction analysis. Functional groups were analyzed by Fourier transform infrared spectroscopic analysis. The prepared carbon spheres wrapped by maghemite nanoparticles morphology were investigated using scanning electron microscopic analysis. The elemental composition and distribution of elements were examined by energy dispersive spectroscopic technique with mapping. Redox property, charge discharge mechanism was done through cyclic voltammetry and galvanostatic charge-discharge studies.

**Keyword:** Maghemite nanoparticles, carbon spheres, hydrothermal, SEM, cyclic voltammetry, charge-discharge.
In this research work Zinc Sulphide nanoparticles are synthesized by co–precipitation method with zinc nitrate and sodium sulphide salts. The obtained particles are characterized to know its structure, crystalline pattern, crystalline size and other morphologies. The crystalline size of the material is calculated by Debye–Scherrer Formula. X–Ray Diffraction analysis, Scanning Electron Microscopy, Fourier Transform Optical Examination on Zinc Sulfide Nanoparticles for Photovoltaic Applications

Keywords: About four key words or phrases in alphabetical order, separated by commas.

References:
3. Salim Odah Mezan, Abdullah Hasan Jabbar, Maytham Qabel Hamzah, Alaa Nihad Tuama, Nabeel Nasiri Moghaddam, Synthesis of maghemite (Fe3O4) nanoparticles by thermal-decomposition of magnetite (Fe3O4) nanoparticles, Materials Science-Poland, 2013, 31(2) 264–268.

Authors: SHARMLI, P; REVATHY, S; RAJESH, M; VINAYAGAM, M; CHOKKALINGAM, R

Paper Title: Optical Examination on Zinc Sulphide Nanoparticles for Photovoltaic Applications

Abstract: In this research work Zinc Sulphide nanoparticles are synthesized by co–precipitation method with zinc nitrate and sodium sulphide salts. The obtained particles are characterized to know its structure, crystalline pattern, crystalline size and other morphologies. The crystalline size of the material is calculated by Debye–Scherrer Formula. X–Ray Diffraction analysis, Scanning Electron Microscopy, Fourier Transform Analysis and UV–Visible spectrum analysis is performed to study the mentioned morphology and properties of the material synthesized. The central point of this research work is to study the behavior of Zinc sulfide nanoparticles for solar cell applications. Hence, luminescence property of the material is finally analyzed.
Abstract: Blend polymer electrolytes based on PEO:PVP with various wt% of NH4SCN are prepared by simple solution casting method. The prepared polymer electrolytes are characterized using several techniques. The XRD studies confirm the amorphous and crystalline behavior of prepared BPEs. Functional groups present in the systems are confirmed by Fourier Transform Infrared spectroscopy (FTIR) studies. The electrical properties are analyzed by ac impedance technique. The maximum ionic conductivity is obtained for 20wt% of ammonium thiocyanate doped system and it is 1.81x10^-5 S/cm-1. The dielectric properties of polymer films are also studied and discussed.

Keyword: XRD, FTIR, AC Impedance, PEO:PVP, Dielectric analysis

References:

Authors: D. Sivaganes, S. Sasikumar, S. Saravanakumar, S. Asath Bahadur

Paper Title: Structural and Bonding Behavior Analysis of Microwave Sintered ZnO:Co materials

Abstract: In this present study, Zn1-xCoxO (x = 0.0, 0.04 & 0.06) samples were synthesized using conventional solid state sintering process and characterized by PXRD and SEM. The structural analysis was done using Rietveld profile refinement technique. The chemical bonding features and nature between Zn and O atoms was analyzed by charge distribution studies. The bonding between Zn and O is clearly visible in the three-dimensional and two-dimensional MEM maps. One-dimensional charge density distribution analysis clearly reveals the characteristics of the bond. MEM results were also correlated with the PXRD parameters.

Keyword: X-ray diffraction, Rietveld Refinement, Scanning charge microscopy, Charge density distribution.

References:
In this work, density functional theory calculations are performed to study Pure and Silicon doped boron carbide (BC3) as electrode material for alkali metal batteries. The structures of Pure and Silicon doped boron carbide (BC3) monolayer have been optimized using M06-2X/6-31+G*. Our calculations show that the energy gap of BC3 is significantly reduced due to doping with Si. The adsorption of Li+/Li+ and Na+/Na+ on Pure and Silicon doped BC3 are also investigated. Our adsorption energy calculations indicate that the Li/Na atom adsorbed on Pure and Silicon doped BC3 having high adsorption energy than Li/Na ion adsorbed on Pure and Silicon doped BC3. This is because of the smaller charge transfer in Li/Na ion adsorbed on monolayer compared to Li/Na atom adsorbed on monolayer. The calculated specific capacity values for Li+ adsorbed on Pure and Silicon doped BC3 are 215.77 mAh/g and 207.89 mAh/g while the Na+ adsorbed BC3 has specific capacity value to be 208.34 mAh/g and 200.98 mAh/g respectively. Since, Li+ adsorbed on BC3 has high Cp values than Na+ adsorbed on BC3, which shows that Li+ is suitable for charge storage application than Na+.
Abstract: Storage of water in copper vessels is traditionally followed in past and many reports have been published about the antibacterial growth in copper vessel. It is essential to determine the water purity for drinking purposes in daily life through low cost approach. In the present work an attempt has been made to investigate the effect of storage of different drinking water in copper vessel for two week. The corresponding values of pH and TDS meter for different waters were recorded and analyzed. The optical properties such as UV-Vis and Raman studies along with physio-chemical parameters like pH and TDS were analyzed for 3 weeks for different water sources kept in copper vessel. The Raman spectra provide information for different water sources. Similarly the UV-Vis spectroscopy provide the peak variation for different waters, however the effect of days and copper concentration analysis are in investigation. The Results obtained in this study reveals that water stored in copper vessel reduces the TDS level of bore water Tirunelveli and maintains its pH at 8.0 after 2 weeks. In 2nd week there is sudden decrease in TDS value from 1050 to 944ppm and pH level decreases to 8.3 showing alkaline nature. Throughout the experiment we have noticed that the colour of copper vessel changes in case of bore water. For variation in studies we have also studied the pH and TDS of Drinking water at Kalasalingam Academy of Research and Education. There is no change in colour of copper vessel and TDS and pH remains same up to one week, but in second week TDS increases to 100ppm while the pH remain constant at 7.4. These studies will help future researcher for designing of copper vessels and will help them to analyze the physicochemical studies of water. Moreover the chemical mechanism and reaction between copper vessel and leaching out of copper into water data base will be generated in future based on UV and Raman studies.

Keyword: copper vessels, pH, TDS, Bore water, Drinking water.

References:


Authors: Mahendiraprabu Ganesan, Selvaregan Paranthaman

Paper Title: UV Spectra of Glycolic Acid Derivatives – A Time-Dependant Density Functional Theory Examination

Abstract: One of the serious health issues faced by people throughout the world in recent years is Skin cancer, which is caused by harmful UV radiations from the sun. To protect the human skin from direct exposure to these ultraviolet radiations, preventive measures have to be taken and once such solution is the application of suitable and safer sunscreen. It is the need of the hour to develop better and harmless sunscreens to protect the skin. One such material which plays a major role in dermatology and cosmetics industry is Glycolic acid, CH2OHCOOH, a precursor of a-hydroxy carboxylic acids. Our present study is to find out if the glycolic acid conformers and its derivatives are capable of absorbing harmful radiations in the UVB and UVA ranges. To understand this property the UV absorption spectra is calculated using Time dependent functional density functional theory (TD-DFT). Further, our TD-DFT calculations have shown that o-Nitromandelic acid, a glycolic acid derivative shows absorption in both UVB and UVA regions. This indicates that o-Nitromandelic acid can be used as a UV filter in sunscreen lotions.

Keyword: UV filter, TD-DFT, Nitro mandelic acid, Glycolic acid derivatives.

References:
Abstract

Pure MnO2 nanorods were synthesized by hydrothermal method and characterized by different techniques to analyze their crystalline nature, surface morphology, functional groups, and optical properties. XRD analysis confirms that the prepared nanorods possess a tetragonal crystalline structure. The occurrence of nanorods was confirmed by SEM analysis and its elemental composition was studied by elemental mapping. MnO2 nanorods modified working electrode was fabricated by the deposition of nanorods on nickel foil. Electrochemical performance of the MnO2 nanorods modified working electrode was studied using redox additive based electrolyte containing 0.1M K4[Fe(CN)6] in 1M KOH solution. The maximum specific capacitance of the prepared nanorods in 1M KOH electrolyte was 89 Fg-1 and it is greatly enhanced by the addition of 0.1M K4[Fe(CN)6] redox additives (634 Fg-1).

Keyword: MnO2 nanorods, Supercapacitor, Redox–additive electrolyte.

References:
References:

Authors: P Sharmili, R Chokkalingam, M Mahendran, S Rahul Gorky, T Santhosh

Paper Title: Effect of magnetic field on Iron Oxide Nanoparticles suspended Magnetorheological fluid and its Viscous Properties

Abstract: Magnetorheological fluid is an admirable class of smart material. This fluid responds and adapts itself to the external magnetic field applied and hence, its rheological properties vary with respect to the field intensity. In this research work, Iron oxide nanoparticles are synthesized by co–precipitation method with ammonia as base reagent. Basic surface and size and magnetic field morphologies of the prepared particles are studied. Synthesized iron nanoparticles are used to prepare magnetorheological fluid. The rheological properties of the prepared fluid are studied to know about its viscosity and shearing stress-strain behavior.

Keyword: Magnetorheological fluid, Viscosity, Rheology.

References:

Authors: Suresh Sampathkumar, Selvaregan Paranthaman

Paper Title: Benchmarking Density Functionals on First Row Transition Metal Fluorides (ScF–MnF)

Abstract: In this work, we have assessed the performances of ten density functionals for the bond length, vibrational frequency and bond dissociation energy values of first row transition metal fluorides (TMFs). The selected density functionals are, TPSSh, B3LYP, B97, PBE0, b97X, b97X-D, M05, M05-2X, M06 and M06-2X respectively. The obtained results are in agreement with the previous experimental or theoretical results. From this study, it is found that the mean deviation in the metal-fluoride bond length is in the range of 0.01–0.06 Å and the mean deviation in the metal-fluoride bond energy is in the range of 0.16–0.74 eV. Based on this study, we suggest that the B3LYP, TPSSh, B97 and PBE0 functionals can produce good results for selected metal fluoride systems and will be recommended for the above systems.

295-297

298-303
Abstract: Energy demand is a major concern around the globe. The performances of supercapacitors depend mainly on the enhanced properties of electrode materials. In the present work, ZnO/NiO nanocomposite (NCS) was synthesized by a simple and facile citrate-based gel combustion procedure. The crystal structure and phase identification, surface morphology and functional groups of the samples were analyzed by X-ray diffraction (XRD) pattern, scanning electron microscope (SEM) and Fourier-transform infrared spectroscopy (FTIR), respectively. X-ray Diffraction pattern is observed that the crystalline peaks are broader and confirmed nanoparticles. The mean size of the particle is found to be ~25 nm. The prepared sample is analyzed for supercapacitive alternative energy devices. The performances of supercapacitors depend on various alternative and green energy devices. The maximum specific capacitance (Scp) is 450 Fg⁻¹.

Keywords: ZnO/NiO, gel combustion method, supercapacitors, XRD, FTIR, SEM.

References:

Authors: R. Packiaraj, K.S. Venkatesh, P. Devendran, S. Asath Bahadur, N. Nallamuthu

Paper Title: Gel Combustion Synthesis and Characterization of ZnO/NiO Nanocomposite for Supercapacitor Application

Page: 304-307

Authors: K.Gurusheankar, T.Theivashanthi, M.S.Revathy, Durgadevi

Paper Title: Synthesis and Characterization of MnFe2O4 Nanoparticles and its Electrochemical Performance Evaluated as Anode for Li-ion Battery Applications

Abstract: In the last decade, large number of research has been made to increase the capacity of anodes by changing the graphite with Si or Sn and conversion based materials such as MnFe2O4, Co3O4, Fe2O3 and NiO etc... In the present work, MnFe2O4 nanoparticles has synthesized by simple solid-state method. The crystal structure of MnFe2O4 evaluated by powder X-ray diffraction (XRD) and its morphology investigated by scanning electron microscopy (SEM), and its electrochemical performance has been carried out by cyclic voltammetry (CV), charge-discharge and electrochemical impedance analysis (EIS). The results of charge-discharge performance showed an excellent discharge capacity of 860 mA hg-1 when tested as anode for Li-ion battery applications.

Keyword: MnFe2O4, XRD, Cyclic Voltammetry

References:

Authors: S.Saravanakumar, S. Sasikumar, D. Sivaganes, R. Rajajeyaganth

Paper Title: Structural and Charge Density Properties of Manganese Sulfide

Abstract: Single phased Manganese Sulfide was analyzed by powder X-ray diffraction (PXRD) data sets with cubic structure. The simulated XRD data sets were used to analyze the structure of manganese sulfide. The powder profile refinements were done by Rietveld profile refinement technique. The refinement results were subjected to analyze the charge density analysis using structure factors. The chemical bonding nature between Mn and S were analyzed by charge density distribution studies through maximum entropy method. From MEM analysis, it found that the bonding between Mn and S atoms is ionic in nature.

Keyword: Rietveld refinement, bonding nature, crystal structure, maximum entropy method.

References:

Authors: G. Ramesh Pandi, B. Inayath Ahamed, A. Saravanan

Paper Title: Livelihood Security of Women Agricultural Labourers in Erode District of Tamilnadu

Abstract: The main aims of the study is to identify the socio-economic characteristics of women agricultural labourer, to identify the determinants linked with economic, food, health, edification and empowerment as dissimilar domains of livelihood security of women agricultural labourers and to estimate the determinants of livelihood security of women agricultural labourers in Erode District of Tamil Nadu. Methods/Statistical analysis: The research has curbed in to a sample of 140 women agricultural workers
households were selected from four villages of Bhavani taluk of Erode District in Tamil Nadu. A simple percentage analysis has been employed to identify the socio-economic characteristics and Multiple Regression equation method has fitted to the data to explore the effects of the explanatory variables on livelihood security of women agricultural labourers. Findings: Out of the 140 sample women agricultural labour households selected for the study, vast majority of the households registered as nuclear type of families; 52.86 percent with 2-4 members; 62.14 percent of the women agricultural workers were in the age cluster of 30 – 60 years; 33.57 percent of the respondents had education at secondary level; 33.57 percent labourers income falls in the income group of Rs.25000-Rs.50000/-; 45.00 percent of the households selected for the study were with the asset group valued beyond Rs.2.5 lakhs. There was positive relationship of the explanatory variables with composite livelihood security index of agricultural women workers. Conclusions: Government intervention through legislation, planning and implementation must be stepped up to provide greater opportunity for the sustainable development of women livelihood security at all levels, so that the discriminatory practices of women and the gender related issues against women would be addressed.

Keyword: Livelihood security, women, Agricultural workers, Livelihood Security Index

References:

Authors: P. Ramya, S.Rubby

Paper Title: Industrial Safety and Well-Being of Fireworks Employees in Sivakasi

Abstract: Fireworks industry is a very flourishing one in Virudhunagar District especially in Sivakasi. But in this industry, the employees are not given adequate safety measures for their safe working. In fireworks the employees have lot of risk on their safety and well being. There has been lot of health afflictions due to air quality. In fireworks industry, safety is most important for the employees. Officials of the state and central government organisation should help in implementation of safety system in fireworks units in Sivakasi to ensure misfortune free fireworks industry. So the study is referring to the main intention of to discover the safety measures in the fireworks industry. According to the factories act the safety instrument should be very important because the majority of the employees is very essential. In fireworks industry lot of fire disaster is happening this is a time to identify the safety materials and well-being of the employees. Because the researcher conducted survey in vijayarangapuram near Sivakasi. The total population 250 employees through this the researcher took 30 samples from the population. This study mainly focused on the employees safety and well-being. The majority people said they need more safety measures like gloves, face mask.

Keyword: Well being, Safety system, safe working

References:
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Authors: M. Suba, S. B. Inayath Ahamed

Paper Title: Green Human Resource Management -Significance of Managerial Support for the Successfulness of Ecological Management

Abstract: At present the most sensational discussion is about Ecological welfare because of the climate conditions and lot of studies is available in this particular area. The organizations are concentrating on ecological conditions and lot of studies is available in this particular area. The organizations are concentrating on ecological management to fulfill their ecological goal for that they are applying some techniques in their organization. For getting some improvement and positive result on this particular concerns we need to observe the employees green behavior so that this study examines the particular factors relevant to the green management and the important factors to achieve green targets.

Keyword: ecological management, green management, employee green behavior

References:


**Authors:** T.Premkumar, I. Siva, Sandro C Amico, J.T Winowlin Jappes
**Paper Title:** Dry Sliding Wear Of Intra-Layer Curaua/Basalt Polyester Composites under Varying PV Conditions
**Abstract:** An investigational analysis was conducted to study the effect of basalt/curaua hybrid composite focusing on wear properties. The hybrid composites are fabricated by resin transfer molding and the tests are conducted by pin on disk as per ASTM G99. Basalt/Curaua relative fiber weight percentage as 0/100, 40/60, 60/40, 100/0 are fabricated and analyzed for abrasion wear resistance. Specimens are tested for the load of 50N at 1 m/s using Pin on Disc wear testing machine by varying abrading distance. Worn out surfaces of the abraded composites are studied by using scanning electron microscopy (SEM) and Fourier transform infrared spectroscopy (FTIR). Roughness of the worn and pure surfaces is also accounted to measure significance of hybridization on tribological properties of the hybrid composites. Result shows that coefficient of friction is increasing in higher the curaua fiber in hybrid composites. Morphology evident the wear mechanism and internal compatibility of hybrid fibers.

**Keyword:** Basalt fiber, hybrid composite, dry sliding wear, SEM.

**References:**

**Authors:** Arun A P, Dhamoatharan S, Karthikeyan S, Rajini N
**Paper Title:** Optimization of Mould Base Production using Ranked Positional Weighted Method and Single Minute Exchange of Die System
**Abstract:** In the domain of intense global competition, the manufacturers are in need of producing different varieties of products. Successful manufacturing firms in the past have well produced the products based on the minimum amount of requirements in the market. This is so because of customer needs and economy rate is minimum in the past period of time. People like to use molded parts instead of using assembled component in the present days to survey in the market against competitors. So the manufacturer decides to produce a wide variety of mould bases for production and to satisfy the market needs. But the mould base manufacturing is not easier to produce the components to reach the market. It ought to be very much precise and devours more opportunity to produce the component by manufacturer to deliver that in an on-time to market. For this situation, the enterprise which produces distinctive mould bases needs to reduce the lead time is the major fundamental worry of the work. The primary target of this work is to decrease the setup time from 30 minutes to less than 20 minutes for each component. This cannot be accomplished without huge investment and to be versatile for manufacturing different mould parts. This needs special planning to manufacture different moulds. And the result obtained with the help of using Ranked Positional Weighted (RPW) method procedure for an entire
operation to calculate the critical path of production of components and also use the Single Minute Exchange Die (SMED) to optimize the setup time in an operation. Results of the research signifies the application of ranking an operation with suitable methodological approach to reduce the cycle time of the production of component to satisfy the market needs.

**Keyword:** RPW Method, Single Minute Exchange Die (SMED), Cycle Time, Lead Time.

**References:**

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**Authors:** S.S.Qarnain, S. Muthuvel, S. Bathrinath

**Paper Title:** Analyzing Energy Efficiency Factors of Residential Towers using fuzzy AHP: A case from India

**Abstract:** Increasing population, rising cost of energy bills and non-availability of housing land in cities has necessitated the need to build high rise residential towers for living purposes. As these towers are operational throughout the year, the energy consumed for maintenance and operation of such buildings is huge. Attaining building energy efficiency is a significant step towards conserving energy and minimizing the cost of utility bills. To achieve this factors that lead to energy efficient operations and maintenance of the residential towers must be found and prioritized. This research work is one such case study conducted on residential towers in South India, to find the energy efficiency factors in a building and prioritizing them according to their relative importance. The results showed that Building energy administration, energy Audits and Building Automation system are among the top factors that can highly influence the energy consumption pattern in a building. The Analysis is conducted using fuzzy AHP methodology and validated through sensitivity analysis. Further the paper also discusses the results and provides managerial application as a roadmap for energy efficiency in buildings.

**Keyword:** AHP, Energy efficiency, Residential tower.

**References:**


Authors: Rajesh S, Manivannan J, Chokkalingam R

Paper Title: Machinability Examination on Nylon-6 GFRP Composite with Abrasive Water Jet Machining

Abstract: This work is aimed to understand the influence of Abrasive Water Jet Machining parameter on surface roughness of the composites. Extrusion process is used to fabricate the Nylon 6 – GFRP composites. L27 orthogonal array is employed to conduct the experimental studies. Three levels and three parameter namely applied pressure; standoff distance and transverse feed are used to study the effect on surface roughness. Taguchi method is employed to determine the optimal combination of the machining parameter. The maximum applied pressure, low transverse speed and standoff distance is beneficial for reducing the surface roughness. ANOVA is also employed to determine the contribution of each process parameter on surface roughness and it is found that standoff distance plays important role in reducing the surface roughness followed by transverse speed and applied pressure.

Keyword: Nylon 6, GFRB, Extrusion, AWJM, Surface roughness.

References:
4. N Dayananda jawali, Sudideswarappa, Siddaramaiah, Physicomechanical Properties, Machinability, and Morphological Behavior of Short Glass Fiber-Reinforced Nylon 6 Composites”.


Paper Title: Biochar From Sugarcane Waste In Polymer Matrix Composite

Abstract: The present work focuses on development of new type composite using bio char as reinforcement. The bio char is derived from sugarcane waste when undergo pyrolysis process. Because of the growing demand for waste utilization development of bio char from such wastes proves to be a potential one for various applications. In this study focuses bio char reinforced saturated polyester resin for composite fabrication. The composites are prepared by solution dispersion method. Bio char of different weight percentages such as 5, 10 and 15% were reinforced polyester matrix for this taken study. The prepared specimens are subjected to tensile strength, flexural strength, hardness and impact strength.


