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PREFACE

The First International Conference on "Intelligent Computing and Systems (ICICS 2017)" held on 13th - 14th February 2017, in collaboration with Association of Scientists, Developers and Faculties (ASDF), an International body, at NSN College of Engineering and Technology, Karur, Tamilnadu, India, Asia.

ICICS 2017 provides a chance for academic and Industry professionals to discuss the recent progress in the area of Intelligent Computing and Systems. The outcome of the conference will trigger for the further related research and future technological improvement. This conference highlights the novel concepts and improvements related to the research and technology.

The technical committee consists of experts in the various course subfields helped to scrutinize the technical papers in various fields, support to maintain the quality level of the proceedings of conference which consist of the information of various advancements in the field of research and development globally and would act as a primary resource of researchers to gain knowledge in their relevant fields.

The constant support and encouragement from Dr. S. Prithiv Rajan, ASDF Global President, Dr. P. Anbuoli, ASDF International President and Dr. K. Kokula Krishna Hari, ASDF International Secretary General helped a lot to conduct the conference and to publish the proceedings within a short span. I would like to express my deep appreciation and heartfelt thanks to the ASDF team members. Without them, the proceedings could not have been completed in a successful manner. I would like to express my sincere thanks to our management, student friends and colleagues for their involvement, interest, enthusiasm to bring this proceeding of the conference in a successful way.

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Impact of Ball Milled Fly Ash Nano Particles on the Strength and Microstructural Characteristics of Cement Composite Mortars

L Krishnaraja[1], P T Ravichandran[2]

[1]Assistant Professor, [2]Professor, Department of Civil Engineering, SRM University, Kattankulathur, Chennai, India

Abstract: *The substitution of Ordinary Portland Cement in concrete utilizing the high volume of secondary cementations materials, for example, fly ash can have ecological and also financially favourable circumstances, by reduction of greenhouses gasses from the production of cement, alteration of waste materials from landfill, decrease the natural assets required to the production of cement. By considering all factors, the application of top-down nanotechnology for changing over the micro scale level particle into ultrafine particles with the utilization of ball mill grinding process. This paper reports the experimental study carried out to investigate the effect of Alccofine (AF) blended with Raw Fly Ash (RFA) and Ultra-Fine Fly Ash (UFFA) mortar to enhance the strength of the blended cement mortar. 50% of OPC is replaced from cement mortar by RFA and UFFA sample with addition to that Alccofine is blended with Fly ash in 5% and 10% by weight basis. The Mechanical and Microstructural properties of OPC replaced by RFA and UFFA sample mortar specimens were studied.*

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Comparison of Trust based Protocols for MANET

S Baskaran[1], J Arputha Vijaya Selvi[2]

[1]Associate Professor, Dept. of CSE, Kuppam Engineering College, Kuppam, AP, India

[2]HOD (ECE) & Dean (R&D), Kings College of Engineering, Punalkulam, Thanjavur, India

Abstract: *A wireless ad hoc network consists of mobile a network which deploys architecture for communication without any fixed-position routers. Mobile Ad-hoc Networks has large number of nodes i.e wide range of nodes connected by each other via wireless links. The network is ad hoc because it does not depend on existing infrastructure, such as routers in wired networks. Data routing in this network is a thought-provoking task due to dynamic network topology and shared error prone environment. Due to the infrastructure less network every mobile node moves freely with the arbitrary direction with no guaranteed path. Due to the mobility of Nodes and lack of server, routing in MANET is very challenge. Therefore a routing protocol is necessary to have an efficient communication between nodes in different network situations which are heavily loaded at some point. This has led to development of many different routing protocols for MANETs, and argues that the scheme of proposed protocol affords an enhancement over a number of different strategies considered in the literature for a given network scenario. Therefore, selecting best one is very difficult to determine under a number of different network scenarios, such as increasing traffic and node density. In this project also provides an overview of different routing protocols proposed in the literature. This project also provides a performance comparison of all routing protocols and suggests which protocols may perform best in large networks.*

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Microstructural Characterisation and Quantitative Enhancement in Strength Properties of Stabilised Soil

Divya Krishnan K[1], P T Ravichandran[2]
[1]Assistant Professor, [2]Professor, Department of Civil Engineering, SRM University, Kattankulathur, Chennai, India