References:

Authors: Raj Pradeesh T, Venkumar P, Saravanamani M

Paper Title: Hazard Identification using Risk Assessment for A Tyre Manufacturing Process

Abstract: Today’s industries play a major role to develop and create new innovation products in manufacturing domain. The aim of this project is to identify the hazards, assess the risk and its root cause and to develop a control measures so that the major and minor hazards can be controlled in the tyre manufacturing industry and the workers will be working in a hazard free and safety environment. Material handling is the biggest cause of reportable accident in rubber industry and also hit by moving objects, falling objects, Noise, Fire etc... This can be identified and controlled by using the technique called HIRARC. By using these techniques the risks can be identified and the best safety measures can be implemented in the industry

Keyword: HIRARC, Hazards, Risk Assessment, Tyre Industry

References:

Authors: Ashok Kumar B J, Muthuvel S

Paper Title: Oscillating Flows in Circular Pipes

Abstract: Pulsation flows in pipes heated externally produces oscillating temperature field. This type of unsteady flow happens in heat exchangers. Simulating this type of flows is complex in engineering. In this present study the field variables like velocity and temperature are calculated by numerical control volume scheme. Velocity pulsation is applied at inlet of pipe to produce oscillations. Simulation variables like lengths, diameter and thickness of the pipe are considered as parameters for this study. Also additional structural constraints has been added to see how it influences effective thermal stresses.

Keyword: Temperature, Velocity, Pressure, Oscillation.

References:
Abstract: Rolled Homogeneous Armour (RHA) steel is known as protective steel and it is utilized in a military vehicle. For example tanks, howitzers, heavily clad battle vehicles just as developments in armament. Weld quality straight forwardly decides the entire mechanical properties of the protective steel in vehicle body structures. Hybrid Optical Maser Arc welding (HOMAW) has a decent mechanical property and focal point of this exploration is considered to recover more energy than laser and Metal Active Gas Welding (MAGW) process. Manual Metal Arc Welding (MMAW) with low hydrogen ferritic filler (LHF) which performs better weldability on Armour steels with comparing MMAW with Austenitic stainless steel (ASS), and Flux cored arc welding (FCAW) with ASS/LHF. MMAW procedure is considered to reduce the expense through LHF consumable in workplace. The examination of MAGW method, a welding fringe of 540 V-narrow cut geometry has better mechanical property for tensile strength and also the welding narrow cut point of 480 X-trench cut geometry has better solution for compression strength of but-joint Armour steel. This survey was embraced to grant a top-level view of the various categories of welding process and mechanical properties in welding of RHA steels.

Keywords: Rolled homogeneous Armour steels, welding processes, mechanical properties.

References:


**Authors:** S. Muthuvelu, S. Ananthakrishnan, M. Muthukannan

**Paper Title:** Design and Fabrication of Ocean Water Pumping and Storage System

**Abstract:** Existence of fossil fuels in the near future is not promising because of their depletion at a faster rate and their limited availability. Further, owing to the global warming this energy has drawn global attention towards renewable energy resources. In such a scenario, wave power can cater the power needs of upcoming generations which is green and clean. Our objective is to develop a model which can be used for efficient conversion of wave energy into electrical power. In the present study the concept of buoyancy has been utilized to pump the ocean water and storing it at a higher elevation. From this elevation, the potential energy of water can be converted into kinetic energy for power generation. From the study undertaken, it is observed that the possibility of electricity generation by using this method and on conducting the experiment, it is observed that for a wave power of 150W, only 10% of the wave power has been converted and stored in the form of potential energy of water and the remaining unutilized wave power shows that there still exists scope for research work for improving the efficiency of extraction.

**Key Words:** Buoyancy, Efficiency, Potential Energy, Wave energy

**References:**


**Authors:** Roshan Kuruvila, S. Thirumalai Kumaran, M. Adam Khan

**Paper Title:** Solid Particle Erosion of Duplex Stainless Steel with and Without Nichrome Coating

**Abstract:** Premature failure of material is one of the major issues in most of the engineering applications. The material degradation may be due to many reasons. Erosion is one of the major contributors to this issue. In order to extend the life of the material the erosion has to be minimized. Atmospheric Plasma Coating is one of the effective methods of coating to minimize erosion. Studies have established that coating Nichrome can reduce the rate of erosion. In the present study erosion rate was calculated by varying the parameters like angle of impact, velocity and mass flow rate with the help of air-jet erosion test equipment. The erosion rates of coated and uncoated DSS were analyzed. Erosion rate was calculated on the weight loss. On analysis of the data it was established that coatings can reduce the rate of erosion.

**Key Words:** coatings, duplex steel, erosion, nichrome.

**References:**


**Authors:** S.Manikandan, K.Mayandi, N.Rajini, S.Rajesh

**Paper Title:** Finite Element Analysis of Bimetallic Layered Pressure Vessel using Ansys

**Abstract:** This paper work discusses about the effect of bimetallic layer on pressure vessel with different heads. The main objective of this paper work is to design and analysis of bimetallic layered pressure vessels using analysis software. In this work analyses about stress concentration factor on bimetallic layer of pressure vessels wall. The performance of the composite was analysed by measuring the surface roughness. Using Taguchi analysis, the value and ANSYS displacements value of bimetallic layers are compared. Based on the ANSYS analysis the displacement and value of ANSYS displacements value of bimetallic layers are compared. Based on the ANSYS analysis the better bimetallic layer is selected for pressure vessels fabrication.

**Keywords:** Design, ANSYS, Bimetallic layer, Pressure vessel, Displacement

**References:**

**Authors:** M. Uthayakumar, S. Vigneshwaran, K. Shankar, R. Balasubramani, R. Venkatesan

**Paper Title:** Examination of Surface Roughness on Abrasive Water Jet Machining of Carbon Epoxy Composite

**Abstract:** The main aim of this investigation is to study the surface roughness produced on abrasive water jet machining of the twill weaved carbon fibre reinforced epoxy composite. Abrasive water jet machining experiment was conducted as per L9 orthogonal array, by varying water pressure, transverse speed and SOD. The performance of the composite was analysed by measuring the surface roughness. Using Taguchi analysis, the influences of input parameter over the output response was analysed. It was found that the surface roughness is highly influenced by the transverse speed.

**Keywords:** Abrasive water jet machining, carbon fibre, epoxy, surface roughness.

**References:**

383-385
Abstract: The main aim of this investigation is to study the abrasive water jet machining performance of the twill woven carbon fibre reinforced epoxy composite. Abrasive water jet machining experiment was conducted as per L9 orthogonal array, by varying water pressure, transverse speed and SOD. The performance of the composite was analyzed by measuring the material removal rate and kerf. Using Taguchi analysis, the influences of input parameter over the output response was analyzed. It was found that the MRR is highly influenced by the transverse speed whereas kerf is highly influence by the SOD.

Keyword: Carbon fiber composite, Abrasive water jet machining, Kerf, Material removal rate.

References:

Abstract: A Blockchain is a shared ledger distributed across a business network. Blockchain is creating extraordinary opportunities for businesses to come together in new ways such as creating new values, optimize ecosystems and reduce risk. Using this Blockchain virtually anything of value can be tracked and traded, without requiring a central point of control. Blockchain is disrupting the supply chain industry the way they Technology are currently operating, in terms of overcoming issues with their operating layer, Document layer and Messaging layer. One of the objectives of the study was to identify the relevant blockchain use cases that can address the current pain points of various participants in the integrated supply chain process and the current operational and technical environment.

Supply chain costs can typically amount to 70% and holds the most levers for optimization. Gaining effective visibility and insights into the operations delivers significant and sustainable benefits. The assessment methodology focused around existing processes, technology & supply chain participant roles to establish common workflows across different participants, understanding of client’s pain points, operational inefficiencies and technology maturity. Post which came up with an “Industry Circle” to clearly articulate participants and their respective data exchange patterns to recommend optimizations.

Supply and replenishment patterns become long term strategies rather than short term operational tactics. With Blockchain enabled supply chain, bring in value in terms of full visibility, transparency, reduced time, security in the entire network (for example: components can be tracked from their manufacturing to finished product) and with Smart Contracts, SLAs executed automatically.

Keyword: Supply Chain, Manufacturing, Blockchain, Hyper Ledger Fabric, Permissioned Business Network.

References:
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2. Smartsupply: Smart Contract Based Validation for Supply Chain Blockchain, IEEE. DOI:10.1109/Cybermatics.2018.2018.00186
5. Paul Brody, “How Blockchain is revolutionizing supply chain”, EY Global Innovation Blockchain Leader
7. Zero to Blockchain, IBM Redbooks course
11. https://medium.com/patara/design-thinking-for-blockchains-ded1dcabe53
The Techniques Employed in Milling of CFRP to Reduce Material Damages

Abstract: Carbon fiber reinforced polymer composites are extensively used in aircraft industries because of high strength (load-bearing material). In application, machining process required near net shape for avoiding rejection of components and it is highly challenging and hard to produce good quality holes and surface. In this article, reviewing various techniques which involved to bring good surface finish in milling of CFRP composites and addresses machining parameters, tool geometry, material, coatings and environmental condition techniques. This current review work will be helpful for researchers to implement new advanced techniques to avoid material damages in their future work.

Keyword: CFRP, delamination, milling, surface roughness.

References:

Erosion Wear Characteristics on Aroma Skin and Biochar Filled Polyester Composites

Abstract: work focused on erosion behaviour of pure polyester, aroma skin (5wt%) and biochar (7.5wt%) reinforced polyester composites. The hand-layup method is used to develop the composite plate. To investigate the erosion wear rate of the developed composite plates, the sized specimen is subjected to erosion studies. As per ASTM G76 the erosion test was done with the help of air jet erosion tester. To study the parameters of different reinforcement, impingement angle and impact velocity of the fabricated specimen. The erosion behaviour of particulate reinforced polyester composites is evaluated at two different reinforcement (aroma skin and biochar) and three different wt% (0wt%, 5wt% and 7.5wt%) at varying impingement angles (30o, 45o, 60o and 75o) for regular time intervals. The standoff distance, impact velocity and erodent discharge rate were kept constant. Alumina oxide is used as erodent material with the size of 50µm. From the result, it is observed that increase in impingement angle increase the erosion rates. Another observation is made that addition of reinforcement in matrix material also shows increase in wear rate of composite. In comparison of both aroma skin and biochar reinforced polyester composites, biochar enhances the erosion resistance of composite in all impingement angles.

Keyword: Aroma skin, Biochar, Polyester resin, Hand-layup, Erosion wear.
References:

Authors: Sivaram,S, Chella Ganesh,D, Adamkhan,M

Paper Title: Right First Time Improvement in Ageco Mexico Pdi – Dmaic Method

Abstract: Tractors / Units which are reaching to the Dealer end from the plant after passing the mandatory checks & Inspection. The Quality requirement involves various elements process, people, material, resources and logistics which is more important to meet the customer satisfaction. The feedbacks are received in terms of pre delivery inspection (PDI) observations from AGCO Mexico team. The adequacy and adherence are to be strengthened from receipt to dispatch / transit of end product till dealer point at Mexico. The sustainable actions are initiated using the RCA and problem solving tools and 6 sigma tools to reduce the variance at various stages of manufacturing plant and transit. Quick wins are implemented for the single cause issues as well as low cost actionable issues. Hence the desired enhancement of Right first time (RFT) at dealer / Mexico can be achieved which is under progress. Pre-Delivery inspection (PDI) is process of checking the units before dispatch to the requested customer when the time of sale. Basically it is a Check sheet kind of documents which carried by a specially qualified engineers. They are basically check all functional parameters of the tractors and cross examine the aesthetics of the products based on customers’ expectations.

PDI will vary from product to product and classified based on the features inbuilt in the units, but essentially a complete and thorough examination of every aspect of the tractor which basically exterior panels to the interior, mechanical parts and electrical functions. A complete road test is also included by a professional driver, and if there by any minor issues, that will be fixed immediately before given to customers.

Customer satisfaction is the key playing a biggest role in now a day’s business and is the key to sustain in the market. It is one of the leading indicator to evaluate customer loyalty, identify unhappy customers, reduce churn and increase business revenue. It is a main difference that helps us to grasp new business and customers in very competitive environments. This will give on positive sign for customer centric approach to sustain in the business in long term.

Keyword: RCA, DMAIC Approach, Lean Implementations

References:

Authors: T. Sivageerthi, S. Bathrinath, S. Sarvanasankar

Paper Title: Identification of Essential Elements in Maintaining Efficient Boiler System of a Coal Fired Thermal Power Plant

Abstract: Electric power is most inevitable one among the other sources of energy. It plays prime role in all developed and developing countries. More than eighty percentage of the electric power are generated from coal fired thermal power plants, in it the thermal energy available in coal is released by firing inside the boiler and transferred to water to generate the super-heated steam. All the released thermal energy inside the boiler cannot be transferred in to the water. Some percentage of heat energy gets lost to the environment without any beneficial uses. If the boiler maintains and operates in correct way, the losses can be minimized and efficiency can be improved. There are so many enablers to efficiently manage the boiler in both maintenance and operation...
point of view. By using ISM (Interpretive structural modeling) method, identified the relationships of enabler and they are weak in the interpretation of enabler links. To control this, TISM (Total interpretive structural modeling) is used in this paper and it is a modeling with qualitative technique. For the enablers of boiler system, this method is very useful for creating the performance model in structural form. In addition to this, the interaction between all elements of enablers can be easily identified by developed structural model of this methodology. If most important enablers which influence the efficiency of the boiler is concentrates is very easy to maintain designed efficiency of boiler. This work is narrated in this article.

**Keyword:** Boiler system, DM water, TISM.

**References:**


**Authors:** Armstrong, M, Sivasubramanian, M

**Paper Title:** Experimental Examination over heat Exchanging Capacity in the Hollow Pipe Incorporated with Corrugated Copper Plate Dividend and Baffles

**Abstract:** Heat exchanging devices produce an outstanding part in numerous engineering applications. Because of this, a varied sort of researches are undertaking to decrease the size and cost of the heat transfer equipment with high performance by indulging in diverse invaluable works similar to changing its design, incorporating corrugated structures with different dimension with different flow configurations. In this work, the design of double pipe heat exchanger had been modified similar to the plate type model with the incorporation of a corrugated copper plate which separates the hot and cold fluid inside the SS304 material tube. Three baffles at the top and two baffles at the bottom of the plate have been placed to reduce the velocity and heat interaction timing of the fluids. This could enhance the surface area of the plate and point of contact between the plate surface and fluid particle flowing over the plate surface. The experiment had been undergone with the parameters like engendering the flow arrangements of hot and cold fluid in counter current direction, hot fluid in the three sided baffle at the top and cold fluid at the two sided baffle at the bottom. This allowed liquids of differing thermodynamic equilibrium to interact, bringing about thermal transfer to calculate its maximum efficiency. In addition to these factors, the heat exchanging performance has been estimated with the heat transfer coefficient using LMTD method gave 8-10% enhancement in the overall heat transfer coefficient with respect to the mass flow rate.

**Keyword:** Heat Exchanger design, Corrugated Copper plate, SS304 Pipe, Heat transfer coefficient

**References:**


Authors: K. P. Dayana, A. Joseph Xavier, J. Pradeepkandhasamy

Paper Title: Footprint of Online Booking in Hotel Industry

Abstract: The present study “Footprint of Online Booking in Hotel Industry” is systematic and experiential in nature. The research depends on the examination observed through suitable sampling techniques among the customers preferring the classes of hotels for convenience. The facts have been composed through a planned interview schedule, equipped by the investigator. It contains matters related to demographic profile, socio economic records, customer particulars and impact of hotels on Lack of knowledge regarding improvement in the hotel sector, Overall Online infrastructure of hotels, How to handle the computers for the process of booking through online ,Identify the price fluctuations for different category hotels on each item, Implementation on Online booking. . The outcome of the cram prove that the enumerated value is greater than both the table values the H0 is rejected. Hence there is a correlation association among the Lack of knowledge regarding improvement in the hotel sector, Overall Online infrastructure of Hotels, How to handle the computers for the process of booking through online, Identify the price fluctuations for different category hotels on each item, Implementation on Online booking.

Keyword: Customers, correlation, Hotel, online infrastructure.

References:
Authors: M. Raja, S. Dhanasekaran, C. Bala Subramanian

Paper Title: Contactless Detection of Heartbeat and Cardiopulmonary Modeling using Vector Analyzer

Abstract: Now a days, Modern world makes it difficult for some individuals to care for their health. Urban air pollution, employment pressure, and an uneven diet increase a person's likelihood of being infected. In practice, until serious things, some of the infections would not provoke any symptoms. Heart rate (HR) is a measure of physiological activity. This article introduces contactless heartbeat detection and cardiopulmonary modeling. Our suggested microwave system uses a vector network analyzer to demonstrate the potential to detect the heartbeat signal at distinguishable frequency ranges and at distinct output energy concentrations. The model comprising the heartbeat and breathing signals are provided based on variables obtained from actual measurements. To separate the heartbeat and breathing signals, various processing methods are used. For separate signal-to noise ratios, wavelet filters possess greater accuracy over standard filters in order to determine heart rate and heart rate variation.

Keyword: coronary heart disease, Ultra-Wideband (UWB) radar, Doppler hypothesis

References:

Authors: Shanmugasundaram Palanimalai, R. Velusamy, P. Vijaykumar

Paper Title: Major Big Data Challenges in Most Industries and Innovative Solutions

Abstract: The term “Big data” refers to “the high volume of data sets that are relatively complex in nature and having challenges in processing and analyzing the data using conventional database management tools”. In the digital universe, the data volume and variety that, we deal today have grown up massively from different sources such as Business Informatics, Social-Media Networks, Images from High Definition TV, data from Mobile Networks, Banking data from ATM Machines, Genomics and GPS Trails, Telemetry from automobiles, Meteorology, Financial market data etc. Data Scientists confirm that 80% of the data that we have gathered today are in unstructured format, i.e. in the form of images, pixel data, Videos, geo-spatial data, PDF files etc. Because of the massive growth of data and its different formats, organizations are having multiple challenges in capturing, storing, mining, analyzing, and visualizing the Big data. This paper aims to exemplify the key challenges faced by most organizations and the significance of implementing the emerging Big data techniques for effective extraction of business intelligence to make better and faster decisions.

Keyword: Big Data, Hadoop, HDF5, MapReduce, No-SQL

References:
Kidney failure is a condition where the function of kidney gets disabled. In order to sustain in life, dialysis is predominantly adopted. The dialysis is a technical replacement of function of kidney and it is of two types. In considering the long term blood filtering process, the hemodialysis is predominantly adopted. The dialysis is a technical replacement of function of kidney and it is of two types.

In order to enhance their features, the chambered dialysate technology and different dialysis devices are implemented for safety measures. In focusing towards the portable devices, the battery backup has been applied in this device which can perform patient dialysis in transferable conditions.

The next frontier for innovation, competition, and productivity.

The current state of peritoneal dialysis.

In order to perform patient dialysis in transferable conditions.

In the Far East.

An Introduction to Info Streams: Analyzing Big data in motion.

A community white paper developed by A community white paper developed by a Analytics.


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Authors: Saktivel Sankaran, Vishnuvarthan Govindaraj, M Pallikonda Rajasekaran, Mohamed Mydeen

Paper Title: Design and Development of the Novel Technology for the Treatment of Patients with the Acute and Chronic Renal Failure

Abstract: Kidney failure is a condition where the function of kidney gets disabled. In order to sustain in life, dialysis is predominantly adopted. The dialysis is a technical replacement of function of kidney and it is of two types. In considering the long term blood filtering process, the hemodialysis will be an efficient device in replacing the renal functioning but it was currently performed in the stationary mode. In order to fulfill the life supporting requirement, the “Miniaturized portable hemodialysis” device has been introduced which will be portable than the conventional ones. In order to enhance their features, the chambered dialysate technology and the specialized filtering mechanism has been fabricated to this project device. In the process of rectifying the technical errors, sensor indications are implemented for safety measures. In focusing towards the portable mechanism, the battery backup has been applied in this device which can perform patient dialysis in transferable mode.

Keyword: Miniaturization, portable, transportable, sensors, hemodialysis.

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Authors: Rajajeyaganthan Ramanathan, Albin Aloysius, Auxilia Christy, Noreen Anthony, Gangadhara Angajala

Paper Title: Calcium D-Pantothenate as Green Corrosion Inhibitor on Mild Steel in 240 ppm NaCl Solution

Abstract: Corrosion inhibition of mild steel in 240 ppm NaCl solution using Calcium D-Pantothenate (Vitamin B5) as corrosion inhibitor is studied using electrochemical impedance, potentiodynamic polarization and weight loss studies. From the potentiodynamic polarization studies, icorr (corrosion current density) decreases with increasing the concentration of vitamin B5(VB5). The CR (corrosion rate) decreases and the IE (inhibition efficiency) of VB5 increases on increasing the concentration of VB5. Surface investigation using SEM, EDX spectra, UV-Vis, FTIR, electrochemical impedance, potentiodynamic polarization and adsorption isotherm parameter of VB5in 240 ppm NaCl solution shows that VB5 can act asworthy corrosion inhibitors. Quantum chemical data obtained from density functional theory (DFT) calculations also agreed with the experimental outcomes.

Keyword: Pantothenic acid, Electrochemical impedance spectroscopy, Vitamin B5, Mild steel, Potentiodynamic polarization

References:
9. 435-442


**Authors:** K. Selvakumar, V. Ramani, K. Thirumalai, A. Arun, M. Swaminathan

**Paper Title:** Photocatalytic efficiency of Ho2O3-ED-HPV in Bisphenol-A Removal

**Abstract:** Hydrothermally synthesized Ho2O3-ED-HPV was characterized by DRS-UV, FT-IR, SEM and EDAX analysis. Catalyst surface has clustered microsponge-like structure with more number of cavities. To investigate the catalytic properties of Ho2O3-ED-HPV nanoparticles, the photodecomposition of bisphenol-A with ultraviolet light was performed.