Abstract: *Due to rapid rise in the social standards results in the production of by product wastes which leads to unmanageable proportions causing pollution and disposal issues. Finding a sustainable uses of the wastes products in engineering field, is one of the alternative solution for the effective management. In this work Phosphogypsum as a by-product from fertilizer industry having more SiO2 and CaO is used to alter the characteristics of soil, which in turn improve the strength requirements. The chemical composition of Phosphogypsum consists of majorly the constituents of SiO2, CaO, SO3, MgO, Fe2O3 and Al2O3 and the presence of these compounds imparts the strength on soil samples by its addition. Microstructural analyses were studied by Scanning Electron Microscopy (SEM) with Energy Dispersive Spectroscopy (EDS) on untreated soil and PhosphoGypsum to identify the possibility of using to modify the characteristics of soil. The improvement in strength properties were determined by the Unconfined Compressive Strength (UCS) tests on clayey soils in untreated and stabilized condition with varying content of Phosphogypsum as 2, 4, 6% at 7,14 and 28 days of the curing period . UCS results showed an increase in strength values in the order of 1.16 and 1.75 times at the 28th days of curing by the addition of 6% of PG in soil samples. As a result of treatment, the minerals which confirm the pozzalonic reactions were examined by X-Ray Diffraction (XRD) and X-Ray Fluorescence (XRF) spectrometer. Elements like Si, Al, Ca, Mg, and S in treated and untreated soils were analysed to identify the variations in strength characteristics with the influence of the Phosphogypsum. In addition, the Free swell properties which are important in the surface characteristics of soil used in the construction work, is also carried out on treated and untreated soil samples, which indicates a reduction of values of 50% and 60% at the 28th day. This reduction in swell value reduce the vulnerability of construction activity in the surface of soil upto 2 to 3m or up to the influence depth from the ground surface. This method of stabilization allows an improvement in characteristics of clayey soil by making it suitable for construction activities. It has been observed that the effect of PhosphoGypsum in the soil as stabilizer results in increase the strength behaviour by the treatment and makes a cost effective resource in construction activities.*

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Evaluation of Cost Effective Sewage Treatment Plant for Augmenting of Irrigation Water Supply in Sulur Small Tank in Sulur Town

Hemapriya Subramanian[2], Sivaraja Muthusamy[1]
[1,2]NSN College of Engineering and Technology, India

Abstract: *The objective of this studu is to "evaluate of cost effective sewage treatment plant in sulur" to find if it can be used for agricultural purpose effectively. This is a small scale planted located near small water tank in sulur. Before this treatment unit was started the sewage was discharged into the tank. The waste water was highly poluted and was not used for agricultural purpose for the last 15 years. The samples are collected from each unit twise in a week various sewage testing parameters are analytzed. The treated water tested for the irrigation standards, These results are represented graphically.*

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Intellectual Dynamic Source Routing Protocol to Increase the Network Lifetime

Jeba Stanly[1]
[1]NSN College of Engineering and Technology, India

Abstract: *Wireless communication has proved a advantage to the communication industry but it has also produced many challenges to the researchers. Mobile Ad hoc Network MANET) [1] is one such area which has undergone tremendous research. MANET is a self-organizing network of mobile nodes forming a temporary network. Energy conservation is a challenge in MANET. This paper describes a customized DSR approach called IDSR. The residual energy of neighbour node is compared with the average energy of the path and accordingly the node is disabled. This proposed algorithm showed positive results in terms of energy preservation when simulated using 50 nodes UDP traffic. Energy consumption in IDSR reduces to 49 % as consumed by DSR. There are still various scopes for researchers to optimize DSR. MANET has many salient features which make it different from other networks and enforce many constraints on it. These features include lack of infrastructure, dynamic topology, bandwidth, power constriction etc. The most challenging task in such a dynamic network is routing. Many routing protocols have been proposed and optimized till date and constantly undergoing further evolution. The proposed approach can show interesting results in different scenario. In different application scenario, different approaches can be exploited.*

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Role of SCTP in Achieving Fair Bandwidth Allocation, Bottleneck Queuing in High Bandwidth- Delay Product Networks

Liston Deva Glindis[1], **Nelson Kennedy Babu C**[2]
[1,2]Dhanalakshmi Srinivasan College of Engineering, India

Abstract: *The rapid advancement in the deployment of very high bandwidth links in the Internet, which need a viable replacement of TCP in such environments, has become increasingly important in achieving efficient and fair bandwidth allocation while minimizing packet loss and bottleneck queue in high bandwidth- delay product networks A simple, low-complexity protocol, called Variable-structure congestion Control Protocol (VCP) [1] that leverages only the existing two ECN bits for network congestion feedback, and yet achieves comparable performance to XCP and to gain insight into the behavior of VCP, a simplified fluid model is designed to prove its global stability for the case of a single bottleneck shared by synchronous flows with identical round-trip times. On the downside, VCP converges significantly slower to a fair allocation than XCP. This paper is with a protocol called Stream Control Transmission Protocol (SCTP) with one bit ECN Nonce for Network congestion feedback and achieves comparable performance to XCP. The Stream Control Transmission Protocol is a Transport Layer protocol, serving in a similar role as the popular protocols Transmission Control Protocol (TCP) and User Datagram Protocol (UDP). It provides some of the same service features of both, ensuring reliable, in-sequence transport of messages with congestion control and minimizes packet loss and bottleneck queuing. i.e., high utilization, negligible packet loss rate, low persistent queue length, and reasonable fairness. The proposed model has been validated against and found to agree well with simulation results.*

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Conditional Identity Broadcast based Proxy Re-Encryption Technique for Data Encryption in Cloud

Praveen Velusamy[1], Balaji S[2], Madhankarthick R[3], Selvakumar J[4]
[1,2,3,4]NSN College of Engineering and Technology, India

Abstract: *Generally data transmission in networks uses Proxy Re-Encryptions (PRE) techniques such as Conditional (CPRE), Identity-Based PRE (IPRE) and Broadcast PRE (BPRE), have been proposed for flexible applications. This paper proposes a versatile primitive referred to as Conditional Identity-based Broadcast PRE (CIBPRE) and formalizes its semantic security. CIBPRE allows a sender to encrypt a message and image to multiple receivers by specifying these receivers' identities, and the sender can use a re-encryption key to a proxy so that he can convert the initial cipher text into a new one cipher text. The re-encryption key can be associated with a certain condition such that only the matching cipher texts can be re-encrypted, which allows the original sender to enforce access control over his remote cipher texts in a easier manner. In the instantiated conspire, the underlying figure message, the re-encoded figure content and picture the re-encryption key are all in consistent size and the parameters to produce a re-encryption key is free of the first recipients of any underlying figure content archive. CIBPRE to secure cloud email system advantageous of existing secure email systems based on Pretty Good Privacy protocol or Identity-Based Encryption.*

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Wireless Sensor Based on Fire Accident Avoidance System in Trains Using Zigbee Technology

Sivasakthi B[1], Sivaraja M[2]
[1,2]NSN College of Engineering and Technology, India

Abstract: *Now-a-days fire accidents are occurring very frequently in public transport system which causes the loss of most valuable human lives and the government property. There are a number of methods to avoid fire accidents and to reduce the severity of loss in case of fire accidents in public transport system. But the damage is catastrophic as a rescue service could not reach at right time due to improper communication. So we can further reduce the loss caused by fire accidents in trains and buses if we are able to inform the respective authorities immediately after the accidents and open the emergency door automatically. The system which is proposed in this paper uses the modern technology to detect the fire accidents and also to inform the respective authorities with minimum delay. Three types of sensors fire, smoke and heat sensors are used to detect the fire accidents. The signals from these sensors will activate the microcontroller which in-turn activates the message transfer system, alarm system, water sprinkler system and the motor to automatically open the emergency door of the bogie in which the accident took place. This proposed system is designed by using ZIGBEE technology and Pic microcontroller along with sensors.*

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Statistical Analysis for Identifying the Significant Factors Influencing Time and Cost Overruns in Apartment Buildings

Chithra Prakash[1], M Sivaraja[2]
[1,2,3,4]NSN College of Engineering and Technology, India

Abstract: *Time and cost performance is the fundamental criteria for success of a construction projects. Time and cost delay is one of the biggest problem facing in many construction buildings in India. The delay in construction project is a situation in which the project cannot be completed within a planned time. This project is to study the typical causes of project cost and time overruns in the apartment buildings. The problems were identified from the literature and construction sites. Data collection was done through structured questionnaire, which was designed based on 9 categories and 50 questions. Qualitative pilot study was done based on the opinions of experts in the construction industry to improve the questionnaire by reducing the factors and to find out any problem that may arise out in filling the questionnaire. Thus the questions were modified to be clearer. The questionnaire survey was carried out among clients, consultants and contractors. The top most factors were ranked based on Relative Important index method by the overall respondents. The conclusion gives recommendations and implementation to avoid such problems in apartment buildings and it will be helpful for reducing cost and time in future projects.*

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The Use of Micro-Silica to Improve the Compressive and Flexural Strength of Concrete

Gopalakrishnan V[1], Sivaraja M[2]
[1,2]NSN College of Engineering and Technology, India

Abstract: *In present development of occurred in the field of concrete technology. Many research scientists and research fallows have been developed numerous techniques to improve the strength & durability parameters of the concrete. This present research work is mainly focused on one of such method in which silica fume is used to improve the compressive and flexural strength of concrete. It gives the brief information regarding how exactly silica fume affects strength and durability parameters like compressive strength, flexural strength concrete. Micro silica produced by the raw materials such as Carbon (coal, wood chips), Quartz with temperature at 2000 degree Celsius will get Silicon metal, off gas into the Bag house filter finally get the powder form. Its colour varying from white and gray .It is very fine particles to fill the voids in the concrete and its to improve the strength. Various samples of M20grade concrete were taken with water cement ratio as 0.5 to show the effect of silica-fume additions as 0%, 5% and 10% of binder replacement. The results show significant increase in compressive and flexural strength of concrete up to certain percentage of silica fume addition.*

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Comparative Study of Seven Bio Stirred Evolutionary Algorithms

K S Shanmugaraj[1], P Gomathi[2]
[1,2]NSN College of Engineering and Technology, India

Abstract: *Bio-stirred evolutionary set of rules are probabilistic exploration methods that parrot the likely organic fruition or the comportment of biotic creatures. Such set of rules can be used to attain nigh optimum elucidations in optimization problems, for which outmoded mathematical practices may fall flat. This paper does a relative analysis of results of seven evolutionary set of rules: Genetic Algorithm (GA), Particle Swarm Optimization (PSO) Algorithm, Artificial Bee Colony (ABC) Algorithm, Invasive Weed Optimization (IWO) Algorithm, Fire Fly Algorithm (FFA), Artificial Immune (AI) Algorithm and Ant Colony Optimization (ACO) Algorithm when put on to selected orthodox yardstick multivariable functions.*