**Keywords:** Bisphenol-A, Heteropoly acid, Ho2O3-ED-HPV, Photocatalyst.

**References:**


30. S.J. Liang, R.W. Liang, L.R. Wen, R.S. Yuan, L. Wu, X.X. Fu, cationic pollutants by the selective adsorption on visible light-
31. vanadium-51 NMR characterization of isopolymetalates

Authors: P. Ramakrishnan
Paper Title: Production and Marketing of Bricks in Srivillipputtur
Abstract: It is estimated that India has more than 1,000,000 brick kilns producing about 250 billion bricks annually, employing about 15 million workers and consuming about 35 million tons of coal annually. The brick industry is growing as the demand for bricks is increasing in the towns and villages due to the fast economic growth, urbanization and prosperity. It is alarming to note that 300 mm depth of fertile top soil in India will be consumed for burnt clay brick production in about 60 years. Usually, brick kilns are situated in rural and or periphery of urban areas in the country. The secondary industry is collected for the purpose of knowing history of brick industry in world and especially in India. It is found that the process of making a brick has not changed much over the centuries or across geographies. The brick sector in India is unorganized and is tremendous in size and spread. India is the second largest brick producer (China dominates with 54 % share) in the world. The brick industries have challenges like rapid increase in brick production, environmental concerns, use of large quantities of coal in brick kilns, use of good quality agriculture topsoil for brick production, shortage of workers, Increased competition etc. There is need to prepare action plan for sustainable development of Brick industry in India.

Keyword: Bricks, manufacturer, Production, Tractor, color
References:
5. Website:

Authors: K. Ravindran, V. Sathyamoorthy
Paper Title: Impact of Digital Marketing on Consumer Purchase Decision
Abstract: promoting is a trifling exchange of goods and services for cost but advertising and marketing is the phenomenon that allows keeping clients other than attracting them. Within the gift era among the numerous modes of marketing, digital marketing occurs to g
102.
25. “Facile and green synthesis of (La0.95Eu0.05)2O2S red type of precursor: controlled hydrothermal processing, phase Advanced Materials, 15 (1-9) (2014) pp. 014204.
30. S.J. Liang, R.W. Liang, L.R. Wen, R.S. Yuan, L. Wu, X.X. Fu, cationic pollutants by the selective adsorption on visible light-
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References:
5. Website:

Authors: K. Ravindran, V. Sathyamoorthy
Paper Title: Impact of Digital Marketing on Consumer Purchase Decision
Abstract: promoting is a trifling exchange of goods and services for cost but advertising and marketing is the phenomenon that allows keeping clients other than attracting them. Within the gift era among the numerous modes of marketing, digital marketing occurs to generate the maximum fee. It could be as the mechanism of reaching consumers through the use of diverse virtual distribution channels. The present observes believes to observe the effect of digital marketing and advertising on client purchase conduct and additionally makes an attempt to investigate as to in what ways are the clients absolutely privy to the diverse digital marketing and advertising mediums inside the gift digital generation. The look at is primarily based on the survey method. A questionnaire is prepared and covered 786 respondents for evaluation. The effects of the look at discovered the information that the purchasers are privy to the digital mediums available to them. It also confirmed the results that most of the customers opt to shop online due to its ease of use and in your price range mode of buying. Because of the technological upliftment in the gift generation, digital mediums and digital marketing are gaining significance and is enormously prevalent via each stratum of the society.

Keyword: Digital marketing, buy behavior, clients Medium
References:
### Authors: G. Thamaraisolvi

**Paper Title:** A Gap Analysis on Awareness and Utilization of Social Media Banking – The New Line of Self Service Banking

**Abstract:** Today the scenario has changed from geographically-based community to electronically-based one. For all kinds of banking transactions, the users of social media can be very well targeted. In Internet Banking, there are three basic kinds like informational level, communicative level and finally the transactional level. All the banks in India have already gone through the first two levels and all of them are in the transactional level as far as the Net Banking is concerned. This study stepped to know the gap between the awareness and utilisation of social media banking services. It is found that there is a wide gap between the awareness and utilisation of various services of Social Media Banking by the users.

**References:**

### Authors: S. Karthik, R. Selvakumar

**Paper Title:** Customer satisfaction towards Hyundai Car in Virudhunagar District

**Abstract:** The Indian automobile business became the fourth largest within the world. Hyundai is among the only a few automotive manufacturers to know the Indian automotive market well. It’s the second largest automobile manufacturer with 16.2 percent market share in February 2019. Customer choice process is a complex phenomenon. Making a decision to buy a product or services involves many processes. The researcher has made an attempt to identify the brand preference of Hyundai cars in the study area and to examine customer satisfaction. This study includes the ways of getting awareness about Hyundai cars, the factors influencing the buying decision of the customers and the level of satisfaction towards these Hyundai cars. In order to analyze the level of satisfaction of customers towards Hyundai car, ranking method is used by calculating weighted average score for the each influencing factor. With regard to after sale service, interior decoration and Air cooler facility, the customers are dissatisfied with these factors. On the other positive side, Most of the customers are very much satisfied with the style/color, safety, engine performance and driving comfort.

**Keyword:** Hyundai car, customer satisfaction, factors, After sales service.

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### Authors: G. Thamaraisolvi

**Paper Title:** Customers’ Attitude towards Shopping at Home

**Abstract:** Traditional marketing, sellers meet the difficulty to reach a wide of customers in world wide. Now it was changed, there is an easy way to reach the customer is internet. Both buyers and sellers from world meet together and exchange their products at minimum of amount. It is an ease way of marketing. The aim of this study is to study customers’ preference towards online websites and also preferred products to shop online and also to identify the satisfaction level of customers towards online shopping. In case of eatables, people don’t
want to take risk regarding their health. Likewise, they don’t have much interest to buy vegetables from online compared with offline shopping. This is due to lack of bargaining of price. Most of the online shoppers dissatisfied with the privacy of data due to some recent issues. These are lessons to the online service providers to create awareness among people about their business. It helps to motivate them to buy from their websites. Moreover, people also should more conscious while shopping.

**Keyword:** Online Marketing, Online Shopping, Electronic Marketing, Customers’ Satisfaction, Online Websites

**References:**

**Authors:** P. Ramakrishnan

**Paper Title:** An Examination on Production and Marketing of Cotton in Srivilliputtur Taluk

**Abstract:** Agriculture to-day occupies a very important and unique place in the economy of India. It promotes rural employment, income level and enhances the socioeconomic status of the farmers. In short, agriculture in India not only decides the economy of the country but also determines its Industrial development. There are many kinds of agricultural products produced in India like Cotton, Paddy, Wheat, and Sugarcane etc. Agricultural marketing involves many operations and processes through which the food and raw materials move from the farm to the final consumers. Hence the researcher is intended to identify the existing and emerging prospects in cultivation and production of Cotton in Srivilliputtur Taluk as well as to analyze the emanated and enlarging problems in marketing of Cotton to arrive at appropriate authentication and respective rejuvenation.

**Keyword:** Agriculture, Cotton, manufacturer, marketing, Cultivation

**References:**

**Authors:** S. B. Inayath Ahamed

**Paper Title:** An Empirical Research on the Problems and Prospects Perceived by the Small Scale Entrepreneurs in Salem District

**Abstract:** Small-scale entrepreneurs in Tamil Nadu, especially in Salem district, produce an enormous variety of products which include mass consumption goods, readymade garments, hosiery goods, electrical products, handlooms and handicrafts. The contribution of small industries in these areas to the balanced regional development of whole state as well as the country is noteworthy. This study is confined to small-scale industries which are located in Salem District of Tamil Nadu, India. Since, the objective of this study is to analyze the problem and prospects of the small-scale entrepreneurs in the study area covering a period of ten years from 2001-2002 to 2011-2012, the findings of the study will be useful for the entrepreneurs who are engaged in small-scale industries for further development and progress of their establishments and thereby growth of the economy. The research will also be useful for the academicians and policy makers.

**Keyword:** Small Scale Entrepreneurs, Salem District, Entrepreneurship, Problems of entrepreneur.

**References:**
Authors: Chandrasekar Thangavelu, Jawahar Rani Kanagasahabapathi

Paper Title: Expectation of Online and Offline Shopping and its Impact towards Customer Purchase Intention

Abstract: In this digital era the people are fulfilling and satisfying their needs and wants by various modes of purchase process. The technological growth has made Man move towards simple and innovative way for choosing their basic needs in the market. Enormous numbers of choices are available in the market for customers, specially, offline and online shopping. All the industries have been developing the marketing strategy in an innovative way and also strategy of approaching customer for their business growth. After the growth of internet, most of the ecommerce businesses have developed in the market. Even offline shopping channels have also changed their pattern of marketing their products and services. In this article we are briefly analyzing about the factors influencing the online and offline shopping and purchase intention of customer. The expectation of online and offline shopping customers are analyzed for identifying the factors influencing the customer which makes them to take decision towards their shopping.

Keyword: Online / offline Shopping, Customer, Technology, Consumer behavior

References:

Abstract: The aim of this study is to find out the factors underlying a SHRM practice which promotes organization effectiveness by studying the implication and existence of SHRM practices in the firm and analyzing the impact of HR strategy on achieving organizational effectiveness in the firm. Both primary and secondary data was used in the process of carrying out the study. In order to collect the primary data, a well-formulated questionnaire was circulated and personal interviews were carried out with the employees in the firm. Secondary data was collected from the firm’s employee manual, HRM reports, and HR journals. All the 30 (sample size) officials from top management and few line managers from the firm (stationed at Tuticorin) are the respondents for the study. Judgemnetal sampling was used. Percentage and Correlation method was used for the analysis. Forty-three percent employees feel that the CSR activities carried out in the firm has been influenced by the incorporation of SHRM in the management. More attention can be given on carrying out CSR activities effectively. Job rotation and flexible schedules can be carried out to improve the employees’ progress. The management should ensure that the functional managers should work in close co-ordination with the HR managers rather than allowing it to work isolated. This will ensure that, the HR practices are carried out without deviating from the HRM policy of the company.

Keyword: Driving Forces, Effectiveness, HR strategy, SHRM practices

References:
References:


References:

Abstract: The study examined the existing literature on Organisational Citizenship Behaviour (OCB) and its associated variables through social network analysis using Gephi. A sample of 22 recent research articles related to OCB and the variables and constructs used in those studies have been selected for network analysis to identify the major influencing variables and to identify possible research gaps to formulate a conceptual model for further research. GEPHI 0.9.2 and NodeXL graph softwares were used for the network analysis to enable easy visualisation of the links between the variables. The result shows that OCB and commitment, OCB and Job satisfaction, OCB and empowerment were most examined however, the most prominent variables altruism, conscientiousness, sportsmanship that form a part of the OCB have not been used.

Keywords: organisational citizenship behaviour, Network analysis, Graph Theory.

References:
22. Zahra Gholami, Javad Abdedi Soltanahmadi, Ghasem Pashavi and Sedigheh Nekouei. (2013).” Empowerment as a Basic Step in Upgrading Organizational Commitment and Organizational Citizenship Behaviors: A Case Study on Public Sector in Iran” World Applied Sciences
Achieving Energy Efficiency in Office Buildings plays a key role in reducing the Environmental Impact of Buildings to a larger extent. The Users in the workplace are often affected by the improper design of HVAC systems. In most of the office buildings the Indoor Environmental conditions were not designed, controlled and maintained which in turn increases the Energy cost of the buildings. Sustainable Design of HVAC Systems includes all the mechanical equipments that efficiently controls, monitors and supplies the Indoor Air. The objective of this paper is to (i) Do a comparative study and analyses the various building Envelope in office buildings for reducing the Energy Cost in designing HVAC systems in Office buildings using Ecotect Modelling.(ii) To compare the Energy cost of Water Cooled Screw Chillers and VRF Systems.

The above experimentation was held in ELCOT S office building in salem. The findings of this paper revealed that usage of Porotherm wall construction along with VRF SYSTEMS in office buildings found to be effective in achieving sustainable HVAC design.

**Keyword:** Energy Efficient Building Envelope, HVAC, Water Chiller, VRF(Variable Refrigerant Flow)

**References:**
1. HVAC systems design handbook/Roger W.Haines, C.Lewis Wilson.
2. HVAC and the Building: Siemene Twins (An integrated design approach) Hugo Hens - HVAC&R Research - 1995

**Authors:** Ar. P. Kalaivani

**Paper Title:** Cost Control Methods for Efficient HVAC in Office Building
Abstract: Tactile Surfaces are used by visually impaired people globally as an assistive tool for tactile cues from the environment for their mobility. Tactile Ground Surface Indicators (TGG) or Tactile Walking Surface Indicators (TWSI) are used in many countries for visually impaired as a standard tool for enabling a barrier-free environment. TGSI enable people with all types of visual impairment to wayfind, orient and detect hazard in the built environment. The purpose of this study is to find the challenges faced by the installation of tactile ground surface indicators and the challenges faced by visually impaired globally. This paper attempts to review the relevant literature based on both installations of tactile ground surface indicators and the issues faced by the visually impaired in many countries. The literature review shows that the visually impaired face challenges of wayfinding, orientation, and hazard warning in many countries because of the absence of standardized design of size, texture, color and installation protocol of TGSI. Maintenance of TGSI is an issue in many countries which causes confusion and discomfort to visually impaired.

Keyword: Orientation, Tactile Ground Surface Indicators, Tactile Walking Surface Indicators, Visually impaired, Wayfinding

References:
Developing cities and its opportunities have become a global attraction, inviting the rural population into urban area. This rate of increase in population and overbuilt roadways have outgrown the possibility of shaping our city and making it accessible for all. It is important to note that connecting various parts of the city, giving life to the streets are vital for the livability of any city. Energy efficient modes of transportation, combining trips or travelling less by adapting transit oriented development can enhance the environmental quality and quality of life. Therefore it is important to understand the benefit of sustainable transportation system and its role in developing a sustainable environment.

**Keywords**: Developing city, Sustainable transportation, energy efficient, quality of life, sustainable environment

**References**:
7. Camagni, R., Gibelli, M.C., Rigamonti, P., 2002, Urban mobility and urban form: the social and environmental costs of different patterns of urban expansion. Ecol. Econ. 40 (2)
9. Sudhakar Yedla, Ram M. Shrestha, Multi-criteria approach for the selection of alterna tive options for environmentally sustainable transport system in Delhi
10. Christy Miho Eeon and Adjo Amekudzi, Addressing Sustainability in Transportation Systems: Definitions, Indicators, and Metrics

**Authors**: Vinu Pandyan Lakshmanan, N. Lakshmi Thilagam

**Abstract**: As known, Temple cities were originally developed by Traditional societies. These cities are famous for its Heritage, tradition and Culture. Its mighty hierarchical system of Societal Stratification and power controlled the City’s expanse, Economy and few other areas segment wise. Because of the limitations in land area, the community strength was controlled. Unanimity of Physical Planning process was partial and was only limited to a set of favored groups, based on occupation. This was due to the structural construct of the traditional urbanism. Due to which, there was a socio-economic inequality in the society. As a result, the life expectations of the marginalized sector and the deprived remain inadequate and unknown. This has led to the social exclusion of this disadvantaged group of communities since ages. As a continuum, it has a possibility to change the Quality of Life [QOL], of these groups in these cities forever. In this context, having an exaggerated sense of self-importance on the subjective, “Cultural Heritage” in today’s scenario, can only cater a segment of society. It has the possibility of leaving the Urban Planning process into a social bias. This seems to be factual for the city of Madurai. As the city grows, there has to be an exhaustive and detailed study on the aspects of cultural attributes, lineage, land distribution, population etc. So, today, in the midst of many serious efforts by the government to resolve such fundamental issues of inequalities, there lies a gap still unresolved, leaving out to ambiguity. Hence, the Urban planning process and initiatives at these places, needs a closer look and should be carefully handled based on the growth patterns. The recent governmental initiatives, policies, Planning and implementation are focusing on “Smartness” of the city, to ensure sustainable growth. Participation levels of the common public, especially the so-called are subjective matters here in this case. Access and authenticity of governmental digital data, transparency and fair means of electronic governance is needed. The city needs a better approach and a fresh perspective for its Planning methods for a sustainable growth. This paper discusses the idea behind the social conditions of the people of such groups in traditional cities as an extension of the hegemony of the past, in today’s scenario. Also, it highlights the existing proposal and missing link of the same with reference to the social aspects of Madurai city.

**Keywords**: Traditional urbanism, e-governance, Social inequalities, Smart city, marginal sector, ICT, big data

**References**:
1. India’s Smart Cities Mission: Smart for Whom? Cities for Whom? [Update 2018], Housing and Land Rights Network, New Delhi, 2018
Optimisation of AWJM Process Parameters for Machining Granite using PCA Methodology

Authors: Lingaraj N, S K Rajesh Kanna, P Sivasankar, Ilayaperumal K, Akash C

Abstract: In Abrasive water jet machining, abrasive particles along with high pressure water are used to intrude on the work materials ranges from soft to hard materials using high velocity jet. The process parameters considered in this research for machining the granite are pressure, standoff-distance and cut quality. Experimental investigation had been carried out, in order to identify the impact of varying the input machining parameters on the results like kerf angle, material removal rate and roughness of the machined surface. In this study, Taguchi’s Multi response technique namely principal component analysis had been used to optimize the input parameters of the abrasive jet machine to obtain the desired outcome on granite work piece and also to foresee the best optimal input machining values of abrasive jet machining such as pressure, standoff-distance and cut quality. For each sequence of Taguchi L9 orthogonal array, sufficient number of experimental runs were carried out. Then with the help of principal component analysis, optimal process parameters that influence the granitic machining characteristics have identified and to validate the experimentation, confirmation tests also been carried out. Then with the help of principal component analysis, optimal process parameters that influence the granitic machining characteristics have identified and to validate the experimentation, confirmation tests also been carried out. Then with the help of principal component analysis, optimal process parameters that influence the granitic machining characteristics have identified and to validate the experimentation, confirmation tests also been carried out. Then with the help of principal component analysis, optimal process parameters that influence the granitic machining characteristics have identified and to validate the experimentation, confirmation tests also been carried out.

Keyword: AWJM, Taguchi’s Multi response Method, ANOVA, PCA.

References:
Aluminium metal matrix composites

Fabrication of Al/Al2O3 Composite


K. Umanath, Analysis of dry sliding wear Behaviour of Al6061/SiC/Al2O3 hybrid metal matrix composites. Material Science Journal Bharath University, Chennai, India


References:


3. K. Umanath, Analysis of dry sliding wear behaviour of Al6061/SiC/Al2O3 hybrid metal matrix composites. Material Science Journal Bharath University, Chennai, India


Authors: Bharani Kumar, S Arul S Murugan C Sethuramalingam P K Mayandi

Paper Title: Experimental Examination of Metal Matrix Composite using EDM

Abstract: The advancement of modern materials has lead to the coming out of several Metal matrix composites (MMCs), with the composition of new materials of which Aluminium metal matrix composite has widely use in current drift due to its enhanced mechanical properties. In addition to examine the mechanical behavior and its relative hardness, surface roughness. The reinforced material here used as silicon carbide particulate (SiC) with aluminum matrix has used as a based material with three different proportions. Aluminium 6061 alloy is selected as a surrounding substance alloy. The base material taken as Al 6061 is in corporate with silicon carbide with three different proportions. Three different additions of SiC were taken with the fractions of 5%, 10% and 15%. Finally testing for the material is carried out by means of the surface roughness values for the EDM machined surface and casted surface is measured and shown by means of the graphical representation. At the result a metal matrix composite of aluminium 6061 with silicon carbide 10% is found to be best of all with their specific enhancement in their surface coarseness values.

Keyword: Silicon carbide, Aluminium alloy 6061, Electric discharge machining, surface hardness.

Authors: Jessy Michla, J.R. Rajini, N

Paper Title: Property Enhancement of Aluminium Based MMCs with Various Reinforcements

Abstract: Aluminium Matrix Composites are used in a wide variety of fields like Aerospace, Marine, Automotive industries, structural applications, etc. This review paper is concerned with the different Aluminium alloys with various reinforcements and studies the properties like strength, stiffness, hardness, wear rate and porosity. It mainly aimed at the evolution of Aluminium Matrix composites in the Aviation sector. The need for better performance, low cost and quite quality materials are upgraded by the latest MMCs and novel manufacturing processes. With the reinforcements like Silicon Carbide, Boron Carbide, Titanium Oxide, etc. improved the mechanical and tribological properties of MMCs. Likewise, the Fabrication Techniques such as Powder Metallurgy as well as stir casting improved the performance of MMCs.

Keyword: Metal Matrix Composites, Al based MMCs, Reinforcements, Fabrication Techniques.
Mechanical Properties

References:

23. Hansang Kwon, Mehdi Estili, Kentai Takagi, Takamichi Miyazaki, Akira Kawasaki, “Combination of high extrusion and spark plasma sintering for producing carbon nanotube reinforced aluminium matrix composites,” Carbon, vol. 4, 7, 2 0 0 9, pp. 5 7 0 – 5 7 7 7.
Authors: C. Bennet, N. Rajini, J.T. Winowilin Jappes

**Paper Title:** Influence of Chemical Treatment on Tensile and Flexural Properties of Sansevieria Cylindrica Polyester Composites

**Abstract:** The sansevieria cylindrica polyester composite slabs are made by compression moulding technique using fibres treated with sodium hydroxide (NaOH), silane, calcium hydroxide (Ca(OH)2) and potassium permanganate (KMnO4) for optimum fibre length, optimum weight percentage and optimum curing temperature (40 mm, 40% wt, 600°C) and their tensile properties have been studied. The inclusion of sansevieria cylindrica fibre as reinforcement into polyester matrix improves the flexural and tensile strength till a certain weight percentage, then it decreases drastically by further addition of fibre. The main problem in natural fibre is water uptake which damages the fibre and thereby the strength is reduced. To improve the performance, some modification of fibres with various chemical treatments is performed and it enhanced the properties to a greater extent. Ca(OH)2 treated composites showed higher tensile strength whereas silane treated composites showed lower tensile strength. KMnO4 treated composites showed higher flexural strength whereas silane treated composites showed lower flexural strength.