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Design of Internet Controlled Intelligent Switch

Sheelasankari M[2], Gomathi P[1]
[1,2]NSN College of Engineering and Technology, India

Abstract: *IoT (Internet of things) is a developing technique that is more useful to control or monitor the appliances via internet. Existing appliances can be connected to WIFI network and to internet with the help of ESP8266 microcontroller. A web socket is implemented in ESP8266 and it can be accessed through mobile Android application. Home appliances connected in smart switch box, people can control appliances anytime anywhere. This paper gives overview of Internet Controlled Switch Box.*

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Damping Characteristics of Titanium- Titanium Boride Composite

Sivaselvan S[1], Sivaraja M[2]
[1,2]NSN College of Engineering and Technology, India

Abstract: *Titanium and its alloys exhibit excellent combination of physical and mechanical (high strength and toughness material) properties and have similar strength as steel but with a weight nearly half of steel, the Applications of Ti alloys to structural materials are limited to special uses so far, because they have problems of poor heat and wear resistance as well as their high manufacturing cost. In order to solve these problems and to apply Ti alloys widely to general structural materials, the powder metallurgy Technology, which enables the near-net-shape manufacturing, recently attracts great attention. In particular, the TiB dispersed Ti composites (TiB/Ti composites) manufactured. Titanium and Titanium boride composite through the different target volume percentages of TiB (20% and 40%) have been prepared in spark plasma sintering, hot iso static pressing and vacuum sintering process. He damping characteristics of the composite such as storage modulus; loss modulus tan delta determined using Dynamic Mechanical Analysis (DMA). The results are compared for each fabrications process.*

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A Study Report on Cost, Duration and Quality Analysis of Different Formworks and Equipment's in High-Rise Building

Sakthivel R[1], Sivaraja M[2]
[1,2]NSN College of Engineering and Technology, India

Abstract: *Formwork is defined as temporary structure whose purpose is to provide support and containment for fresh concrete until it can support itself. Construction equipment plays great significant role in construction industry; the selection of right equipment has always been a key factor in the success of any construction project. The objective of this study is to identify the different formworks and equipment's used for the construction of high-rise building. And also analyzing advantages, limitations and site-specific problems in usage of formworks and equipment. The growing demand for accommodation has created a boom in the real estate sector, but has led to an alarming increase in high-rise buildings. With income growing and large numbers of people moving to urban areas, the demand for housing is on the upswing. Due to high construction costs and non-availability of land at preferred locations, people opt for apartments. These apartments offer many advantages such as round-the-clock security, backup power supply, maintenance car parking facilities and kids' play areas. For that, five on-going projects are selected and data is collected to identify how each type will affect the project cost, duration and quality from selection of formworks and equipment for their construction site.*

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Effect of Welding Processes of Mechanical and Metallurgical Properties of AA6061

Arun M[1], Ramachandran K[2]
[1,2]NSN College of Engineering and Technology, India

Abstract: *The preferred welding process for high strength aluminium alloy are frequently Gas Metal Arc Welding (GMAW) and Gas Tungsten Arc Welding (GTAW) due to their comparatively thicker sections of aluminium alloys in several fields, such as pressure vessels structural columns and a transport systems necessitates multi pass welding for joining of those section. Compared to many of fusion welding processes that are routinely used for joining structural alloys, FSW is an emerging solid state joining process in which the material that is being welded does not melt and recast. Therefore, when alloys are friction stir welded, phase transformations that occur during the cool down of weld are of a solid state type due to absence of parent metal melting, the new FSW process is observed to offer several advantages over fusion welding. In this investigation, AA 6061 aluminium alloy sheets of 6 mm thickness has been welded by three different processes, such as, Friction Stir Welding (FSW), Gas Tungsten Arc Welding (GTAW) and Gas Metal Arc Welding (GMAW) welding process. In friction stir welding there is no addition to filler material but in GTAW and GMAW process AA4043 (Al-5% Si) has been used as filler material. Tensile properties such as yield strength, tensile strength, and (%) elongation have been evaluated for all the joints. Microstructure analysis and Micro-hardness survey have been carried out. Tensile and hardness of all the weldmesh have been compared and correlated with microstructure. The main objectives of the present investigation are studying the walkability of AA 6061 alloy by friction stir welding process. Evaluating the mechanical (Tensile and Hardness) and metallurgical properties (Micro-structure) of friction stir welded aluminium alloys and comparing the properties of FSW with GMAW and GTAW process.*

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Experimental Study on Partial Replacement of Course Aggregate by Bitumen Immersed Prosopis Juliflora

Mathankumar C[1], Harshini S K[2], Prema K[3], Sethupathi S[4]
[1,2,3,4]NSN College of Engineering and Technology, India

Abstract: *In developing countries where concrete is widely used, the high steadily increasing cost of concrete has made construction very expensive. This, coupled to the deleterious effect of concrete production on the environment has led to the cost of concrete. In this research work experiments have been conducted with the collection of materials required and the data required for design mix are obtained by sieve analysis and specific gravity test. Sieve analysis is carried out for coarse and fine aggregates and the sample which suits the requirement is selected. Specific gravity test is carried out for coarse aggregate, fine aggregate and bitumen immersed prosopis juliflora. In this project coarse aggregate is partially replaced by the bitumen immersed prosopis juliflora. The coarse aggregate is replaced with 2% and 5% by bitumen immersed prosopis juliflora. The design mix used to execute this project is M30 grade concrete. This M30 grade concrete is designed as per Indian Standard Code for both conventional concrete and bitumen immersed prosopis juliflora concrete. Preliminary test comprising compression test is carried out for hardened concrete made from the study material. The strength obtained from bitumen immersed prosopis juliflora is compared with the conventional concrete. Finally compare both normal concrete and conventional concrete. Thus, 2% and 5% replacement of bitumen immersed prosopis juliflora is recommended for conventional concrete to increase the strength of concrete.*

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Hemp Fibre Reinforced Polymer Strengthened Tubular Sections

Saravanan S M[1], Sivaraja M[2]
[1,2]NSN College of Engineering and Technology, India

Abstract: *The Concrete Filled Steel Tubular (CFST) system is a composite material system which employs the various advantages of different materials and combines them together in a steel tube column which is filled-in with concrete. The purposes of using hemp fiber reinforced polymer (HFRP) materials are i) High Strength to Weight ratio ii) Better durability in worst environment. HFRP bonded structures have less cost. It increases load carrying capacity and improves stiffness and buckling behaviour of structure. In this project, Tubular Sections filled with Concrete are strengthened with Hemp Fibre Reinforced Polymer. HFRP is used as a Strengthening Material. CFST member is an innovative idea, in which a steel element acts together with a concrete element, so that both elements resist the axial and flexural loads. HFRP materials have already been proven to have superior resistance to corrosion and chemical attacks. CFST systems have a number of distinct advantages over equivalent steel, reinforced concrete, or steel-reinforced concrete columns. It has been expected that the confined CFST (CCFST) system can be an excellent remedy for the problems of the conventional CFST system by providing additional transverse confinement for the composite materials. As a result, the CFST system with the HFRP confinement will become a simple solution to change the mechanical behaviour of CFST in order to enhance its strength, ductility and remedy for deformability without significant strength reduction in composite materials. The experiment is carried out to study the use of HFRP laminates to strengthen the CFST has a significant effect on the overall behaviour of CFST such as enhancement on its strength and ductility. The Hemp fibre Polymer strengthened concrete filled tubular sections are tested for both Compression and tension strength to study the effect CFST.*

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Weldability of Commercially Pure Aluminium Alloy Using Tig Welding and Friction Stir Welding Process

Manikandan S[1], Sivashankar M[2]
[1,2]NSN College of Engineering and Technology, India

Abstract: *The main aim of this project is to compare the bonding strength between the welded joints produced from both friction welding and TIG welding process in commercially pure aluminium alloy with the breadth of 50 mm and length of 100 mm. The welded joints produced from both friction welding and TIG welding is taken for the destruction test and non-destruction test. Weld quality assurance is the use of technological methods and actions to test or assure the quality of welds, and secondarily to confirm the presence, location and coverage of welds. In manufacturing, welds are used to join two or more metal surfaces. Because these connections may encounter loads and fatigue during product lifetime, there is a chance they may fail if not created to proper specification. Methods of weld testing and analysis are used to assure the quality and correctness of the weld after it is completed. This term generally refers to testing and analysis focused on the quality and strength of the weld, but may refer to technological actions to check for the presence, position and extent of welds. These are divided into destructive and non-destructive methods.*

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Risk Management in Construction Industry

Rajiv S[1], Sivaraja M[2]
[1,2]NSN College of Engineering and Technology, India

Abstract: *Construction industry is highly risk prone, with complex and dynamic project environments creating an atmosphere of high uncertainty and risk. The industry is vulnerable to various technical, socio-political and business risks. The track record to cope with these risks has not been very good in construction industry. As a result, the people working in the industry bear various failures, such as, failure of abiding by quality and operational requirements, cost overruns and uncertain delays in project completion. The aim of the this paper is to identify and evaluate current risks and uncertainties in the construction industry through extensive literature survey and aims to make a basis for future studies for development of a risk management framework to be adopted by prospective investors, developers and contractors. It includes activities which aim to maximize the consequences associated with positive events and to minimize the impact of negative events. It is believed generally that risk in an environment is a choice rather than fate, and the inherent uncertainty in the plans can affect the desired outcome of achieving project and business goals. Risk is present in all the activities in a project; it is only the amount which varies from one activity to another. Risks and uncertainties inherent in the construction industry are more than other industries. The process of planning, executing and maintaining all project activities is complex and time-consuming. The current study is focused on concepts of risk management and will cover the related literature on the topic, development of a survey questionnaire and suggestions related to risk management practices in construction industry. Risk management becomes an important part of project management. The construction industry, perhaps more than most of other industries, is overwhelmed by risks. If these risks are not dealt with satisfactorily there is a maximum likelihood of cost overruns, time delays and low quality, resulting in dissatisfaction of clients and public.*