**Keywords:** Chemical treatment, Compression moulding technique, Curing temperature, Sansevieria Cylindrica fibre

**References:**


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Authors: K. Mayandi, N. Rajini, S. Rajesh, M. Gopal Krishnan, N. Antony Rooth

**Paper Title:** Examination of Tensile Strength and End Notch Flexure Properties of Unidirectional Basalt Fabric Reinforced Polymer Composites With and Without Addition of Biochar Filler

**Abstract:** The effect of biochar filler (carbon particle) on the mechanical properties over the inter-laminar surfaces of basalt unidirectional fabric/polyester resin is going to be scrutinized using Mode II delamination method. The ENF (end notch flexure) specimen is fabricated using hand layup method. Here basalt fabric is...
synthesized using unsaturated polymer resin with the help of methyl ethyl ketone peroxide and cobalt naphthenate as a catalyst. Both specimens are manufactured with and without biochar conditions. The laminate length and width will be customized as per the required dimensions of the ASTM standard. The ENF specimens are tested using the universal testing machine and the strain energy released rate and displacement of each specimen are measured. The biochar based laminated composite has a resistant towards the fracture developed on laminated composite during testing due to the addition of carbon particles.

**Keyword:** Unidirectional basalt fabric, Tensile strength, ENF (End Notch Flexure), BioChar(BC).

**References:**


**Authors:** I. Siva

**Paper Title:** Thermal Conductivity and Flammability Analysis on Coconut Sheath Reinforced Polyester Composites

**Abstract:** Thermal conductivity is very important study done for the polymer composites towards characterizing the application field in recent days. Present work, thermal conductivity along the thickness is experimented. Flammability for the fabricated composites through accelerated and natural burning is studied and reported. Composites are prepared under compression for varying reinforcement type. Hybrid composite are also produced and compared with the properties of the virgin composites.

**Keyword:** Coconut, Sheath, Polyester, Thermal Conductivity, Flammability.

**References:**


Authors: S. Saravanasankar, G. Kalusuraman, I. Siva

Paper Title: Vibration Analysis on Luffa Fiber Reinforced Polyester composites

Abstract: The objective of this process is to investigate the free vibration characteristics of luffa fiber reinforced polyester composites. It also includes the experimental investigation on density and hardness of luffa fiber polyester reinforced composites. The simple laminated plate is fabricated using compression molding machines under the pressure 17MPa. The composite specimen were subjected to modal analysis to obtain natural frequencies and damping values. Damping values obtained are increasing according to the increase in weight percentage. The damping values obtained are higher and even seen in natural fiber

Keywords: Luffa fiber, polyester composite, fiber loading, vibration analysis.

References:


Authors: Manivannan J, Rajesh S, Mayandi K

Paper Title: Erosion Wear Performance of Sheep Wool Fibre Reinforced Polyester Composites

Abstract: This research work focused on erosion performance of sheep wool reinforced polyester composites at varying wt% of fibre content (20 wt%, 30 wt% and 40 wt%). The compression moulding method is used to develop the composite plate. To investigate the wear rate of the developed composite plates, the composite plate is subjected to erosion studies. As per ASTM G76 the erosion test was done with the help of air jet erosion tester. To investigate the factors of varying wt% of fibre, impingement angle and impact velocity of the fabricated plates. The erosion behaviour of sheep wool fibre reinforced polyester composites is evaluated at...
varying wt% of reinforcement (20 wt%, 30 wt% and 40 wt%) with different impact velocities (41 m/s, 72 m/s and 100 m/s) and at different impingement angle (30°, 60° and 90°). The standoff distance, time and erodent discharge rate were kept constant. Alumina oxide is used as erodent material with the size of 50 µm. From the result, it is observed that increase in impingement angle increase the erosion rates. Another observation is made that addition to impact velocity, increase in wt% of reinforcement decreases the wear rates.

Keyword: Sheep wool fibre, Polyester resin, Compression moulding, Erosion wear.

References:

Authors: P. Balamurugan, M. Uthayakumar, S. Vigneshwaran, H. Akilan, N. Krishnakumar, Vigneshpadikumar

Paper Title: Erosion Analysis on Copper Fly-Ash Composite

Abstract: In the present study, solid particle erosion behaviour on copper – fly ash composite is studied. Composite with addition of 2.5 (wt.%) fly ash as reinforcement is prepared through powder metallurgy (P/M) technique. Solid particle erosion studies were carried out by varying the input parameters such as erodent velocity and erosion time. The results revealed that addition of fly ash reduced the resistance to erosion.

Keyword: Copper, Erosion, Fly ash.

References:

Authors: Avinash Shinde, I. Siva

Paper Title: Glass Fiber Hybrid and Stacking Sequence Effects on the Properties of Sisal/Polyester Composite

Abstract: The need for biodegradable materials is the motivation behind studying the hybridization effect of natural and synthetic fiber composite. In this study six different compositions of sisal and glass are studied. Mechanical properties viz. tensile and bending are evaluated and compared for different compositions. Glass used at core showed slightly higher tensile strength than at skin. Also, it is found that the flexural strength is highest for 4 sisal layers at core and glass at skin. Fatigue life evaluation of all glass and all sisal composition is also performed which shows better fatigue performance of all glass composition.

Keyword: Glass fiber, Sisal fiber, hybridization, mechanical properties.
Of the materials. The application of 3D scanning is improved by reducing the cost of 3D scanning device. In this work, the extracted fiber from the luffa plant is used as a matrix for making composite with unsaturated polyester. As received (UT) and alkali treated fibers (NT) are used for making laminates. All the composites have been made with an optimal pressure of 50 kg/cm2 with room temperature curing of 12h. Evicted specimens were cut in to the dimensions as per respective ASTM standard. The surface treatment effects on the coefficient of friction (CoF) is measured using pin-on-disc wear set-up machine. Results show the impact strength of the composites increased afterward surface treatment. Meantime, the coefficient of friction also increased in the treated fiber composites. Experiment is conducted for three different sliding velocity for 3000m of abrading distance.

**Keyword:** Luffa fiber, polyester matrix, sliding velocity, coefficient of friction.

### References:

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**Authors:** Rajesh S, Kalyan Kumar Reddy N, Madhu P, Tarun K

**Paper Title:** Inspection of Materials by Laser Based 3D Scanning

**Abstract:** 3D Scanning system plays a vital role in the field of engineering as well as for engineering purposes. The 3D Scanner is capable of capturing the real world image and converting it into digitalized form and sends the digitalized form of information to the computer for the further procedures. It aims at the reverse engineering process in a variety of industries like production industry to pertain the existing components for the inspection of quality components and for the simulation engineering to replica the nature from the authentic world. It may also leads to decrease in the manufacturing costs and also it creates much ease for the inspection of the materials. The application of 3D scanning is improved by reducing the cost of 3D scanning device. In this manuscript we dealt with the preparation or making of the 3D scanner system in a compact size with reduced cost in order to be effectively available to everyone and also to amplify the quality of the 3D scanning system.

**Keyword:** 3D Scanning, Reverse Engineering, Laser Light scanning.

**References:**
Authors: Jothiraj Palaniappan, Vignesh S, Winowlin Jappes J T

Paper Title: Experimental Examination of Mechanical Analysis on Pandanus Odorifer Fiber Reinforced Polymer Composites

Abstract: The advancement in the polymer science and materials have led to the conglomeration of the both entities to a different wide variant of composite materials. The advancement have made it very clear with the enunciation of the various composites with varied matrix and binders. The objective of this work is to prepare a low weight composite material with natural fiber for packaging applications. Pandanus odorifer with the low density polyester resin composites were chosen and prepared and characterized for various mechanical properties such as tensile and impact test to ensure its endurance in the applications.

Keyword: Polymeric Composite, Mechanical Studies and Pandanus Odorifer.

References:  

Authors: S. Merlin, S. Maragathasundari, D.Senthilkumar, K.S. Dhanalakshmi

Paper Title: Queuing system in E- Commerce

References:  
Abstract: This paper explores an investigation on Queuing framework in E-trade. Online business (electronic trade) is the acquiring and selling of product and adventures, or the transmitting of benefits or data, over an electronic system, basically the web. It is the trading of things or administrations using PC systems like Internet or online casual networks. Here the Business is led utilizing PCs, phones, fax machines, standardized tag per users, Visas, ATM or other electronic apparatuses without the trading of paper-based records or physically moving to a strip mall. It incorporates exercises, for instance, acquisition, request passage, trade handling, online installment, verification, stock control, request satisfaction, shipment, and client support. In the Queuing arrangement of E trade, the clients touch base in Batch with Reneging happens at the set-up time organize and Optional second stage where breakdown happens just as fix procedure will be done. Moreover, we accept that the clients may renege amid the Initial stage because of eagerness (Slow server) or Non-Satisfaction in acquiring the items from the specific site. At the season of Repair process, Strictly Non-acceptability of the clients is executed. The model is well analyzed and solved by supplementary variable method .The system performance measures are derived. Numerical analysis and graphical representation of the model clearly justifies the model to a fullest satisfaction.

Keyword: Set up time stage, optional second stage of service, Restricted admisssibility

References:


Authors: S. Maragathasundari, R.S.Somasundaram, P. Karunakaran, P. Manikandan

Paper Title: Queuing System Modeling for Supermarkets

Abstract: Supermarkets may not have the IT needs that service-oriented businesses do, but that does not mean they cannot use computers in their day-to-day operations. Many supermarkets are adopting complex computer systems that allow them to regulate many of their practices, providing business leaders with more information to make decisions with and making some processes automatic, saving supermarkets both time and money. For the complete satisfaction of the customers, in system modeling, various queuing system is followed by the super markets. In all those queuing system, various queuing issue have to dealt with. Among those, on of the

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133.
Queuing problem is inspected and it is considered as a Non Markovian Queuing issues. For the above portrayed Queuing problem, by the usage of supplementary variable method, performance measures like number of customers in the system, average length of the queue, waiting time of the customers in the system as well as in the queue are derived. In addition, idle time of the server and the time spent by the server for each service are determined. The model is well justified by means of a Numerical portrayal and a grow graphical examination is done toward the end to favour the model.

**Keyword:** Performance measures, Non markovian Queue, Supplementary variable method.

**References:**

**Authors:** T.Arun Prasath, Suprabhat Bharti, B.Pavan Kumar, A.Harsha Vardhan

**Paper Title:** Implementation of Protective Device for Lineman Protection in Real Time Operation

**Abstract:** This paper is proposed to control an electrical switch with the assistance of OTP based password. A keypad is associated with the task to enter the secret password. During the electric line fixing Lethal electrical accidents to the lineman are increasing because of the lack of communication between the linemen working staff and the electric station officers. This proposed framework gives an answer, which can guarantee the wellbeing of the lineman. Since the control to turn on/off lies with the lineman. So there is the arrangement in the system and a password is required to operate the electrical switch i.e. on and off. The lineman has to carry the RF-ID tag that will be inserted into RF-ID reader to generate a one-time password. OTP will be received by the lineman. After inserting correct OTP Lineman will trip the supply and after securely repairing it, again he can turn the supply for respective phase. A microcontroller from ARDUINO family is used in the framework for complete operation and control. The microcontroller is interfaced with the matrix keypad to enter the secret one time password. The entered secret OTP is compared with the password stored in the microcontroller’s Read-only memory. If OTP matches with the stored one than only electrical switches can be turned on or off otherwise it will say the wrong password. A light emitting diode is used to intimate the activation and deactivation of the electrical switch. Because of the use of EEPROM, the user does not have to remember the secret password. The microcontroller is interfaced with the Global system of mobile (GSM) to monitor the operation by lineman by the means of SMS. When lineman trip the supply a message will be sent to a higher authority about the Activation and deactivation of the electrical switch.

**Keyword:** Microcontroller, Diodes, RF-ID reader, RF-ID tag, Relays, Crystal, Matrix Keypad, Resistors, Capacitors, LED, LCD display, Transformer, Relay Driver IC, Voltage Regulator, GSM module

**References:**

Authors: P Aruna Jeyanthy, Elsting Prees, K Saravanakumar

Paper Title: **Power Flow Management of Grid Connected Micro-grid**

Abstract: In this paper, a novel control method for the power flow management of grid connected with transformer–battery based system including bidirectional (BL) DC-DC converter is presented. The objective of this proposed system is to satisfy the load demand and control the power flow management from the different sources. A BL boost converter is used to boost the power from the wind and connected with battery charging or discharging. Rectifier is used here to convert AC to DC and that the received DC supply gets boost up by DC-DC boost converter. A BL converter is used for supplying loads. The advantage of the proposed work is simple in operation, minimizes the losses and feeds the extra amount of power into the grid. The battery can be charged from the grid also whenever it is required.

Keyword: DC micro grid, DC-DC converter, Energy storage system, Simulation.

References:

Authors: Sreedivya K.M, P. Aruna Jeyanthy, D. Devaraj

Paper Title: **Improved Differential Examination Algorithm for Power System Stabilizer for Damping Low Frequency Oscillations**

Abstract: In the large interconnected power system, maintaining the Small signal stability of the system is of more concern, for the stable, secure and reliable operation. This paper proposes an Improved Differential Evolution (DE) Algorithm based Optimal Power system stabilizer (PSS) for damping the low frequency oscillations. Enhancing the damping of system is formulated as the optimization problem. DE/Best Mutation Operator is adopted for producing the mutation vector, to augment the convergence rate of DE algorithm. The effectiveness of the proposed approach has been tested in Single Machine Infinite Bus (SMIB) system under different operating conditions. The time response evaluations has justified the superiority of the proposed approach for damping the oscillations and thereby improving the Small signal stability of the system.

References:
**Keyword:** Power System Stabilizer (PSS), Improved Differential Evolution Algorithm (IDE), Low frequency Oscillations, Small signal stability.

**References:**


**Authors:** S. Raja Mohamed, P. Aruna Jayanth, D. Devaraj

**Paper Title:** Harmonic Analysis and Control of Grid-Connected Solar PV Inverter under Normal and LVRT Operating Modes

**Abstract:** Environmental factors and active involvement in grid-connected solar PV inverter ancillary operations may impact the quality of the current injected into the grid. The future grid-connected solar PV system with ancillary facilities (e.g., low voltage ride-through (LVRT)) will be more active and intelligent, which will degrade grid current reliability. The grid current distortions are specifically caused by the dc-link voltage variations and the modulation of pulse width (PWM) control applied to the PV inverter. This article analyzes the current harmonic distortion under the two-stage grid-connected PV system’s regular (MPPT) and fault (LVRT) condition. Furthermore, a dc-link voltage variation control system for the two-stage photovoltaic (PV) inverter is presented during low voltage ride-through (LVRT) operation mode. The dc-link voltage differences are regulated under the fault condition to preserve the high modulation ratio in order to considerably mitigate the distortion rate of the grid current. Besides, the proposed system of control is designed to protect the PV inverter from the overcurrent failure under the faults to meet the modern LVRT grid codes. The conducted simulation tests have confirmed that the proposed control scheme leads to reduce a grid currents harmonics level by controlling the dc-link voltage variations.

**Keyword:** Current Harmonics, DC-link voltage variations , low voltage ride-through (LVRT), Grid –connected Solar Photovoltaic, total harmonic distortion (THD)

**References:**

Abstract: India, a developing country has targeted 9% growth rate, its yearly power generation has increased to 6.5% per year from 2011 to 2017. It is due to the fast urbanization and increase in building occupied area. However, India is experiencing energy scarcity nowadays. The power generation can’t be able to satisfy the demand to withstand its growth rate in future. Therefore, this study investigates connecting some technologies for connecting residential buildings to the Smart Grid, to minimize electricity consumption. It can be achieved by optimizing consumer’s devices through interface with Home Area Networks (HANs), Smart Grid-connected home machines diagnostics, and enhanced capability to aim and adopt energy efficiency agendas. These tactics create impacts on energy conservation that influencing the initial investment on new generation.

Keyword: Energy saving, India, Smart grid, Residential buildings

References:

Abstract: In India the electricity demand is growing rapidly day by day due to various increasing residential, official and organizational buildings which requires more power. Electricity generation system is dominated by a hybrid renewable energy resources like wind and solar, approximately 35% from 2007 to till now, still power shutdown is applied compulsory by the Indian Government. In order to improve the amount of power generation to 100% with increased thermal, fossil-fueled, and bio-gas power generation is converted into complete solar, wind and thermal including peaking options. In order to fulfill the demand, the wind capacity is increased from 35% into 100% by incorporating solar and thermal. Incorporating various energy systems into stand alone power grid, the highest power demand can be fulfilled. This paper applied an application for mixing various energy resource for increasing the power generation and production.


References:
Abstract: The main objective of this paper is to present the detailed information about various renewable energy sources for creating a technique used for sustainable development. Such kind of technique comprises of energy saving, increasing energy production and replacing fossil fuels using different renewable energy sources. It is motivated to include various novel techniques with large-scale renewable energy plants for integrating and measuring the efficiency of the plants. According to India, this paper discussed about the various problems and issues associated with converting available energy systems into complete renewable energy system. From the overall discussion, it is concluded that converting total energy system into renewable energy system is possible. Also, what are all the requirements, current available resources and future methods to improve the energy system are discussed. But converting the transport sector into flexible energy system methods is difficult.

Keyword: Renewable energy, Sustainable development, Particle Swarm Optimization, Reference scenario.

References:

Abstract: At present the power systems involve extensive and composite unified transmission structures, for substantial issues. It is an extensive, multifaceted and nonlinear problem with multiple solutions to be estimated upsurges with respect to the size of the system. In this decade, differential evolution (DE) algorithms have been employed by several researchers as it is awfully active in resolving optimization problems. In this study, TEP problem is considered in static arrangement. Moreover, one of the cases of static TEP problem has been studied as without generation resizing. DE has attained results with decent exactness, easiness and acceptable execution time. The simulations have been executed using MATLAB.

Keyword: AC power flow, Differential Evolution, Garver’s 6 bus system and Transmission Expansion Planning.
References:

Authors: Senthilkumar Nararajan, Vishnuvarthan Govindaraj, Kannapiran Balasubramaniam, Pallikonda Rajasekaran Murugan, Arunprasath Thiyagarajan, Anitha Narayanan, Deny John Samuel,

Paper Title: Amalgamation of Clustering and Meta-heuristic Optimization Techniques for Automated MR Brain Analysis

Abstract: Interest in computer-assisted image analysis in increasing among the radiologist as it provides them the additional information to take decision and also for better disease diagnosis. Traditionally, MR image is manually examined by medical practitioner through naked eye for the detection and diagnosis of tumor location, size, and intensity; these are difficult and not sufficient for accurate analysis and treatment. For this purpose, there is need for additional automated analysis system through accurate detection of normal and abnormal tumor region. This paper introduces the new semi-automated image processing method to identify the brain tumor region in Magnetic Resonance Image (MRI) using c means clustering technique along with meta-heuristic optimization, based on Jaya optimization algorithm. The resultant performance of the proposed algorithm (FCM +JA) is examined with the help of key analyzing parameters, MSE-Mean Square Error, PSNR-Peak Signal to Noise Ratio. DOI-Dice Overlap Index and CPU memory utilization. The experimental results of this method show better and enhanced tumor region display in reduced computation time.

Keyword: Jaya Algorithm (JA), Tumor detection, Fuzzy C Means Clustering, Meta-heuristic Optimisation.

References:

Authors: V. Deepak, Aswathy Udayan, Nidhin Sreekumar,

Paper Title: The Strategies for the Production of Biodiesel through Eco-Friendly Microalgal Systems
Abstract: The fast depleting energy sources and other environmental concerns, like carbon emissions, have led the scientific community on a race against time to find an eco-friendly, sustainable and renewable source of energy. Biofuels obtained from domestic used materials cannot practically satisfy the existing demand for an industrial fuel. Biodiesel is mono-alkyl esters of vegetable oils or animal fats. The major advantage of biodiesel is that it can be used directly into existing engines without any modifications. One of the potential sources for renewable biodiesel production which can effectively supply biodiesel for international and industrial demand is microalgae. Besides production of biofuels microalgae have been seen as a potential source for a number of areas including pharmaceuticals, nutrition and aquaculture. This review discusses on the different aspects, challenges and current scenario in the biodiesel production from microalgae. Cultivation of a high yielding marine microalgal strain in a very economical and well scrutinised open raceway pond could prove to be the key to future of energy sector. Various lipid enhancement methods and proposed culture methods are also discussed. On an industrial perspective, a well-engineered and continuously monitored open raceway pond for cultivation of marine microalgae seems to be a promising economically viable method for production of biofuel.

Keyword: Algal oil, Biodiesel, Lipid fuel, Microalgae. Open raceway pond reactor, Biofuel.

References:
22. S. Starckx, “A place in the sun—algae is the crop of the future, according to researchers in Geel, Flanders Today.” 2012.
33. T. T. Y. Doan, B. Sivalogonathan, and J. P. Obbard, “Screening of marine microalgae for biodiesel feedstock,” Biomass and
Individuals," Br. J. Nutr., m-
ances growth capacity in average deviation (AAD) and MSE, Taguchi model is more adequate. Among three modifications and applications," k propagation neural network (BPNN).
Leuconostoc 
Keyword the molecular weight distribution of dextran was narrowly dispersed. (PD) index of the LMW between the number and weight average molecular weight was found to be less (4.42%). The polydispersity DexWc4 was calculated using M high temperature (35°C) ultimately favored the production of LMWD concentration. The study suggested that a low sucrose concentration (3% w/v), considering absolute av determination coefficients (R2 value) for ANN and Taguchi models were 0.991 and 0.998, respectively. Considering absolute average deviation (AAD) and MSE, Taguchi model is more adequate. Among three factors, the percentage yield of low molecular weight of dextran is invariably dependent on the sucrose concentration. The study suggested that a low sucrose concentration (3% w/v), LMW-DexWc4 produced by DSWc4 at optimized conditions was analyzed. The weight average molecular weight of LMW-DexWc4 was calculated using M-H expression, found to be 85775 (=90 kDa). The relative percentage error between the number and weight average molecular weight was found to be less (4.42%). The polydispersity (PD) index of the LMW-DexWc4 was found to be 0.9576 and the value is close to 1. The PD value depicted that the molecular weight distribution of dextran was narrowly dispersed.