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Mechanical and Metallurgical Characterization of Friction Stir Welding of Aluminium Alloy (6061) with High Strength Low Alloy Steel

Vignesh S[1], Sivaraja M[2]
[1,2]NSN College of Engineering and Technology, India

Abstract: *Friction stir welding (FSW) is a relatively new solid-state joining process. This joining technique is energy efficient, environment friendly, and versatile. FSW is considered to be the most significant development in metal joining in a decade. Here the paper involves the friction stir welding for two materials such as Aluminium alloy (6061) and high strength and low alloy steel, aluminium alloy (6061) has good corrosion resistance and good walkability. High strength low alloy steel has high strength and toughness, due to better properties of these materials it can be taken into consideration for welding process. Then the materials are welded under various process parameters, the welding strength for different process parameters are noted .then better parameters is chosen for further welding process. During friction stir welding heat distribution will occur, Due to heat distribution some of the failure will occur so that it can get analysed through ANSYS software for selecting better welding condition. During this process various tests has been made such as tensile test, Hardness test and SEM test for obtaining better mechanical properties.*

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Heat Transfer and Fluid Flow Analysis in Triangular and Cylindrical-Fin and Tube Heat Exchangers with Different Shaped Vortex Generators

Ramanan R[1], Sivaraja M[2]
[1,2]NSN College of Engineering and Technology, India

Abstract: *Numerical simulation is to be carried out to study the heat transfer and fluid flow in the plate-fin and tube heat exchangers with different shaped vortex generators mounted behind the tubes. Three different span angles a (a =30°, 45° and 60°) for three different shaped (aerofoil, elliptical and semi-circular) vortex generators are to be investigate in detail for the Reynolds number ranging from 400 to 3000. Numerical Simulation is to perform by a computational fluid dynamics for the heat transfer and fluid flow for the temperature distribution and local flow structure. The comparisons of heat transfer enhancement with flat tube-fin element with and without vortex generator enhancement under different shaped vortex generators are to carry out and optimized shape for heat transfer is to be verified. The proposed heat transfer enhancement technique is able to generate longitudinal vortices and to improve the heat transfer performance in the wake regions. A reduction in fin area may be obtained if vortex generators embedded fins are used in place of plain fins. The proposed heat transfer enhancement technique may produce less pressure drop with high heat transfer Fluid flow and hear transfer over 3-row plate-fin and tube heat exchangers with and without a pair different shaped vortex generators are to be studied using Computational fluid dynamics. The conjugated convective heat transfers in the flow field and heat conduction in the fins will be considered. Study to be carried out for the flow and behavior of vortex generators in the wake re-circulation zone. The span angle is to be increased, the strength of the longitudinal vortex is intensified and both the Colburn and friction factors are to be increased. The study of arrangement of span angle is to be carried out and relative heat transfer rate is to be measured for Reynolds number 400 to 3000.*

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A Step up DC-DC Converter Using ZVS Boost Integration Technique with PI and Fuzzy Controllers in PV Systems

Nalini N[1], Gomathi P[2]
[1,2]NSN College of Engineering and Technology, India

Abstract: *A three port DC-DC converter integrating PV systems for high step up applications and also for power supply design with high efficiency and maintain voltage stability. This paper describes the non-isolated high step-up DC-DC converter using Zero Voltage Switching (ZVS) Bi-directional Integration Technique (BIT). Integrated multi-port converters for interfacing several power sources and storage devices are widely used in recent years. Instead of using individual power electronic converters for each of the energy sources, multiport converters have the advantages including less components, lower cost, more compact size, and better dynamic performance. In many cases, at least one energy storage device should be incorporated. For example, in the electric vehicle application, the regenerative energy occurs during acceleration or start-up. Therefore, it is very important for the port connected to the energy storage to allow bidirectional power?ow.*

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Expert System for Construction Consultancy Services

M Nivedhitha Manokaran[1], Sivaraja Muthusamy[2]
[1,2]NSN College of Engineering and Technology, India

Abstract: *Numerical simulation is to be carried out to study the heat transfer and fluid flow in the plate-fin and tube heat exchangers with different shaped vortex generators mounted behind the tubes. Three different span angles a (a =30°, 45° and 60°) for three different shaped (aerofoil, elliptical and semi-circular) vortex generators are to be investigate in detail for the Reynolds number ranging from 400 to 3000. Numerical Simulation is to perform by a computational fluid dynamics for the heat transfer and fluid flow for the temperature distribution and local flow structure. The comparisons of heat transfer enhancement with flat tube-fin element with and without vortex generator enhancement under different shaped vortex generators are to carry out and optimized shape for heat transfer is to be verified. The proposed heat transfer enhancement technique is able to generate longitudinal vortices and to improve the heat transfer performance in the wake regions. A reduction in fin area may be obtained if vortex generators embedded fins are used in place of plain fins. The proposed heat transfer enhancement technique may produce less pressure drop with high heat transfer Fluid flow and hear transfer over 3-row plate-fin and tube heat exchangers with and without a pair different shaped vortex generators are to be studied using Computational fluid dynamics. The conjugated convective heat transfers in the flow field and heat conduction in the fins will be considered. Study to be carried out for the flow and behavior of vortex generators in the wake re-circulation zone. The span angle is to be increased, the strength of the longitudinal vortex is intensified and both the Colburn and friction factors are to be increased. The study of arrangement of span angle is to be carried out and relative heat transfer rate is to be measured for Reynolds number 400 to 3000.*

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An Experimental Study on Concrete with Partial Replacement of Cement by Hypo Sludge and Fuller's Earth

Vijayan S[1], Raagavi M[2], Saravanan S M[3]
[1,2,3]NSN College of Engineering and Technology, India

Abstract: *To produce low cost Concrete, the Hyposludge and Fuller's Earth is used as a Substitious Cementitious material which could be used as alternative to normal Concrete. The Economic feasibility of this concrete is less compared to Conventional Concrete. Hyposludge is the Waste paper fibre obtained from the Paper Industry and Fuller's Earth is known as Calcium Bentonite Clay which is used in earlier Cement Production. The Volume of cement is partially replaced by hyposludge in 30%, 40% and additionally volume of cement is replaced by Fuller's Earth in 4%, 8% . River sand and 20 mm Coarse aggregate are used in manufacture of Concrete. Mix design of Concrete is done as per IS 10262. The properties of Fresh Concrete such as Workability and Properties of Hardened Concrete such as Compressive Strength, Split Tensile Strength and Modulus of Rupture are to be studied. The hyposludge and Fuller's earth Replaced Concrete reduces Environmental Pollution and Hence it is Eco- friendly.*

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Hazard Assessment and Prevention Method in Centrifugal Machine

Santhosh P[1], Sivaselvan S[2], Praveenkumar M[3]
[1,2,3]NSN College of Engineering and Technology, India

Abstract: *The increased rate of industrial accidents with its attendant implications like deaths, injuries and damage to properties calls for enforced implementation of "HAZARD ASSESSMENT AND PREVENTION METHODS" in the Indian industrial workplace. This project explains the various forms of accident that takes place in the sugarcane industry and the method of correction of hazard for centrifugal machine in sugarcane industry. It highlight the various accident and health related problems in the sugar industry which is caused by centrifugal machine, as well as discussed measures that can be put in place to prevent accidents in the industry due to centrifugal machine. Finally, recommendations were given to engender a significant decrease in the occurrence of accidents in the sugarcane industry which is caused by centrifugal machine.*

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Effect of Fruit Waste and Yard Waste Using Water and Industrial Effluents in Vermicomposting Technology

Mohanasundari Somasundaram[1], Hemapriya Subramanian[2]
[1]Sri Muthukumaran Institute of Technology, India
[2]NSN College of Engineering and Technology, India

Abstract: *Due to the phenomenal growth in the quantum and diversity of the waste materials generated by the human activity, potentially harmful effects on the environment and public health are resulted. The present method of the waste disposal causes the pollution of soil as well as the surface and ground water .Hence vermicomposting is carried out as a safe method for solid waste disposal. An experiment is conducted to prepare vermicompost using partially decomposed fruit waste and yard waste by employing indigenous earthworm species. The earthworms used are Eudrillus Eugenie. This process is carried out with the use of diluted raw dairy and distillery effluents to provide the necessary moisture for the wastes. The process is done under the controlled conditions of pH, moisture content and temperature. In this process partially decomposed fruit and yard waste are broken down and fragmented rapidly by earthworms, resulting in a stable non-toxic material with good structure which has a potentially high economic value as soil conditioner for plant growth. Within 40 days, the castings obtained on the top surface are collected, sieved, dried, tested and used as manure. The result reveals in the increased nutrient content, increased worm population and decreased processing days of the waste in the order of: Dairy, Distillery and water. Hence this study shows that the vermicomposting is an efficient process that stabilizes the waste, at the same time managing to solve the environmental problems arising from their disposal.*

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Assessment of Effluent from Paper Industry and Nearby Well Points

Kiruthika Venugopal[1], Hemapriya Subramanian[2], Saravanan[3], S Mani[4]
[1]MAM College of Engineering, Trichy, India
[2,3,4]NSN College of Engineering and Technology, India