**Keywords:** Taguchi Orthogonal Array, ANN, Dextran, Dextranase, Weissella cibaria Nitcsk4.

**References:**


Authors: Jyothi Kanagaraj, Vasanthi Nachiappan, Ghurupreya Ramesh

Paper Title: Degradation of Phospholipids by N, N-Dimethylformamide Induced Liver Toxicity in Male Wistar Rats

Abstract: Dimethylformamide (DMF) is an industrially used solvent, prioritized by the National Toxicology Program as a potent hepatotoxic compound. The effect of DMF on liver is well documented; however its impact on hepatic phospholipids remains enigmatic. Hence, to understand the phospholipid metabolism we have developed an animal model for DMF induced hepatotoxicity. In the present study, DMF (0.5, 1.0, 1.5 g/kg body wt) was given intraperitoneally to male wistar rats and terminated after 24 and 48 h. DMF with a concentration of 1.5 g/kg body wt shows maximum toxic effect. Dosages higher than 1.5 g/kg body wt showed lethal effect, hence in this study, 1.5 g/kg body wt was used as maximum concentration. Induction of hepatotoxicity by DMF was confirmed by liver marker enzymes. DMF impairs the liver phospholipid metabolism. DMF decreased the individual phospholipid levels by altering the fatty acid composition. There was an increase in unsaturated fatty acids with a concomitant decrease in saturated fatty acid. These changes in the fatty acid may directly or indirectly affect the membrane structure and fluidity. Understanding the mechanism by which DMF induced hepatotoxicity and alteration in phospholipid metabolism is a worthwhile pursuit.

Keyword: Fatty acid, Hepatotoxicity, Phospholipid, N, N-Dimethylformamide

References:


Authors: Sankarganash Arunachaalam, Umapriya, Selvaraj Kunjiappan

Paper Title: Cardioprotective Plant Extracts

Abstract: Cardiovascular disease is assuming as a major cause of morbidity and mortality worldwide. In traditional Indian medicinal system, many plants were used for the treatment of cardiac failure. Medicinal plants are used in various ailments due to efficacy, low cost, ease availability and safety. Because of these Advantage, the usage of medicinal plant increased by the medicinal practitioners in their day to day practice. In this review...
article, we discuss about the plant extracts from various part of the plant which is used to cure or protect against the cardiomyopathy induced by many inducing factors.

**Keyword:** Plant extract, Medicinal Plant, Cardiovascular disease.

**References:**

**Authors:** Kamaraj Rajamaniikkam, Chandran Rajesh, Ramesh Prakash, Narayan Selvapalam, Karuppaiah Panichvelam

**Paper Title:** Earthworm, an in Vivo System to Screen Proliferative and Antimitotic Compounds

**Abstract:** Amputated earthworm, Eudrilus eugeniae, possessing clitellum region has regenerating ability and develop into complete worms. Earthworm regeneration assay was developed based on this phenomenon and utilized to identify the presence of antimitotic compounds from the rhizomes of medicinal plant Acorus calamus. In continuation of that study, rhizomes of A. calamus was extracted with water and crude residue was obtained after evaporation. Subsequently, to separate the compounds from crude residue it was extracted with five different organic solvents individually such as benzene, chloroform, ethanol and methanol. All five different fractions were examined on earthworm regeneration assay to identify its antimitotic potential. Fractions extracted with benzene and chloroform did not inhibit regeneration as blastema was observed. In contrast fractions extracted with methanol and ethyl acetate inhibited the development of blastema. It suggests that methanol and ethyl acetate fractions might possess antimitotic compounds. TLC analysis with ethyl acetate fraction revealed two distinct bands. Compounds eluted from TLC plates decreased mitotic index of Allium cepa root tips and supporting the presence of antimitotic compounds. Hence we suggest that earthworms could be used as an in vivo system to screen both proliferative and antimitotic compounds from unknown sources.

**Keyword:** Eudrilus eugeniae, Acorus calamus, earthworm, antimitotic, proliferative, aqueous extract

**References:**
Abstract: Cosmetics are utilized to upgrade the appearance or scent of the human body. Beautifying agents incorporate skin creams, lotions, powders, aromas, lipsticks, nail polish, eye and facial cosmetics, permanent waves, and numerous different kinds of items. To make the hair sound and gleaming, there are several manufactured oils and hair shampoos. But when in contrast to the artificial one, natural cosmetics have growing demand in the world market and are an priceless gift of nature. As the age increases, people suffer from hair loss and damage due to the less secretion of keratin. As we age, our natural levels of collagen decrease, leading to thinning and shedding of hair. Research shows that collagen may help prevent hair loss. Collagen may even help to prevent the appearance of grey hairs by supporting the healthy structure of the hair follicle, where the pigment of hair is produced. Collagen supplements also have been shown to be effective in treating dry, brittle hair, helping to maintain healthy moisture levels in the hair. The present work was aimed to formulate organic oil and shampoo using fish scales and various herbs. The formulated organic oil and shampoo were evaluated for homogeneity, appearance, odour, saponification value, pH etc.

Keyword: Cosmetics, Keratin, Collagen, saponification value

References:


Authors: Ramya Petchimuthu, Angelin Jenit Franklin, Maria Agnes Roganzia Sahayaraj, Abisha Gopalan, Mari Selva Sundari Raju, Vanavil B.

Paper Title: Formulation and Examination of Organic Oil and Shampoo from Fish Scales

148. 683-687
Abstract: Cocoons of earthworm Eudrilus eugeniae were collected from vermiculture bed and found that it had antibacterial activity. The size of zone of inhibition was directly proportional to the size of cocoons examined. Along with nutritious fluid and embryos, culturable bacterial community was found inside the cocoons. Bacterial colonies were isolated from the trails of newly hatched, juvenile worms in the nutrient agar medium and examined. Gram negative, rod shaped bacterium was found to be abundant in the trails of juvenile earthworms. Polymerase chain reaction was performed from this bacterium to amplify the gene of 16S rRNA and analyzed. Subsequent bi-directional DNA sequencing revealed that this abundant bacterium is highly related to 16S rRNA gene sequence of a strain, Alcaligenes faealis. Based on available literature, we hypothesize that this bacterium could be symbiotically associated with cocoons of earthworms.

Keywords: Earthworm, Eudrilus eugeniae, Cocoon, Alcaligenes faealis, 16S rRNA sequence.

References:
Phenol Transport and Biodegradation Model in an Unsaturated Porous Media from Wastewater Discharge

Abstract:
To minimize groundwater pollution and suggest appropriate remedial actions, sound numerical models must be developed to predict the fate, transport and biodegradation of pollutants in partially treated or untreated industrial wastewater. Phenol is an aromatic organic compound produced on a large scale and is also released as major organic pollutant from several industrial wastewater (pharmaceutical, petroleum, coal refineries etc.). Biodegradation of phenol in soil is generally rapid especially in presence of nutrients and acclimated microbes which are discharged along with the partially treated wastewater. A numerical model has been developed to predict the fate of phenol from industrial wastewater discharged on to a porous unsaturated soil media. The transport processes of advection, dispersion, and biodegradation process using Haldane growth and inhibition have been incorporated in the numerical model. The results suggest that acclimated microbes in the wastewater has a potential to degrade phenol up to 1500 mg/L at a bacterial concentration of 0.1 mg/L and soil depth of 50 cm. The results also show that phenols desorb at a depth of 100cm from 12th day and are simultaneously acted upon by the increased microbial concentration. In essence, high microbial concentration significantly decreases the phenol movement in the unsaturated zone, particularly at a larger depth and at higher time levels which eventually affects the groundwater quality.

Keyword: Phenol, Transport model, Biodegradation model, Wastewater discharge, Haldane Kinetics

References:

Authors: Muttu Pandian P., Matheswaran M., Vanitha S., Sivapragasam C.,Naresh K. Sharma

Macroalgae and Activated Sludge Microbes in Treatment of Crepe Cotton Effluent

Abstract:
Crepe cotton bandages (textile fabrics) are common household kit in the medical first aid boxes and are globally used in pharmaceutical and health care units to offer heat, insulation and support in many medical situations. Southern Tamilnadu comprises of more than 150 crepe bandage textile units and exports tonnes of crepe cottons. Many units are operated on continuous basis and therefore the amount of wastewater generated and its treatment is of critical importance. Unlike typical textile effluent, crepe cotton processing wastewater do not contain dyes, but significant proportions of caustic soda, soda ash, bleaching agents and COD. This paper discusses the effluent treatment of crepe cotton processing units using mixed cultures of macroalgae and activated sludge microbes. There are very few studies comparing the performance of activated sludge and macro algae in wastewater treatment. Fresh water macroalgae was collected from a nearby pond and activated sludge was collected from the aeration basin of domestic wastewater treatment plant. Crepe cotton processing effluent had significant concentrations of COD, TDS, TSS and was highly alkaline. The COD removal efficiency of about 73.8% and 99 % was obtained for macroalgae and activated sludge microbes respectively. COD removal was quick in activated sludge while macroalgae cultures took 144 h to remove 275 mg/L of COD. This study shows that activated sludge microbes are quick to adapt in uptake of organics from crepe cotton effluent when compared to macroalgal sp, further studies will provide insights on generating bioenergy from algal species grown in crepe cotton effluent for sustained plant operation.

Keyword: Crepe cotton processing wastewater, Macroalgae, Activated sludge, Textile effluent, Nutrients removal

References:
Paper Title: Computational Aspects of (E)-O-CarbomethoxyMethyl Oxime Ether of 1,3-Dimethyl-2,6-Diphenylpiperidin-4-One

Abstract: Density Functional Theoretical (DFT) studies on the biologically active oxime ether derived from 1,3-dimethyl-2,6-diphenylpiperidin-4-one has been carried out. Various quantum chemical parameters of the molecule viz. molecular geometry, Highest Occupied Molecular Orbital – Lowest Unoccupied Molecular Orbital (HOMO–LUMO) energies, Non-Linear Optical (NLO) properties, Mulliken atomic charge distribution were obtained theoretically and compared with the single crystal data. An insight into the structure and property correlation revealed the probable behavior of the molecule studied.

Keyword: About four key words or phrases in alphabetical order, separated by commas.

References:
Ground state properties of ATiO₃ (A = Ca, Sr, Ba & Pb) pervoskites in cubic and tetragonal phase were studied by tight binding linear muffin-tin orbital (TB-LMTO) method in the framework of density functional theory (DFT) with the atomic-sphere approximation (ASA). The total energy of the compounds come under the above said structures have shown that the cubic phase is the stable structure in the ambient condition. Among these pervoskites maximum bulk modulus was obtained for BaTiO₃. Direct (cubic) and indirect (tetragonal) band gap was observed from the band structure calculations and the values fall within the range of 1.5 – 1.7 eV. Electron distribution of each element in the valence and conduction bands was clearly obtained from the density of states (DOS) and partial density of states (PDOS) for all the compounds. The magnetization values were found in the range of 0.4 – 0.56 x 10⁻⁵μB. The δ' orbital position of Ti was observed for all the ABO₃ compounds and shifted away from the Fermi level except for Ti in BaTiO₃. The refractive indices of the pervoskites were calculated from the energy band gap and the value is above 3 for all the compounds.

Keywords: ATiO₃ pervoskites (A = Ca, Sr, Ba & Pb); Band structure and density of states; Refractive index and ferromagnetism; Tight Binding Linear Muffin-Tin Orbital Method.

References:
Authors: Pandian Lakshmanan, Vadivel Saravanan and Chennan Ramalingan.

Paper Title: Size/Shape Controlled Synthesis of Au/TiO2 Nano-Composites

Abstract: In order to control the size of titania supported gold nanoparticles, a new strategy of liquid phase chemical reduction has been demonstrated. It involves on-site reduction of gold phase by glycerol due to thermal treatment. In the first step DPU process is performed prior to chemical reduction. The results show that, this method offers many size-control parameters including mainly reduction temperature and catalyst to glycerol ratio. This paper analyzes various aspects of the different approaches attempted to control the size/shape of the titania supported gold.

Keyword: Gold nanoparticles, Titania, chemical reduction, glycerol, selective oxidation, size-controlled synthesis.

References:
References:

Authors: P. Manorama, Gangadharra Angajala, Geetha Das

Paper Title: Phytochemical Screening, Spectroscopic Examination and Antimicrobial Evaluation of PHE (Poly Herbal Extract) of Selected Indian Medicinal Herbs

Abstract: Methanolic extract of important medicinal herbal plants like Marsilea-quadrifolia (whole plant), Trigonella-foenum-graecum (whole plant), Leaves of Mangifera-indica, Seeds of Eugenia-jambolana, Flowers of Cassia-aucurculata, Flower of Musa- paradisiaca, Leaves of Aegle-marmelos and equal ratio of the mixture of the seven plants (Poly Herbal Extract - PHE) was prepared. The phytochemical screening for all the individual plants and PHE have been studied by using UV, IR, TLC and AAS. The results obtained from spectrscopic analysis indicated the presence of alkaloid, carbohydrates, protein, phenols, tannin, saponin, triterpenoids, glycosides, phytosterols, gums and mucilage. The results of TLC for seven plants and PHE showed the RI factor in conformation with phytochemical and spectrometric analysis. The atomic absorption studies reflected the presence of copper, iron, magnesium and zinc metals in PHE. Antimicrobial studies for all the individual plants and PHE were carried towards gram positive bacteria Bacillus subtilis and gram negative bacteria Pseudomonas aeruginosa, Escherichia coli respectively. The in vitro antimicrobial studies also revealed that PHE showed better activity against E. coli which is comparable with the standard ciprofloxacin.

Keyword: Medicinal plants, Poly Herbal Extract (PHE), Spectroscopy, Antimicrobial.

References:
Synthesis of Nanosized Titanium Dioxide (TiO2) by Sol-Gel Method

Abstract: Nanosized Titanium dioxide (TiO2) was synthesized by sol-gel method and it was characterized by XRD, EDX, SEM, FTIR and DRS-UV-Visible spectroscopy to study the structural, morphological and optical properties of the prepared nano TiO2. The presence of elements Ti (54.5%) and O (40.5%) are confirmed by Energy dispersive X-ray spectroscopy (EDX) analysis. The X-ray diffraction analysis (XRD) confirms the presence of Nano crystalline anatase phase TiO2. The average crystallite size calculated from the XRD data using Debye-Sherrer equation was ~15 nm and the preferred orientation plane was (101). The DRS-UV-Visible spectra analysis shows that the band gap energy (Eg) value calculated for the nano TiO2 was 3.18 eV. The surface morphology of the nanoTiO2 was studied by scanning electron microscopy (SEM) analysis, it shows that the uniform anatase phase TiO2 with nano plate like structure.

Keyword: Nanosized Titanium dioxide (TiO2), Sol-Gel Method, Anatase, XRD analysis.

References:


Authors: J. Vinoth Kumar, M. Arunpandian, E. R. Nagarajan

Paper Title: Design and Structural Examination of ZnO Nanoparticles

Abstract: The ZnO nanoparticles were synthesized by simple hydrothermal method and it is confirmed by XRD and SEM characterization techniques. The detailed structural analysis was done using Rietveld refinement technique. By maximum entropy method the bonding feature of ZnO were analyzed. The bonding feature of ZnO was analyzed through 3D and 2D charge density maps. The shape and surface morphology are examined using SEM images, which indicate partially hexagonal structure with average particle size is about 100 nm.

Keyword: Rietveld method, Electron density distribution, Nanomaterials, Hydrothermal.

References:


Authors: Govindaraj Usha, Ramesh Prakash, Narayanan Selvapalam, Karuppasamy Karpagalakshmi, Lakshminarayanan Piramuthu

Paper Title: Oxidation of Benzoin to Benzil using Lanthanum Oxide

Abstract: Industrially useful class of intermediate such as benzil can be obtained by the oxidation of benzoin, which has been explored extensively. Until now, lanthanum oxide has been not explored for the oxidation of benzoin. Here we report the oxidation of benzoin by the rare earth oxide, lanthanum oxide, which converted quantitatively the oxidized product, benzil. The product was characterized by FTIR and NMR

Keyword: Oxidation, Benzoin, Benzil, Lanthanum oxide...

References:


Authors: Arunpandian M., Selvakumar K., Nagarajan E. R., Arunachalam S.

Paper Title: Ag/ND2O3-Zno Nanocomposite: Visible Active Efficient Photocatalytic Degradation of Methylene Blue and Its Antibacterial Activity

Abstract: In this scenario, the photocatalyst Ag/ND2O3-ZnO (ANZ) are prepared under hydrothermal method and the complete build was confirmed by X-ray diffactometer, Scanning electron microscope with EDX spectroscopy. From the results, the crystalline structure was confirmed by PXRD spectroscopy. And in the SEM, spherical with sponge-like clustered morphology structure was shown and the presenting elements are confirmed by EDX spectroscopy. The suitable light needed for the degradation was selected by DRS-UV spectroscopy. The dye Methylene blue (MB) is degraded under visible light within 30 minutes with the efficiency of 98.12%. The catalyst is further analysed optimized concentration, different catalyst loading, and the catalyst efficiency was analysed by reusability study. From the recyclability, the catalyst is stable up to the fifth run. Besides, the photocatalytic study the catalyst is analysed antibacterial activity. For the results, the Bacillus bacteria having more antibacterial activity compared to E.coli bacteria.

Keyword: Photocatalyst, Methylene blue, Rare earth metal, visible light, antibacterial activity

References:


Authors: Ramesh Prakash, Narayanan Selvapalam, Govindaraj Usha, Karuppusamy Karpagalakshmi, Lakshminarayanan Pipimuthu

Paper Title: Colorimetric Determination of Amino Acids using Fluorescent Copper Nanoparticle

160. 743-747

161.
Abstract: Among the 20 amino acids, cysteine plays a major role in communication of the cells, especially towards immune system and thus developing sensor for cysteine is very important to understand the status of the human health. Copper nanoparticles decorated with Rhodamine B (RBCN) have the potential to detect the biologically important species such as amino acids, especially cysteine. RBCN has been previously has demonstrated for the sensing of host molecules such as cucurbituril based on the relative binding potential of rhodamine B on the surface of copper nanoparticles. Based on that concept, now we have developed the sensor for amino acids, especially for the cysteine

Keyword: Copper nanoparticles, Amino acids, Cysteine sensor, colorimetric sensor

References:

Authors: K. Maheswari, P. Deepalakshmi, K. Ponnozhi

Paper Title: Classification of Student Performance Dataset using Machine Learning Algorithms

Abstract: The scope of this research work is to identify the efficient machine learning algorithm for predicting the behavior of a student from the student performance dataset. We applied Support Vector Machines, K-Nearest Neighbor, Decision Tree and Naïve Bayes algorithms to predict the grade of a student and compared their prediction results in terms of various performance metrics. The students who visited many resources for reference, made academic related discussions and interactions in the class room, absent for minimum days, cared by parents care have shown great improvement in the final grade. Among the machine learning techniques we have used, SVM has shown more accuracy in terms of four important attribute. The accuracy rate of SVM after tuning is 0.80. The KNN and decision tree achieves the accuracy of 0.64, 0.65 respectively whereas the Naïve Bayes achieves 0.77.

Keyword: Classification, Decision Tree , KNN , Machine Learning, Naïve Bayes, Student Performance and SVM,

References: 162.
Due to the ubiquity of the internet in all the lines of the disciplines, cyber security becomes essential in day to day life. To make the cyber assets resilient from the challenging attacks like Advanced Persistent Threats (APT), the experts need a strategic rules and proactive decision-making models. The Caldera is a adversarial emulator for both blue and red team to test the APT along with the cyber kill chain(CCK). The resilience could be achieved when the blue team and red team work together in analyzing the cyber threats based on the probabilistic of creating adversarial profile with different characteristic helps in finding the priority of the assets from the organization from the point of an adversary in launching the cyber-attack.

**Key Concept:**
Adversarial emulator, Advanced Persistent Threats (APT), cyber kill chain(CCK), caldera, cyber-attack.

**References:**
Cyber Threat


Authors: A.Jainul Fathima, G.Murugaboopathi

Paper Title: Computer Aided Drug Design for finding a therapeutics for Dengue Virus Targets

Abstract: The dengue epidemic has taken aback the entire world today. It affects millions of people worldwide sometimes causing severe manifestation, affecting body metabolomics. It’s caused by an arthropod-borne single-stranded RNA virus that has been distributed across the coastal regions of the globe with the advent of commercialization and trade. There is no effective treatment for dengue till date, but different forms of anti-viral vaccines are in the process of clinical trials for human use. Computational methods are being developed to unravel the viral transmission mechanisms and evolution. Numerous modeling networks are being proposed to understand the phylogeny and inheritance pattern of the virus. Data models are projected in terms of mechanics or statistics to consider the distribution pattern of dengue in the future. This article talk about dengue virus targets at its genomics level. Several case scenario of applying CADD tools for finding the lead molecule for dengue targets were discussed. Advancement in dengue research with recent developments in computational methods were analyzed. The outcome of the present study suggested advancement in computational approaches may offer focused development of drugs for dengue.

Keyword: Anti-viral Research; CADD; Dengue NS2B/NS3 protease

References:
34. and S. I. H. Jane P. Messina, Oliver J. Brady, “Global spread of dengue virus types: mapping the 70 year history,” 2014.
Authors: K. Mohana Prabha, P. Vidhya Saraswathi

Paper Title: Secure Mobile Cloud Service System Based On Trapdoor

Abstract: When file owner like to store the file into cloud server that time file owner file upload request send to the provider. That time provider sends the file upload key to the file owner. When provider receives the file from the file owner that time provider upload the file into the cloud server. Here provider split the file index and file store the different location in cloud server. This is mainly used for the security of the files. Same time when file owner want to view the upload file from the cloud server that time file owner send the request to the provider. That time provider in case of not view to file owner request that is the main problem of the existing system. So here we are learn about how to overcome this problem. That the above functions are same but one different for when upload the file from the provider that time index keys are stored to the trapdoor. Trapdoor means like a virtual machines this trap door mainly used for when the file owner request send to the file key that time automatically fetch the key from this trapdoor this is mainly used for work load reduce for the provider and time reduce for the file owner access the file key. Here that file keys are encrypted format when store into cloud server because unauthorized can’t access the file without permission of provider. The main scope of this paper is to solve the security problems and retrieve the document form the cloud sever. This is used to reduce the time to access document from cloud.

Keyword: Cloud server, file owner, encrypted format, trapdoor, file key.

References:

31 Accepted 30 May 2012, Available online 6 June 2012.


Authors: R. Revathy, S. Balamurali
Paper Title: An improved Frequent Pattern Mining in Sustainable Learning Practice using Generalized Association Rules

Abstract: This research focuses on mining the frequent patterns occurred in the given Datasets by Generalization of Association Rules. Frequent pattern mining is a significant as well as interesting problem in the research filed of Data Mining. Building of frequent pattern tree (FP tree), frequent pattern growth (FP growth) and association rule generation are implemented to find the repeated patterns of data. FP tree Construction Algorithm is mainly used to compact a vast database into an extremely compressed, seems to very tiny data structure; hence eliminates the repeated scanning of database. The role of FP growth algorithm is to discover the frequent patterns with FP tree structure and construct the generalized association rules corresponding to the learning data. FP growth algorithm obtained best results as compared with conventional Apriori algorithm. This research provides some practical real time applications pertaining data mining techniques in the field of learning, education, marketing, finance and so on.

Keyword: Data mining, Concept hierarchy, FP growth algorithm, Association rule.

References:
6. Heaton, J., Comparing dataset characteristics that favor the Apriori, Eclat or FP growth frequent itemset mining algorithms. In SoutheastCon, 2016, pp. 1-7.

Authors: M. Maragatharajan, C. Balasubramanian, S. P. Balakannan
Paper Title: Reliable Data Delivery in Manet using Adaptive Demand Driven Routing Protocol and Semi Markov Process

Abstract: Reliable data delivery is an essential feature or element in the mobile adhoc network (MANET) and the devices often change their locations as they are not allocated any fixed infrastructure. In this paper, 781-787
multicast routing protocols for military communications is proposed. Data security is a serious concern in military communications with MANET. This paper attempts to prove that data security can be achieved, by applying one of the most widely used algorithms, Adaptive demand driven routing (ADMR) protocol which provides routing done with rapid topological changes. For network survivability the node behavior model is devised by incorporating Semi Markov process. On the whole, the paper shows that reliable data delivery for MANET can be obtained by estimating the current performance of the network and by using Semi-Markov process when the forwarder node is isolated.

Keywords: MANET, ADMR, Markov Process

References:

Authors: N.C. Brinha, J.T. Winowlin Jappes, P. Jothiraj

Paper Title: Analysis of Programming Tools and Techniques in 3D Printing Technology

Abstract: This paper explains and analyses the additive manufacturing process from its varieties, types and usage of different programming tools. Printing process need to be selected mainly based on applications and the materials used for development. More applications of 3D printing, were found to be in electronic industries which is mainly due to complexities in shape and size. Understanding of the prompt programming tool to be selected during complexity management is one of the major requirement. This requirement drives the research community from 3D to 4D-Printing. Mainly, in 4D printing concept, the object or the material system has the ability to change its form/function after it is being printed. The advantages and disadvantages of this technology towards the significant growth of applications were analyzed and presented in this paper.

Keywords: 3D Printing, 4D Printing, Applications, Growth Rate, Programming tools, Market.

References:

168.

Authors: Scaria Alex, T Dhiliphan Rajkumar

Paper Title: Hybrid Optimization Driven Technique for Malicious Javascript Detection Based on Deep Learning Classifier

Abstract: The growth of the web users and the contents are increasing in a daily basis. In all these webpages the implementation of javascripts are a common factor. These scripts are used for the simplicity and achieve interaction with the user, but, also could be used to harm the end user by stealing information, redirecting to phishing pages and installing harmful softwares. This alarms an immediate look into the security concerns of the javascript. There exist many machine learning-based malicious script detection approaches, but majority of them follow a shallow discriminating models where manual definition of features are constructed with artificial rules. In this paper, a deep learning framework for detecting malicious JavaScript code is proposed combing the optimization power of Bird Swarm Algorithm. To extract high-level features from JavaScript code Stacked denoising auto-encoders are implemented and BSA is used to optimise the features and identify the malicious codes. The theoretical model [2] have an accuracy of 94% in identifying the malicious codes.

Keyword: Deep learning framework, javascript, Bird Swarm Algorithm, Stacked Denoising Auto-encoders

References:

Authors: P. Nagaraj, P. Deepalakshmi

Paper Title: Inclusion of Pre-Processing and Time Series Algorithms in Map Reduce Environment using Big Data Analytics

Abstract: Map Reduce is one of the most effective ways of handling Big Data. Many of existing Data Mining / AI algorithms was developed in Map Reduce to provide effective results. There are many more algorithms including preprocessing algorithms such as Binarization, Normalization etc., Time series algorithms such as Moving average, Sliding Window, Correlation etc., which are not yet implemented in Map Reduce. Although there are not major algorithms they play a vital role in preprocessing and processing chunk data to a meaningful data. In this paper, we proposed a model of including these algorithms in Map Reduce to improve preprocessing outcome of Big Data much faster. The processed data can then be trained by the regression algorithms using Machine learning techniques to preprocess the huge data in a long run automatically.

Keywords: Big Data, Map Reduce, Data Mining, Pre-processing, Time series, Regression.

References:
Biometric Attendance for Classrooms – A Real-Time Implementation

Abstract: Biometric fingerprint attendance systems have widely been used in different working sectors such as schools, colleges, and industries for monitoring employees. In most of the schools and colleges, the attendance system is still in RFID technology. A replacement of this technology with the biometric system can be more and more useful in the educational sector for accurate student attendance. The system is very much useful for schools and colleges to generate attendance for each and every student. Fingerprint access is used to generate attendance. This system can provide an accurate, faster, and convenient way of managing and monitoring the student progress in the classroom. Automatic notification is provided to parents and higher authorities on the student’s presence will provide an added advantage over the previous systems.

Keyword: Biometric, Attendance System.

References:


Authors: V. Navya, P. Deepalakshmi


Abstract: Wireless body area networks with routing and collaborative fuzzy mechanisms for network analysis have become more efficient in today’s healthcare technology. In this article, a novel threshold-based probability theory and fuzzy logic cost-effective routing technique is proposed that depends on location and residual energy attributes to reduce the overall energy consumption among the sensing nodes and increasing network lifetime. Attributes such as energy and distance are considered for generating if-then rules and membership functions. A fuzzy conditional reasoning is performed using interference mechanism and a defuzzification methodology is applied on the computed cost value to make an efficient choice. Mamdani-Fuzzy logic toolbox in matrix laboratory is used to evaluate the simulation performance of the proposed method with that of other existing conventional methods. From the results obtained, it is observed that for different metrics, the proposed technique provides improvements in terms of energy efficiency, stability period and network lifetime.

Keyword: wireless body area networks; WBAN, fuzzy logic cost-effective technique, threshold-based probability theory, fuzzy conditional reasoning, distance, energy efficiency, healthcare technology.

References:


Authors: Energy Efficient Fuzzy Cost-Effective Routing for Transmission of Critical Physiological Parameters in Wireless Body Area Network under Emergency Scenarios

Abstract: Wireless body area networks with routing and collaborative fuzzy mechanisms for network analysis have become more efficient in today’s healthcare technology. In this article, a novel threshold-based probability theory and fuzzy logic cost-effective routing technique is proposed that depends on location and residual energy attributes to reduce the overall energy consumption among the sensing nodes and increasing network lifetime. Attributes such as energy and distance are considered for generating if-then rules and membership functions. A fuzzy conditional reasoning is performed using interference mechanism and a defuzzification methodology is applied on the computed cost value to make an efficient choice. Mamdani-Fuzzy logic toolbox in matrix laboratory is used to evaluate the simulation performance of the proposed method with that of other existing conventional methods. From the results obtained, it is observed that for different metrics, the proposed technique provides improvements in terms of energy efficiency, stability period and network lifetime.

Keyword: wireless body area networks; WBAN, fuzzy logic cost-effective technique, threshold-based probability theory, fuzzy conditional reasoning, distance, energy efficiency, healthcare technology.

References:


Authors: Energy Efficient Fuzzy Cost-Effective Routing for Transmission of Critical Physiological Parameters in Wireless Body Area Network under Emergency Scenarios

Abstract: Wireless body area networks with routing and collaborative fuzzy mechanisms for network analysis have become more efficient in today’s healthcare technology. In this article, a novel threshold-based probability theory and fuzzy logic cost-effective routing technique is proposed that depends on location and residual energy attributes to reduce the overall energy consumption among the sensing nodes and increasing network lifetime. Attributes such as energy and distance are considered for generating if-then rules and membership functions. A fuzzy conditional reasoning is performed using interference mechanism and a defuzzification methodology is applied on the computed cost value to make an efficient choice. Mamdani-Fuzzy logic toolbox in matrix laboratory is used to evaluate the simulation performance of the proposed method with that of other existing conventional methods. From the results obtained, it is observed that for different metrics, the proposed technique provides improvements in terms of energy efficiency, stability period and network lifetime.

Keyword: wireless body area networks; WBAN, fuzzy logic cost-effective technique, threshold-based probability theory, fuzzy conditional reasoning, distance, energy efficiency, healthcare technology.

References:

between data aggregation points in smart grid communication network. Computing, 99(1), 81-106.

Authors: R. Ananthakumar, K. Kartheeban

Paper Title: Effective Resource Allocation using Auction Mechanism in Cloud Computing

Abstract: Cloud computing (CC) is one of the fastest emerging technology. As we all know, cloud is a wide pool of resource which provides resources based on the users request. Any service can be provided as a service through cloud. As the cloud contains many resources, there may also wastage of resources. To reduce this wastage, cloud providers enter into auctioning of resources when the demand is high. Cloud computing includes distinct resources. Because of the complementary and supplementary effects between distinct assets, bidders have preferences not for just a single resource but also for a set of resources. Auctioning for a bundle of resources is called mergeable auction (MA). Dynamic resource allocation in on demand for a bundle of resource is proposed by using MA – PROVISION algorithm and the scenarios are simulated using Cloudsim, a simulator meant for cloud computing analysis.

Keywords: Cloud Computing, Auction, Bid, Dynamic Resource Allocation, Mergeable sale and Cloudsim.

References:
11. Sven de Vries and RakeshVohra, "Mergeable Auctions: An overview.",
Authors: T. Manjunath Kumar, R. Murugeswari

Paper Title: Deep Reinforcement Learning Based on Link Prediction Method in Social Network Analysis

Abstract: Improving the performance of link prediction is a significant role in the evaluation of social network. Link prediction is known as one of the primary purposes for recommended systems, bio information, and web. Most machine learning methods that depend on SNA model’s metrics use supervised learning to develop link prediction models. Supervised learning actually needed huge amount of data set to train the model of link prediction to obtain an optimal level of performance. In few years, Deep Reinforcement Learning (DRL) has achieved excellent success in various domain such as SNA. In this paper, we present the use of deep reinforcement learning (DRL) to improve the performance and accuracy of the model for the applied dataset. The experiment shows that the dataset created by the DRL model through self-play or auto-simulation can be utilized to improve the link prediction model. We have used three different datasets: JUNANES, MAMBO, JAKE. Experimental results show that the DRL proposed method provide accuracy of 85% for JUNANES, 87% for MAMABO, and 78% for JAKE dataset which outperforms the GBM next highest accuracy of 75% for JUNANES, 79% for MAMBO and 71% for JAKE dataset respectively trained with 2500 iteration and also in terms of AUC measures as well. The DRL model shows the better efficiency than a traditional machine learning strategy, such as, Random Forest and the gradient boosting machine (GBM).

Keyword: deep reinforcement learning; social network analysis; gradient boosting machine.

References:

Authors: V. Ramachandran, R. Ramalakshmi, K. Mathankumar

Paper Title: Accident Prevention and Traffic Pattern Analysis System for Hilly Regions

Abstract: In hilly regions, there will be a number of curves and hairpin bends. The roadway is one of the often-used modes of transport in these regions. Accident rate and death rate in hilly regions are increasing day by day. The roads in this region will definitely have bends and steep curves; hence, it is difficult to see the vehicles coming from the opposite side. The proposed system aims in reducing the risk of driving vehicle in the terrain region with hairpin bends and steep curves. The deployed controller with ultrasonic sensor senses the vehicle coming towards the bend and intimates it to the other side of the bend or curve; it gives three stages of LED alerts to the driver driving the vehicle from the opposite side of the hairpin bend or curve. It also senses the
speed of the vehicle, if the vehicle speed is high, it will alert the drivers through the buzzer. These alerts will indirectly convey the drivers to slow down the speed of the vehicle. The foremost focus of the proposed system is to prevent accidents for the drivers and passengers in order to decrease the death rates in hilly regions. This system also provides a way for analyzing the number of uphill and downhill vehicles in the hill stations by storing the data in the cloud. The analyzed data is be viewed over the internet through a web application. The web application serves as a traffic pattern analyzer for people who wish to travel by that road.

**Keyword:** Accident prevention, Downhill, Hilly regions, Internet of Things- IoT, Traffic pattern, Uphill.

**References:**

**Authors:** R. Raja Subramanian, Ramalakshmi Ramar

**Paper Title:** Design of Offline and Online Writer Identification Technique

**Abstract:** Writer inference systems tend to identify and verify the authorship of the handwritten documents. Each writer will have his own style of writing that uniquely identifies the writer. Hence authorship identification finds its application in forensic document analysis. It is also considered as one of the biometric features of a person, so helps in security to uniquely identify a person. Recognition of writers online has its application in detecting the identity thefts. That is compromising one’s social media account and sending messages to others as if he were an authentic sender. By discriminating the writing characteristics of the original and intruder, the masquerader can be identified. In this survey various works contributing to feature extraction and prediction of writers are discussed.

**Keyword:** Authorship identification, Run length features, Image transforms, Writer prediction.

**References:**

Authors: V. Baby Shalini
Paper Title: Appropriate Cluster Head Determination Strategy for extending the Wireless Sensor Network’s (WSN’s) Lifetime

Abstract: WSN is made with immense number of sensor’s which are deployed densely over an unattended area is responsible for taking environmental measurements, process the data and finally transmit the sensed data over a wireless channel to the sink that makes decisions based on these sensor’s readings. It is well known that the energy consumed for transferring one bit of data from individual sensor to sink is equivalent to a large number of arithmetic operations to be performed in a sensor processor. Thus, node clustering have been applied to hierarchical sensor networks with heterogeneity to augment the network existence whereas diminishing the necessary energy consumption. For that reason, Seven Level Balanced Energy Efficient Network Integrated Super Heterogeneous (SL-BEENISH) algorithm was designed and implemented. Simulation outcomes clearly demonstrated that SL-BEENISH attain better in comparison with TDEEC, BEENISH and IBEENISH with more stability period and network duration.

Keyword: Unattended, wireless, clustering, hierarchical.

References:

Authors: S. Ramkumar, J. MacklinAbraham Navamani, K. Sathesh Kumar, V. Vasanth, G. Emayavaramban, P. Sriramakrishnan, M. Illayaraja.

Paper Title: Classification of Eog Signal using Elman Recurrent Neural Network for Different Age Groups

Abstract: Disabled people in the world population were increasing constantly. So need of rehabilitative system also increasing every day. To overcome such wretched condition, we can use the biosignal techniques to device the rehabilitative devices. Rehabilitative devices may be called as Brain Computer Interface (BCI) or Human Computer Interface (HCI). We studied the performances of ten male subjects between the age group of 18 to 25 using mean features and Elman Recurrent Neural Network (ERNN). We conducted our study with two different age group from 18 to 21 and 22 to 25. The average classification accuracy of 91.00%, 93.57% were attained for the age group of 18 to 21 and 22 to 25. From the individual analysis we identified that performances from the age group 22 to 25 were appreciated then that of the age group from 18 to 21. In between the study we analyzed that subject s from the age group 22 to 25 performed all the following five tasks neatly and accurately without any deviation and disturbance compared with age group from 18 to 21. Finally from the obtained result we concluded that subject from the age group 22 to 25 was higher than that of age group from 18 to 21.

References:

Paper Title: Analysis of Attack Scenarios in Trust Authentication Protocols

Abstract: The inducing popularity of Wireless Sensor Network (WSN) is more concern with security factors. Secure communication is essential for demanding applications of WSN. Authentication being the crucial service due to deployment of nodes in an unattended environment, this paper focuses on analysis of popular trust authentication protocols such as Trust Aware Routing Framework (TARF), Trust Aware Secure Routing Framework (TARF), Trust Based Routing Scheme (TSR), Trust Guaranteed Routing (TGR) and Pair Key Based Trust Authentication Protocol (PTAP). Their performance is measured in sample simulation environment. To ensure perfect security in terms of authentication service, analysis of attack scenarios are performed. To implement this, fake attacks are created and the remaining number of legitimate nodes is measured in presence of attacks such as Sybil, black hole, replication and tampering. The analysis results in showing how each protocol withstand with different attack scenarios.


References:

Authors: M. Sornalakshmi, S. Balamurali, M. Venkatesulu

Paper Title: A Combined Horizontal Parallel Apriori Algorithm and Adaptive Frequent Pattern Growth Algorithm for Big Data Mining

Abstract: Due to the massive data size and complexity, big data mining using a sole computer is a problematic task. With the rapid increase in the database size, parallel and distributed computing systems can yield better benefits in the data mining applications. Parallelization of the Association Rule Mining (ARM) algorithms is a significant task in the data mining application for effectively mining the frequent items from the large-size databases. These mining algorithms allocate the database in a horizontal manner or increase the number of processors to decrease the overall time necessary for mining the frequent items. In this paper, a combined Horizontal Parallel-Apriori (HP-Apriori) and Adaptive Frequent Pattern (FP) Growth algorithm is proposed to divide the database both horizontally and vertically into four sub-processes, for parallel processing of all four tasks. The Horizontal Parallel-Apriori algorithm increases the speed of the mining process using an index file. Adaptive Binomial Distribution (ABD) is applied to the Frequent Pattern Growth Algorithm to find the minimum support for mining the optimal frequent items. Experimental analysis established that the combined algorithm outperforms in terms of minimizing the overall execution time and increasing the computational speed in high scalability.

180. 859-863
Authors: P. Sriramakrishnan, T. Kalaiselvi, S.T. Padmapriya, S. Ramkumar, K. Ponnozhi

Paper Title: Online Brain Image Repositories for Brain Disease Detection

Abstract: Brain image analysis is an emerging area of researchers to improve the diagnosis process more fast and accurate. One of the difficulties is getting the clinical dataset of patients from hospitals to test the performance of the proposed methods. Therefore, numerous online brain image repositories are available to promote the research works. It has manually segmented results to evaluate the accuracy of the developed methods. Each repository has different file format and focused on different problems like skull stripping, tumorous image classification, tumor type categorization, tissue segmentation and tumor with substructure segmentation. This paper gives detail information on famous brain datasets with their purpose.

Keyword: Brain repositories, brain datasets, brain disease detection, skull stripping, BraTS datasets, WBA datasets, IBSR datasets

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10. Internet Brain Segmentation Repository, Center for Morphometric Analysis at Massachusetts General Hospital, dataset available at: http://www.cma.mgh.harvard.edu/ibsr/index.html
Authors: C. Aanandha Subramanian, K. Suthendran, M. Satheesh Kumar

Paper Title: SIM Forensics: Extraction and Preparation of Digital Evidence using Sim Xtractor

Abstract: In each and every mobile phone the SIM card plays a major role in communicating the information. In a crime if a mobile phone is been taken as the evidence, the first and the foremost thing is to investigate the SIM card. Though the evolution of smart phone is very rapid without the SIM card the smart phone is uncertain in communication. The SIM card stores some valuable information like call logs, messages, contacts etc. . . . For extracting those information we need a tool. In this experiment we are using a tool known as SIMXtractor from CDAC. It is not a open source tool. By using this tool we are able extract those information from the SIM card.

Keyword: SIM card, SIMXtractor, SIM Analysis, Information in SIM.

References:
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3. http://commons.erau.edu/adfs/
4. Forensics and Sim cards: An overview Fabio Casaderi, Antonio Savoldi, Paolo Gubian, University of Brescia
5. Forensic Importance of SIM Cards as a Digital Evidence by Ankit Srivastava* and Pratik Vatsal Institute of Forensic Science and Criminology, Birla Institute of Technology.

Authors: M. Prasath, B. Perumal

Paper Title: Sustainable Software Agent Programming

Abstract: Since all network vulnerabilities cannot be predicted and detected in advance and malicious intruders cannot prevent penetration into the system in any case, Intrusion Detection System (IDS) is essential to the security of a network system. Intrusion detection system technology based on mobile agents has been commonly utilized over the last several years to detect intrusion via the distributed network. Software agents are software components that run on the display device to aid, or take responsibility for, the purchase of physical information. These agents operate on the device's standard operating system and utilize low-level memory access requests from the Application Programming Interface (API) or use a specialized operating scheme for data acquisition. The system should be available and allow customized software to be executed for this strategy. A dedicated analyst interface agent presents the output of the multi-agent detection layer to the operator which retrieves more detailed information to facilitate incident analysis. Our efficiency findings demonstrate the possibility to combine high speed hardware with the sophisticated agent software based on agents.


References:
Authors: Senthil Kumaran, S, Balakannan S. P.

Paper Title: Open Source Internet of Things Platforms

Abstract: Internet of Things (IoT) is rapidly growing and stresses every field of computer science. With the proliferation of heterogeneous devices and things that are connected and on boarded on the internet [1], standards play an important role in order to keep the IoT eco-system growing and inter operate with each other. Formulating standards and keeping them open is important. It is not enough to keep the standards open but also the software that enables these standards should be open, in order to cater to the demanding needs of IoT. Many IoT vendors, organizations and researchers are advocating and encouraging the use of Free Open Source Software [2] in IoT deployments at all levels. When many devices and things are connected there should be an easy way to establish the environment and monitor the entire IoT system at a central location for ease of management, which are the expectations of the IoT platforms that will be discussed in this paper. This paper surveys the different strictly Open Source Software [2] platforms that are available for IoT and proposes some common features that should be part of any IoT platform.

Keyword: internet of things, iot, survey, platforms, open source, foss

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33. ThingsBoard https://thingsboard.io/

Authors: J. Arunadevi, K. Ganeshamoorthi, R. Rampriya

Paper Title: Application of Feature Weighting for the Intensification of Data Classification

Abstract: Classification is the supervised learning technique which is applied in many of the real time applications. In this study we have considered three classifiers which are widely used and then the intensification of the classifiers are considered. Among various methods to improve the performance of the classifiers, this research concentrate on the feature weighting techniques applied for the classifiers. This analysis is done based on the results obtained from the Rapidminer tool. Here we have deployed four feature weighting techniques for the intensification of the three classifiers. It is tested with three dataset. The experimental environment and the results are discussed in detail.

Keyword: Feature weighting, Decision Tree, KNN, Naïve bayes

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Authors: D. Nethra Pingala Suthishni, Anna Saro Vijendran

Paper Title: Performance Evaluation of Intrusion Detection System based on LDK, NCA Algorithms and GBC Method

Abstract: The growth of wireless technology has concerned the necessity of Intrusion Detection System (IDS). To pact with a several arising security impacts and other problems in the communication atmosphere. Many of the researchers had developed several algorithms to cope with the malicious things in Mobile Ad hoc Networks (MANETs). Supervision of the network behavior IDS have to run all over the network and all the time on every node. This approach is costly overhead for mobile device and computational resources. These devices are powered by batteries in terms of power. Least Degree for K (LDK), Node Categorization Collaboration among the nodes are accomplished by the implementation of algorithm Node Categorization Algorithm (NCA) and Grid Based Clustering (GBC) algorithms that will reduce the time delay and overhead process. Validation approach of improved Intrusion Detection system is compared with the GBC approaches. The Improved IDS model confesses intrusions and malicious nodes in DSR Protocol.

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Authors: Sherin Mariam John, K. Kartheeban

Paper Title: Spam Detection in Online Comments Based on Feature Weight Breakdown

Abstract: The user reviews posted online by the Internet users about a product plays a vital role in determining its success in the market. The reviews also influence the purchase decision of the consumers. The chances of getting cheated by fake reviews are very high because detecting spans in reviews is not an easy task either manually or automatically. Hence there is a need to evolve new techniques and methods to outperform the smartness of spammers. In this paper, we propose a Heterogeneous Feature Weight Analysis framework for extracting various features related to the review and certain parameters are calculated from these features to form a pattern for deceptive reviews. The features associated with the review are review content, review rating and user centric characteristics which are pulled out from the dataset retrieved from Amazon. This analysis has helped us to categorize reviews into normal and suspicious reviews. We have executed our algorithm in Python software and were able to achieve an accuracy of 71.6% inprediction.

Keyword: Fake reviews, detect spam, sentiment analysis, feature analysis, online reviews

References:
Generally, visually challenged people are unable to read books as like as a normal person. They use Braille script for reading and writing which is one of the basic techniques for them to read books and to take notes. A survey has been taken in the year 2017, in which they declared that people were completely visually impaired is around 36 million and 25% of people affected with moderate visual impairment. Nearly 200 million people got affected with complete visual impairment and 1.1 billion people with near vision impairment. Nearly 5 million of visually impaired people are women. Due to various problems faced by visually challenged people several hospitals were established for giving therapy for them. Around 1,54,000 hospitals are serving for the visually challenged peoples in India. According to care survey conducted by CAGR, the growth of hospitals for visually challenged will increase more than 100% i.e. 3,25,000 by the year 2035. Usually many hospitals are working for research works on visually impaired people. According to care survey conducted by CAGR, the growth of hospitals for visually challenged will increase more than 100% i.e. 3,25,000 by the year 2035. Usually many hospitals are working for research works on visually challenged people.

Keywords: Optical character recognition, Lab VIEW, Braille Script, Visually challenged.

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Abstract: Fetal electrocardiogram (FECG) signal holds highly precise indispensable particulars, which potentially support physicians to diagnosis the existence of congenital heart syndromes and make instantaneous assessment if required. There are several FECG examination procedures applied to have precise fetal ECG, but unflatteringly some methods have certain snags. The goal of this study paper is to exemplify the range of observation techniques to offer proficient and effectual means of understanding along with their mode of examination at different gestational age. A comparative study has been accomplished to demonstrate the best approach.

Keyword: FECG, Scalp FECG, STAN-STA Analyzer, Abdominal electrocardiogram.

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Authors: K. Janani, M. Poornima Devi, S. Mercy Golda, M. Anisha, G. Vishnuvarthanan, S. Sakthivel

Paper Title: Techniques to Prevent Bedsores in Physically Disabled Patients

Abstract: Inspite of improvements in medical industry and healthcare, pressure ulcers prevention remains high in hospitalized patients. These pressure ulcers prevails mostly in the patients who stays in hospital for long-term, assisted living at home, paralysed patients and with other physical disorders excluding of their diagnosis and health care needs. Pressure ulcers are known as a kind of skin lesion which influences the patient’s integrity of life and their caregiver become an significant reason of morbidity and in some aspects increase in the mortality. Managing and treating pressure ulcers are too costly. Though many devices have been designed with the aim of pressure ulcer prevention and cure but most of the existing technically complex devices have been exposed to be no more efficient and cost effective. Prevalence of these ulcers can be achieved by reducing pressures at bony prominences since pressure ulcers are high-cost and high adverse event. The objective of this manuscript is to review recent articles, with particular emphasis on prevention of bedsores in physically disabled patients.

Keyword: Prevalence, Pressure Ulcers, Paralyzed Patients, Mortality, Bony Prominences, Pressure Elevation.

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Authors: M.Vallimeenal, L. Pravina, M. Anisha, N. Vigneshwari, M. Sushmitha, C. Jim Elliot

Paper Title: Collagen Based Sponges for Wound Healing

Abstract: Nowadays, wound healing is the common and simple problems occur in our society. Wound healing is the multi factorial process which includes inflammation, reepithelialisation, collagen deposition, and angiogenesis. Wound repair system is indispensable to enhance the proper functioning of skin. Normally, wound dressing is either momentary or lasting, wound dressings has been intended to improve the wound repair. Those wound dressing are required to wrap the large surfaced open wounds such as widespread burns, pressure ulcers, foot sores etc., wound healing substance should have some important features such as, high healing efficiency, anti-scar formation, providing favourable atmosphere for wound management. The collagen plays an important role in tissue formation and has more effect on wound healing. In this work collagen sponge is prepared from fish scales and to increase the antibacterial efficacy need extract has been added.

Keyword: Wound Healing, Multi factorial process, Wound dressing, Collagen.

References:
Abstract: A robotic arm is a Programmable mechanical arm to replicate the functions of human arm. They are widely used in industries. Human robot-controlled interfaces mainly focus on providing rehabilitation to amputees in order to overcome their impairment or disability leading them to live a normal life. The major objective of this paper is to develop a movable robotic arm controlled by EMG signals from the muscles of the upper limb. In this system, we mainly focus on providing a low 2-dimensional input derived from electromyography to move the arm. This work involves creating a prosthetic system that allows signals recorded directly from the human body. The arm is mainly divided into 2 sections, control section and moving section. Movable part contains the servo motor which is connected to the Arduino Nano board, and it helps in developing a motion in accordance with the EMG signals acquired from the body. Control part is the part which is controlled by the operation in accordance with the movement of the amputee mainly the initiation of the movement with respect to the threshold fixed in the coding. The major theme of the project is to provide an affordable and easily operable device that helps even the poor sections of the amputated society to lead a happier and normal life by mimicking the functionalities of the human arm in terms of both the physical, structural as well as functional aspects.

Keyword: Electromyography, Robotic Arm, Prosthesis, Control Section, Moving Section, Amputees.

References:

Authors: C. Jim Elliot, V. Aarthirani, J. Sivasangari, V. Umasankari, P. Sowmiya

Paper Title: Detection of Skin Cancer using Optical Method

Abstract: Skin is the one of the most important organ present in our body that does some of the important functions like protection, temperature regulation etc. Due to some conditions, skin is affected by many abnormalities. The abnormalities may be smaller or larger, which depends on the damage caused to the skin. Some abnormalities of skin are irritations, allergic reactions, swelling etc. One of the most major problems that affect the skin completely is of skin cancer. Skin cancer is the most common type of cancer that affects the 40% of people in all over world. It may be caused due to several factors like genetic, working in hazardous chemical areas, exposure to sun, repeated X-ray exposures etc. All of these factors affects the skin and causes skin cancer. Skin biopsy is a major technique used at present to detect all types of skin cancers. As this biopsy method is invasive, and takes more time to check the cancer tissue, we are using this optical method for detection of skin cancer. Optical imaging is the upcoming technology that plays the major role in all fields. In this method Near Infra-Red (NIR) light source is passed into the affected skin region. The transimpedance amplifier is used to amplify the output from photodiodes. Then the output from the photodiodes is connected to the Digital Storage Oscilloscope (DSO) in which the waveform shows the variations due to skin cancer.

Keyword: Digital Storage Oscilloscope, near infrared light source, Photodiodes, skin cancer.

References:

Authors: S. Vigneshwaran, Vishnuvarthan Govindaraj, N. Anitha, M. Pallikonda Rajasekaran, Yu-dong zhang, T. Arunprasad

Paper Title: An Automated Map Process Based Improved Fuzzy C-Means Algorithm for Pathological Detection in MR Image

Abstract: Automated brain MR slices segmentation process is difficult, and further difficult is the process of detecting the tumor and tissue regions, with a constraint of delivering higher segmentation accuracy within reduced processing time. Automated algorithms were developed with an onus of reducing the intricacies involved during the manual inspection of the pathologies (radiologist/operator involvement). The shortages of an automated process are overthrown with the development of a novel combination of soft computing algorithms, and it emplos automated map and clustering approaches. Self-Organizing map (SOM) and Improved Fuzzy C-Means clustering (IFCM) are the automated map and clustering approaches that are used to precisely provide the MRI slice analysis. The authors have utilized the quality metrics, such as Dice overlap Index (DOI), Jaccard index, Peak Signal to Nosie Ratio (PSNR) and Mean Squared Error (MSE) for verifying the performance of the SOM based IFCM, and the recommended algorithm tends the corresponding values of the above as 84.83%, 91.69%, 0.0824 and 49.25dB. The novel SOM- IFCM algorithm delivers better demarcation outcomes when compared with other soft computing approaches. The exemplified outcomes of the proposed SOM-IFCM
algorithm provides superior segmentation quality of MR brain slices and offers versatile usage to the radiologists.

**Keyword:** Improved fuzzy c-means clustering, self-organizing map (som), MR brain image analysis, pathological detection, tumor identification.

**References:**

**Authors:** S.Vigneshwaran, Vishnuvarthan Govindaraj, N.Anitha, M.Pallikonda Rajasekaran, T.Arupnrasath

**Paper Title:** Examining the Pathological Portions in MR Brain Slices using Automated Map and Improved Fuzzy K-Means Clustering

**Abstract:** Identification of pathological structures (tissue and tumor region) in brain MR images is executed by an automated algorithm, and it requires improvement in processing time and segmentation accuracy. Oncological experts have predilections in detecting the tumor masses that have similar resemblance with the tissue matters. An innovative amalgamation of soft computing algorithms, such as the automated map and clustering technique is presented through this paper. The Self-Organizing Map (SOM), a subsection of map technique, and the clustering process named the Improved Fuzzy K-Means clustering (IFKM) are used for the automated segmentation of MR brain structures in this paper. The segmentation outcomes of the algorithm are accurate for brain MR image analysis, and it was evaluated using Jaccard index (TC), Mean Squared Error (MSE), Dice overlap Index (DOI) and Peak Signal to Noise Ratio (PSNR) values in this paper. TC and DOI values were delivered as 84.43%, 91.43%, respectively. The efficiency of this algorithm is compared with other traditional approaches, and it has been confirmed that is better visualization of brain structures, which will greatly assist during Oncological treatment.

**Keyword:** Improved fuzzy k-means clustering, tumor identification, pathological detection, self-organizing map (som), MR brain image analysis.

**References:**
Keywords: blood particles, blood flow separator, passive blood flow, filtration, hydrodynamics, microfluidics.

References:


Authors: J. Francis Felix Sindhuja, S. Chitra, K. Deepthi, M. Anisha, R. Madhan Balaji

Paper Title: An Electrical Stimulator to Suppress the Nervous Pain in Diabetic Neuropathic Patients

Abstract: Peripheral neuropathy is an acute disorder in diabetic patients who are suffering a very agonized pain in their peripheral nerves. Symptomatic relief can be achieved by some analgesic pain killers. One of the best approaches is using an electrical stimulation method where the sensory nerve fibers get excited by the application of pulsed currents at the site of pain. This could block the pain signals from reaching the brain, followed either by the pain gate theory or opioid mechanism. This study primarily focuses the feedback principle where the stimulus is given with respective to the patient’s skin intensity to avoid skin burning in therapy. The opioid mechanism has been proved scientifically that it provides long-lasting pain relief even after the stimulation. This paper documents the design and operation of feedback system which provide a constant output by varying the width of pulses. Thereby, the patient’s pain as well as the sufferings of skin reactions upon stimulus is reduced. As this electrical nerve stimulation strategy is a simple, safe, non-pharmacological, cost-effective it proves to be a better alternative for pain relief.

Key word: Diabetic peripheral neuropathy, Feedback principle, Frequency, Neuropathic pain.

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Authors: Anitha Narayanan, Yudong Zhang, Pallikonda Rajasekaran Murugan, Vishnuvarthan Govindaraj, Vigneswaran Senthivel, Sakhthivel Sankaran

Paper Title: Parameterization of BFO Algorithm for the Improved Functionality of MFKM Technique for Better Pathological Identification in Brain MR Image

Abstract: Intensity inhomogeneity, high level of noise, partial volume effect and poor image contrast are the major artefacts in medical image segmentation. Any of these artefacts might lead to unclear boundaries of tissues, hence the segmentation of tissues in the MR brain image cannot be determined with high accuracy, and this would be a problem to the radiologists to diagnose or to start the treatment because of the lack of facility to operate over the brain in vivo condition. This makes the radiologist and surgeons/experts to take time to come for the conclusion on pathology of a particular patient. So, the radiologists and experts need to give more exertion when this condition is applied for many patients at a day, to diagnose and to start treatment. To make this effortless to them, also for accurate diagnosis, this research paper provides an robust algorithm using the Modified Fuzzy K-Means (MFKM) and Bacteria Foraging Optimization (BFO) algorithm, which segments the abnormal tissues among the normal tissues from MR brain images with high accuracy. The accuracy of the Improved MFKM (IMFKM) algorithm is obtained in terms of Sensitivity and Specificity, and the proposed algorithm proves better segmentation results than the other conventional algorithms.

Key word: Bacteria Foraging Optimization, Magnetic Resonance (MR) Image Segmentation, Modified Fuzzy K-Means, Image Intelligence.
K – Means, Tissue Segmentation, Tumor Identification.

References:


Authors: Jeya Bright Pankiraj, Vishnuvarthan Govindaraj, Pallikonda Rajasekaran Murugan, Arun Prasath Thiyagarajan

Paper Title: Development of a Scalable Coding for the Encryption of Images using Min-Max Block Truncation Code

Abstract: In today’s world, security of data from intruders and hackers during transmission and reception needs image encryption, and to reduce space requirement and faster transmission needs image compression, which tend to be the emerging research arenas. Especially for lossy compression, rebuilding of image equivalent to the transmitted original image is highly unachievable. So far many papers are reported for scalable coding on unencrypted images. We propose a scalable coding for encrypted images by Min-Max Block Truncation Coding Technique(MMBTC). The Min-Max Block Truncation Coding Technique compress the raw image and later encrypted by pseudorandom number, and the encoded bit streams are transmitted. The secret key is encryption key and communicated between encoder and decoder. In the decoding process, the compressed image is recovered with secret key and the raw image is rebuilt by using Min-Max Block Truncation Coding Technique.

Keyword: Block Truncation Coding, Image Encryption, Min-Max Block Truncation Coding, Scalable Coding.

References:

Abstract: A dynamic voltage restorer (DVR) is a FACTS gadget, which is utilized fundamentally in transmission lines to remunerate the voltage list and voltage swell that happens on hold. A DVR is a circuit, which made out of intensity electronic parts like diodes and thyristors. It is generally utilized because of its miniature size and proficient activity. This paper proposes a cascaded inverter type DVR to repay voltage hang in the utilities for power appropriation, which is used for country zone advancement. The DVR infuses a voltage arrangement to the framework voltage. The multi carrier PWM strategy is utilized to produce terminating voltage to inverter. The proposed framework decreases the voltage list and complete consonant bending of the conveyance framework. The proposed framework is simulated utilizing the MATLAB/Simulink.

Keywords: Power quality, Multilevel inverter, Total harmonic distortion (THD), Dynamic voltage restorer (DVR), Multi carrier pulse width modulation (MCPWM).

References:
BTE. Thus composite scaffolds of appropriate polymer/ceramic combination would greatly benefit BTE.

References:

Authors: V. Yogeshwar Chakrapani, T. S. Sampath Kumar

Paper Title: The Role of Calcium Phosphates and Electrospun 3D Scaffolds in Bone Tissue Engineering Scaffolds

Abstract: Bone is a naturally occurring nano-composite structure bestowed with an innate regenerative potential. When this regenerative potential is not able to cope up with the bone loss, external assistance in the form of scaffolds, cells and signals are needed. This forms the basis of bone tissue engineering (BTE). CaP ceramics like hydroxyapatite (HA), calcium deficient hydroxyapatite (CDHA) and β-tricalcium phosphate (β-TCP) are an excellent choice of material for hard tissue reconstruction. However, they are brittle in nature and solid ceramic constructs are not conducive for vascularisation, thus limiting their application as scaffolds for BTE. Thus composite scaffolds of appropriate polymer/ceramic combination would greatly benefit BTE. Electrospinning is an extremely versatile methodology that is predominantly used for the fabrication of nanofibrous structures that closely mimic the ECM. Nevertheless, electrospinning of 3D structures is still a challenge. Various innovations in the electrospinning process are being tried out in order to produce true 3 dimensional structures that can act as scaffolds for BTE. The current paper reviews such technologies and also suggests the way forward for research in this area.

Keyword: 3D structures, Bone tissue engineering, Electrospinning

References:
One of the alarming threats to mankind and other living organisms is environmental pollution. This demands the suitable monitoring system even from a remote location.
Innovation in technology could serve as the best solution to the above problem. The chemical properties are measured of the textile effluent and an announcement will be made for proactive measures if it exceeds the prescribed limit. The quality parameters of the effluent are continually monitored and information recorded in the cloud by means of different sensors. The parameters such as pH, and dissolved oxygen of the effluent can be measured and surrounding air quality also measured. The information stored can be tracked by the competent authority via the Web page. The threshold value for the cloud information is automated to make an automatic comparison with the detection system and send an alert to the authorities involved.

**Keyword:** Water Pollution, Air Quality, Sustainable develop- ment goals, Raspberry Pi, pH measurement, Turbidity measure- ment, Textile industry, IoT.

**References:**

**Authors:** R.Kanniga Devi

**Paper Title:** A Machine Learning-based Online Social Network Analysis for 360-degree User Profiling

**Abstract:** This paper aims to analyse the online social network for reconnaissance of people for finding their potentiality. The work considers one of the famous social networking sites, Twitter, where people express their thoughts and ideas, through which the people in the site knowingly or unknowingly reveal the information about themselves as such personal interests, likes and dislikes. The Machine Learning technique facilitates the work to mine the tweet data of a person to get his/her 360-degree profiling. This profiling is helpful to identify the personality type of a person, which is essential for the Government to identify the people involved in spreading the fake news in Twitter.

**Keyword:** Machine Learning, Natural Language Processing, Online Social Network, Personality Test,
References:

Authors: P.K.Kavitha, P.Vidyha Saraswathi

Paper Title: Machine Learning Paradigm towards Content Based Image Retrieval on High Resolution Satellite Images

Abstract: In the current era, content based image retrieval based on pattern recognition and classification using machine learning paradigm is an innovative way. In order to retrieve high resolution satellite images Support Vector Machine (SVM) a machine learning paradigm is helpful for learning process and for pattern recognition and classification; ensemble methods give better machine learning results. In this paper, SVM based on random subspace and boosting ensemble learning is proposed for very high resolution satellite image retrieval. The learned SVM ensemble model is used to identify the images that most similar informative for active learning. A bias-weighting system is developed to direct the ensemble model to pay more attention on the positive examples than the negative ones. The UCMerced land use satellite image dataset is used for experimental work. Accuracy and error rate are found to be precise. The tentative effects illustrate that the proposed model derived enhanced retrieval accurateness at the optimum level as well as significantly more effective than existing approaches. The proposed method can diminish the gap dimensionality and conquer the difficulty. The comparisons are evaluated by using precision and recall measurements. Comparative analysis observed that the retrieval time for a particular image have been reduced and the precision is increased. The primary aim of this paper is to represent the significance of ensemble learning with support vector machine in efficient retrieval of image.

Keyword: Boosting, Ensemble learning, Machine learning, Random subspace, Support Vector Machine

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17. Navneet Kaur, Sonika Jindal, and Bhavneet Kaur, “Relevance Feedback Based CBIR System Using SVM and Bayes Classifier”, Second International Conference on Computational Intelligence & Communication Technology, 978-1-5090-0210-8/16 $31.00 © 2016 IEEE.

Authors: S.Dhanasekaran, B.S.Murugan, V.Vasudevan

Paper Title: An Intelligent Big Data Analytics System using Enhanced Map Reduce Techniques

Abstract: An Intelligent Big Data Analytics System using Enhanced Map Reduce Techniques include a set of Methods, applications and strategy which helps the organization and industry to bring together the data and information from outside sources and internal systems, as well as it is used to collect, classify, analysis and run the queries against the data and make the report for effective decision making. The Enhanced Map Reduce Techniques based on K-Nearest Neighbor (KNN) clustering Strategy works efficient as well as in an effective
manner. We found that the existing MR – mafia sub space clustering Strategy have not performed effectively. Many clustering techniques are adopted in real world data analysis for example customer behavior analysis, medical data analysis, digital forensics, etc. The existing MR- mafia sub space clustering Strategy is inefficient because of continuously increase in the data size, and overlaying of the data blocks. The proposed KNN clustering Strategy mainly focused on the enhanced the Map Reduce techniques, and then to avoid the unnecessary input and output data, optimize the data storage in order to achieve the best out sourcing of data privacy. The proposed KNN clustering Strategy works effectively and that can be outsourced to cloud server.

**Keyword:** Big Data, Map Reduce, KNN clustering Strategy, Cloud Server, Subspace Clustering Strategy.

**References:**

1. MR-Mafia: Parallel Subspace Clustering Strategy Based on Map Reduce for Large Dimensional Data sets, ZhipengGao, YidanFan, and 2018 IEEE.
11. Enhanced Map Reduce Techniques for Big Data

**Authors:** R.Sumathi, M.Venkatesulu

**Paper Title:** Segmenting Images like MR Brain, Breast and Scintigraphy Thyroid Gland using Fuzzy C Means Based Morphological Reconstruction Filters

**Abstract:** Our study has introduced a new modified methodology using Fuzzy C Means clustering with morphological reconstruction filters to segment the abnormal parts in multimodal images such as MR brain, MR breast and scintigraphy thyroid gland.MR scanning is helpful to analyze the internal behavior of the tumor, whereas scintigraphy scanning is used to analyze the shape and location of the gland and also prevent the cancerous stage. We have used samples from public dataset like Harvard brain dataset for the brain, RIDER for breast and TCGA – THCA for the thyroid gland. In the first step, we preprocessed the image by applying the median filter which removes the noisy information present in the given input image. In the second step, Fuzzy C Means clustering was used to segment the boundary of the abnormal part in the multimodal images. In the last step, morphological reconstruction filters are used to segment the accurate shape and location of the abnormal part in all the three multimodal images. The performance and the efficiency of the segmentation were computed using the measures such as entropy, eccentricity, MSE, PSNR, sensitivity, specificity, accuracy and computational time. The results from our modified method show an accurate segmentation for all multimodal images within 4ms and its accuracy rate is nearly 95% for all types of images when compared with existing techniques such as K-means and GA with K- Means. A new modified method using Fuzzy C means clustering with morphological reconstruction filters was applied to segment the abnormal part accurately with minimum duration in all multimodal images

**Keyword:** Image Segmentation, Median Filter, Fuzzy C Means Clustering, Performance Measures

**References:**

analysis”, Biomedical Research - Computational Life Sciences and Smarter Technological Advancement. 2rd 2018, pp S124-132


42. USDA Rural-urban Continuum Codes, 2003.


<table>
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<tr>
<th>Authors:</th>
<th>K. Muthamil Sudar, P. Deepalakshmi</th>
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<tr>
<td>Abstract:</td>
<td>Software Defined Networking and OpenFlow protocol have been recently emerged as dynamic and promising framework for future networks. Even though, programmable features and logically centralized controller leads to large number of security issues. To address the security problems, we have to impose Intrusion Detection System module to continuously keep track of the network traffic and to detect the malicious activities in the SDN environment. In this paper, we have implemented flow-based IDS with the help of hybrid machine learning technique. By collecting the flow information from the controller, we classify the traffic, extract the essential features and classify the attack using machine learning based classifier module. For classifier, we have developed hybrid machine learning model with the help of Modified K-Means and C4.5 algorithm. Our proposed work is compared with single machine learning classifier and our experimental results show that, proposed work can classify the normal and attack instances with accuracy of 97.66%.</td>
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<td>17. <a href="http://mmlab.org/overview/">http://mmlab.org/overview/</a></td>
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<th>Authors:</th>
<th>P. Chinnasamy, P. Deepalakshmi, V. Praveena, K. Rajakumari, P. Hamsagayathri</th>
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<tr>
<td>Paper Title:</td>
<td>Blockchain Technology: A Step Towards Sustainable Development</td>
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<tr>
<td>Abstract:</td>
<td>The goal of this research paper is to summarize the collected works on blockchain concepts, blockchain application area, blockchain problems, and draw appropriate conclusions. Since Blockchain is relatively an innovative technology, a representative sample of research is presented, spanning the last ten years, starting with the early work in this field. Different types of Blockchain use and other digital ledger techniques have been investigated, including their challenges, security and privacy issues. The key motivation of the review study is to detect the most favorable direction for future use of blockchain and research challenges in blockchain.</td>
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<td>Keyword:</td>
<td>Keywords: Blockchain, Bitcoin, Sustainable Supply chain, Smart Contract, Peer-Peer Networking, Consensus.</td>
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<td>References:</td>
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<td>2. Edvard Tijan, Saša Aksentijević, Katarina Ivani and Mladen Jardas, Blockchain Technology Implementation in Logistics, Sustainability 2019, 11, 1185; doi:10.3390/su11041185</td>
<td></td>
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A blockchain is a collection of records with cryptography. All records or exchanging information are checked by all members. Once enter the information’s into the blockchain record means, it will be never changed or deleted. Distributed and Peer authentication technology is used in blockchain technology. A blockchain is maintaining a record in decentralized with high secure manner, so all users are easily accessed. Blockchain technology is mainly used in financial sectors and banking sectors. This new technology mainly used in IoT, Gaming and entertainment sector, Government Public services, online fund transformation, etc. In today world, blockchain technology mainly used exchanging the documents and money. In blockchain technology is based on the bit coin money transaction. This bit of coin technology will be reducing the intermediate of the money transformation. The main scope of the blockchain technology is both money related and non-financial world.

**Keyword**: Blockchain, bit coin, cryptography.

**References**:
Influence of Claim Management in Construction Industry

Most construction projects are suffering from claims due to many reasons. Claim emergencies have risen for ten years due to the critical political situation. These claims have a bad impact on all groups who were in the work construction field. The impact of the claim could be followed to cost overrun, loss of efforts and suspension of work, contract termination. This investigation means to recognize the real reason for causes of claim in construction and demonstrate their difference between respondent concerning individual, company and organization traits. It also aims found the important factors in developing for the management of construction project claim to predict claim occurrence and to mitigate the negative impact of a claim. The objective of the study achieved through a valid questionnaire obtained from several construction companies. The questionnaire survey was conducted involving the contractor, consultant, client point of view. The result of the questionnaire encountered in the SPSS software for finding the major factor that affects the construction. The investigation means to recognize the real reason for causes of claim in construction. My work aims to distinguish the various claims through review paper and to recognize the most impacted causes of claim in our region.

Authors: Mukilan K., Ramesh babu C., Muthukannam M.

Paper Title: Influence of Claim Management in Construction Industry

Abstract: Most construction projects are suffering from claims due to many reasons. Claim emergencies have risen for ten years due to the critical political situation. These claims have a bad impact on all groups who were in the work construction field. The impact of the claim could be followed to cost overrun, loss of efforts and suspension of work, contract termination. This investigation means to recognize the real reason for causes of claim in construction and demonstrate their difference between respondent concerning individual, company and organization traits. It also aims found the important factors in developing for the management of construction project claim to predict claim occurrence and to mitigate the negative impact of a claim. The objective of the study achieved through a valid questionnaire obtained from several construction companies. The questionnaire survey was conducted involving the contractor, consultant, client point of view. The result of the questionnaire encountered in the SPSS software for finding the major factor that affects the construction. The investigation means to recognize the real reason for causes of claim in construction. My work aims to distinguish the various claims through review paper and to recognize the most impacted causes of claim in our region.


References:
Normally Rice Husk Ash (RHA) is treated as agricultural waste that do not afford any human feed products across the globe, these kind of agricultural waste may be converted into a convenient product and also M sand is used as a substitute for the river sand, the proportions of river sand from 100%, 75%, 50%, 25%, 0% were restored by M sand, along with that rice husk ash in various proportions from 0%, 5%, 10%, 15%, 20%, 25%, 30% to determine the optimum percentage of rice husk ash without affecting strength properties of bricks. The optimum restoration of 35% of RHA delivered the average compressive strength of 5.34 MPa which is higher than that of common buildingbricks.

**Keyword:** RHA- Rice Husk Ash, M Sand – Manufacturing sand

**References:**


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Abstract: This project deals with the optimizing the process and eliminating the waste in Four Wheel Drive front axle sub assembly line. Four wheel drive sub assembly line consist of 20 different sub-assemblies are available. In which Axle housing sub assy takes more time to complete i.e. around 20.8 min which is more than TAKT time. In this most fatigue operation is Bush pressing which is done by manual hammering. Due to the manual hammering process TAKT time increases and improper bush assy into the axle housing which leads to failure in the front axle function which results in warranty claims thus increasing the external cost to the company. As the existing process is manual, the accuracy of the pressing operation is not to the standards, while pressing the bush, there is no assurance of full placement of the bush in the axle, also the fatigue is more, and there may be chances of lack of skill in the work. The interference tonnage is found to be 3 to 4 tonnes and so the intensifier unit for the appropriate pressure is to be designed initially 100% inspection is done after bush pressing to check correct position of bush assy, internal diameter of the bush using gauges, Further through PFMEA critical process are identified for failure.

Keyword: SMED – Lean, SMED, PFMEA.

References:

Authors: Narayanan Selvapalam, Ramesh Prakash, M. Sivasubramanian, Karuppasaamy Karpagalakshmi, Lakshminarayanan Piramuthu

Abstract: Copper nanoparticles are the excellent resources for several applications, that include future nano-based circuits, wound healing materials and many more. Here, we have explored the synthesis of copper nanoparticles by electrolytic method of reduction using amino acids as capping agent. Unlike the other methods of nanoparticles, electrolytic synthesis is a non-toxic way of preparation and our amino acid capped copper nanoparticles were analyzed by SEM and XRD.

Keyword: Electrolytic method, Copper nanoparticles, Amino acids, capping agent.

References:

Authors: T. Premkumar, K. Shanmugam, V. Kandeelan


characterized by SEM analysis. The imaging was done to determine the morphological structure of the sludge and to view the bacterial growth on the surface of the sludge.

**Keyword:** Anaerobic Digester, Biogas, Kinetic studies Poultry waste.

**References:**


**Authors:** Sanglimuthukumar J, Winowlin Jappes J T, Siva I, Brintha N C

**Paper Title:** The Low Cost, High Performance Material for Automotive Application

**Abstract:** Recently, composite materials are used in various automotive applications. The reasons for composite materials are low weight and can withstand high strength. The present work focuses on the preparation and characterization of some advanced Fiber metal laminate (FML) like Al/BF with epoxy, Al/CF with epoxy and its automotive application. Fiber metal laminate is the arrangement of metal fiber, resin in required stacking order. The required fiber metal laminate was fabricated using compression moulding process and the samples were subjected to wide range of mechanical and thermo mechanical characterizations such as tensile strength, impact, erosion wear and flammability test respectively. All the tests are done as per ASTM standards. The applicability and replaceability of the material with conventional automotive materials were studied and results were tabulated.

**Keyword:** FML, Aluminium (Al), Basalt fiber (BF), Glass Fiber (GF), Ceramic Foam (CF), compression moulding, mechanical, thermo-mechanical properties, automotive application.

**References:**


The proper mixing of the fuel and the air before the entry of engine makes the automobile vehicles to function properly. This accurate mixing can be obtained with the solitude great performance of carburetors. The performance of the carburetors is being checked continuously with sequential development during manufacturing processes. Once the development of the carburetor with the coverings is completed, their performances are in need to be checked. As the fuel used possess characteristics such as high reactivity with atmospheric oxygen, lesser density and high volatility, it cannot be used in the testing process. Hence fuel with the equivalent chemical formula as that of petrol is to be chosen and was found to be clensol. Owing to the above reasons, it is used to test the performance of carburetor especially for inspecting the movement of float and to detect leakage and so on. Hence they are used to test the performance of the carburetor as movement of float, leakage etc. Though this chemical seems to be a gift for the industry, it seems to have a lot of disadvantages because of this highly volatility which greatly placed the major role in decrementing the respiratory health of human work force leading to the throat infection, lung infection and often results in dermatological issues. Despite protective mask which are being provided by the industries to the work in order to avoid direct inhalation of volatile clensol. The detrimental effects were found not to be reduced up to the mark. Hence, this project deals with the development of mask with the suitable materials which will reduce the amount of clensol penetration in the inhaling air. The reduction of clensol level in the developed mask was tested and tabulated.

**Keywords:** Carburretors, Clensol, Protective mask, Safety.

**References:**
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**Keyword:** Hazards, Risk, Assessment, Machine, Food manufacturing.

**References:**

**Authors:** Avinash Shinde, I. Siva

**Paper Title:** AWJM Performance Measurement of Sandwich Composites

**Abstract:** Sandwich composites, wherein the skin and core fulfills the requirement of different properties, like in foam sandwich structure, foam is providing damping and skin provides rigidity to the structure. In this work a sandwich panels with foam core and glass/polyester skin is fabricated by vacuum infusion technique. Abrasive water-jet drilling of these materials is performed to study the effect of standoff distance (SOD), Water Jet Pressure (JP) and Traverse Rate (TR) on kerf taper and surface roughness and Material Removal Rate (MRR). The experiment is designed using Taguchi’s L9 orthogonal array. The ANOVA is done to study the influence of input parameters on output. It is found that SOD is the most influencing parameter on the kerf taper and surface roughness.

**Keyword:** AWJM, Sandwich, Composite, Machining, glass fiber, ANOVA

**References:**

**Authors:** Gokul A K, Gokuila Krishnan S, Adam Khan M, Anushraj B, Winowlin Jappes J T

**Paper Title:** Behavior of SS-316 in Engine Oil Simulated Environment

**Abstract:** Oil pumps are facing aggressive environment during operation. The halides in the environment are ingested with the oil during operation. At this condition, the oil is heated up to 80°C and making the component to prove under corrosion. To simulate this issue, components from oil pump made of (SS 316 L) austenitic stainless steel. Engine oil before and after usage is considered as an electrolyte-to study the corrosion using cyclic Volta-metric potentiotstat, corrosion studies are performed with pure and filtered oil. After corrosion studies, samples are analyzed from SEM for surface damage.
**References:**

1. T. Bell, Surface engineering of austenitic stainless steel.

**Authors:**

**Paper Title:** Energy Management Micro Grid using Hybrid De Algorithm with Genetic Algorithm

**Abstract:** this paper evaluates hybrid differential evolution algorithm and genetic algorithm of LAMG is used to solving the medium scale mixed integer programming problems. Hybrid GA and DE algorithm is implemented in Local place Micro grids. LPMG and the required need of power and choose more power plants with power production with the help of Genetic algorithm. Genetic algorithm can be introduced with local place micro grid and select any one of the power plant. In this DEA implemented the local place MG, then survey period is one day. Last calculation shows which time or hour produce more power and sold out power in nearest city area electricity board. DE algorithm determine the one day power survey and Genetic algorithm choose more hour and select any one of the hour for better power production. The hybrid DEA and GA is to maintain choosing and selecting of better power production. So our project aim is choose more hour and select any one of the hour for better power production. This hybrid is use DE and GA is to maintain the real and reactive power of any power plant this paper evaluates hybrid differential evolution algorithm and genetic algorithm of LAMG is used to solving the medium scale mixed integer programming problems. Hybrid GA and DE algorithm is implemented in Local place Micro grids. LPMG and the required need of power and choose more power plants with power production with the help of Genetic algorithm. Genetic algorithm can be introduced with local place micro grid and select any one of the power plant. In this DEA implemented the local place MG, then survey period is one day. Last calculation shows which time or hour produce more power and sold out power in nearest city area electricity board. DE algorithm determine the one day power survey and Genetic algorithm choose more hour and select any one of the hour for better power production. The hybrid DEA and GA is to maintain choosing and selecting of better power production. So our project aim is choose more hour and select any one of the hour for better power production. This hybrid is use DE and GA is to maintain the real and reactive power of any power plant.
Abstract: The Solar PV modules are usually engaged in dusty environments which are the condition in many tropical countries like India. The dirt gets hoarded on the superficial of the PV module and chunks the photons from the sun. It decreases the generation ability of the PV module. The power output decreases the efficiency, if the PV module is not cleaned for a long time. In order to habitually clean the dust, an automatic cleaning system has been proposed, which senses the light energy from the sun on the solar panel and also cleans the PV module automatically. This system is realized with PIC16F877A microcontroller which controls the geared servo motor. This system consists of a sensor (LDR) to make it dusk to dawn. While for cleaning the PV modules, a mechanism consists of a sliding wipers has been developed. In earlier machinery, cleaning of PV panels was done manually. But here the PV panels has been cleaned by automatic system i.e. wiping mechanism with water flow for effective cleaning.

Keyword: automatic cleaning, DC wiper motor, low cost, Solar panel cleaning, Solar PV panel.

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Paper Title: Automating the Drug Dosage of Tacrolimus for Liver, Renal Transplant Patients using Neural Network

Abstract: Nowadays in medical field the major concern lies in the field of liver, renal diseases. Liver is the largest organ in the body and it is the factory which processes all the foods we taken. We should keep liver in perfect condition. But today there were lot of Liver, renal damages occurred commonly, where sluggish lifestyle of humans and escalated alcohol abuse has become dangerously common, liver ,kidney health have regained focus. This can cause liver cirrhosis and liver dysfunction. The main solution for this is transplantation surgeries. In most of the cases, transplantation surgeries are successful. But after few days normal patients become die. its a very common news. This is because of the lack of ideal drug dosage prediction. Today all of the medical practitioners calculate manually using some patients responses towards the drug. So it is not a systematic approach. Only purely mathematical approach is available for calculating drug dosage.

To achieve an optimal drug dosage calculation, proposed model will automate this system based on some patients response data like cell viability, drug trough level, Creatine Test result, biopsy result, MELD score etc. By using artificial intelligence techniques like neural networks. The human and monetary of both optimal and Sub- optimal drug dosage may be deduced from the action of various optimized neural networks. Neural networks provide sceptical help to doctors. Currently there is no system will automate this dosage calculation. This calculation based on patients responses after transplantation surgery. Normally start with zero level dosage of medicines. After few days the ideal drug usage calculations occurred based on some observing patients different levels of data. Automate this system will help to doctors to calculate automatically the optimal usage of drugs makes precise calculations in the patients health.

Keyword: Artificial Intelligence, Artificial Neural Network, MELD score, Tacrolimus

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Abstract: Sentiment Analysis probes public opinion on user generated content on Web like blogs, social media or e-commerce websites. The results of Sentiment Analysis are getting much attention with marketers that they are able to evaluate the success of an advertising campaign or the attitude of people on a new product launch. Business owners and advertising companies are using Sentiment Analysis to start new business strategies and to identify opportunities for new product development. In this paper, with R programming, the tweets from Twitter about Samsung Galaxy mobile phone and Apple Iphone were retrieved from three countries namely USA, UK and India for creating the dataset. The collected tweets were classified into positive, negative and neutral sentiments. The machine learning classifier algorithms like Naive Bayes, Support Vector Machine, Random Forest, Decision Tree, Artificial Neural Network, XGBoost with K Fold cross validation were applied on the dataset and the results were tabulated for comparing and estimating which classifier algorithm yields the best accuracy. Other performance metric values like F Score, Precision, Recall were also calculated for comparison of various classifier performances on Sentiment Analysis. It was found that XGBoost method combined with K Fold cross validation has produced the best accuracy in prediction. We have also applied SentiStrength algorithm to find out the intensity or the strength of positive and negative comments from each sentence. With the help of the results in hand, we were able to predict the brand of mobile phone that was preferred in each country.

Keywords: Sentiment Analysis, Machine learning, Text Mining and Analytics, Web Data Mining, Predictive Analytics

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Paper Title: Overview-Ecological Management Connecting Green Knowledge Management and Organizational Performance

Abstract: The ecological human capital management is almost focusing on the human administrative practices of the organization. But the ecological personal administrative practices are not only created for the human resource practices it’s also encompass a second elements that is preservation of knowledge capital. Lot of researcher has studied on the green human force management with the base of human force management practices. This article like to examine the concept of knowledge sharing management and how its impact on firm's performance.

Keyword: Ecological manual force, comprehensive management, environment management.

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Authors: Jaison Mathew Zacharia, Hari Krishna Shaji, Jerald James, Sree Ram H.

Paper Title: Analysis and Optimisation of Disc Brake System for Two-Wheeler Applications

Abstract: Braking system is used for restraining the motion by absorbing energy from a moving body. The conventional braking system works on the principle of friction. Among the different types of brakes, disc brake is one of the most widely used braking systems. Estimation of efficiency of this class of brakes without manufacturing of prototype is very difficult. This paper focuses on analysis and optimization of disc brake using ANSYS software. The base modelling of the disc brake system will be carried out using SOLIDWORKS and the model will be imported to ANSYS. The analysis is aiming at optimizing the deformation and stress conditions. The final design is aiming at controlling the deformation and stresses of the disc by providing the best material to be used for the certain design. The basic brake system used for the analysis was Bajaj Pulsar 150 motor cycles.

Keyword: Disc Brake, ANSYS, Modeling, Caliper, Friction.

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