Abstract: *The availability of good quality water is an indispensable feature for preventing diseases and improving quality of life. It is necessary to know details about different physiochemical parameters such as colour, temperature, acidity, hardness, pH, sulphate, chloride, Biochemical Oxygen Demand, Chemical oxygen Demand, Dissolved Oxygen, alkalinity before usage. Paper industry effluent is used for irrigation purpose in agricultural lands. This effluent alters the characteristics of ground water such as wells due to infiltration through soil pores and affects the soil fertility. Many of the ground water changed to sour taste. The present investigation aims to study the effects of infiltration of effluent which alters the characteristics of ground water around the paper industry. A detailed hydrological database consisting of analysing various characteristics of water samples collected at various points around the paper industry and some remedial measures are suggested to improve the quality of well water. Parameters like pH, Turbidity, Hardness, Biological Oxygen Demand, Chemical oxygen Demand, Dissolved Oxygen, etc… are reduced and make it fit for irrigation purpose by using Bioremediation with Azolla algae and Water lettuce. The use of this plant as a biological filter for renovation of waste water has been increased. An important part of the scrubber role of water lettuce is the trapping of waste materials by processes of filtration-adsorption by their root system.*

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Numerical Analysis of Insulation Wear in Cardiac Lead

Boopathy Subramanian[1], Gnanavel Kannian[2], Prabhu M Kuppusamy[3]
[1,2]Saveetha Uinversity, Chennai, India
[3]NSN College of Engineering and Technology, India

Abstract: *Artificial Pacemaker is a medical device which uses electrical impulses, delivered by electrodes contracting the heart muscles, to regulate the beating of the heart. The primary purpose of a pacemaker is to maintain an adequate heart rate, either because the heart's natural pacemaker is not fast enough, or because there is a block in the heart's electrical conduction system. The problems in early pacemakers are mainly due to breakage of electrode wires, short battery life and the need for surgery for pacemaker implantation. The insulation in the cardiac lead is also a major risk and it results in complications. To improve the cardiac lead performance, strength and life, numerical simulation of insulation wear is done under various cases using ABAQUS software. The obtained results are validated with the experimental results inferred in the literature survey.*

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Comparison of Friction Stir Welding and Friction Stir Processing Using Aluminium Alloy 6061 and Aluminium Alloy 6063

Vignesh S[1]
[1]NSN College of Engineering and Technology, India

Abstract: *Friction stir welding (FSW) is a relatively new solid-state metal joining process. This joining technique is energy efficient, environment friendly, and versatile. FSW is considered to be the most significant development in metal joining in a decade. Here the paper involves the friction stir welding for two materials such as aluminium alloy (6061) and aluminium alloy (6063). Aluminium alloy (6061) and aluminium alloy (6063) has good corrosion resistance and good weldability. Due to better properties of these materials it can be taken into consideration for Friction stir welding (FSW) and Friction stir processing (FSP). Then the materials are welded under various process parameters, the welding strength for different process parameters are noted and then better parameters is chosen for further Friction stir welding (FSW) and Friction stir processing (FSP) welding processing. During friction stir welding heat distribution will occur. Due to heat distribution some failures will occur and these failures can be analysed through ANSYS software for selecting better welding condition.*

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Parameter Optimization of EDM Process by Response Surface Methodology in AISI 304 Stainless Steel

Gunashankar M[1], **Mathankumar C**[2], **Karthick P**[3], **Vijay Varshidh V**[4], **Vignesh Ravi S**[5]
[1,3,4]Chettinadu College of Engineering, India
[1,5]NSN College of Engineering and Technology, India

Abstract: *EDM has become an important and cost-effective method of machining extremely tough and brittle electrically conductive materials. It is widely used in the process of making mould/dies, automobile and electronics industries where intricate complex shapes need to be machined in very hard materials. The work piece material selected in this experiment is AISI 304 Stainless steel taking into account its wide usage in industrial applications and it is very difficult to machine by conventional machining. The tool material selected in this experiment is copper based on the good electrical conductivity compared to other tool materials like brass, tellurium copper and graphite. In this work, the influence of variable process parameters such as pulse current, pulse on time, pulse off time, discharge current, gap distance and machining time over performance characteristics like material removal rate, tool wear rate, and different aspects of surface integrity for AISI 304. Stainless steel such as topography of machined surface, MRR, Tool Wear Rate, and surface will be investigated. The variations of material removal rate, tool wear rate versus input machining parameters will be optimized by using Response Surface Methodology which allows us to get best output characteristics.*

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Analytical and Experimental Investigation on Behaviour of Steel Concrete Composite Columns

S Dhivya[1], R Sekar[2], M Nivedhitha[3], M Manokaran[4], K Krishnakumar[5], K Kannan[6]
[1,2]Erode Builders Educational Trust Group of Institutions, India
[3,4]NSN College of Engineering and Technology, India
[5,6]Roever Engineering College, India

Abstract: *Though concrete is a widely accepted building material it is not without any drawbacks. The low tensile strength and brittle nature of concrete necessitates it to be reinforced with steel rods. Placing the steel reinforcement in the tension zone of concrete will enhance the tensile strength of concrete. The addition of fibers to concrete delays the failure mechanism and induces ductility to concrete and called as Steel Fiber Reinforced Concrete (SFRC). Similarly an important and most frequently encountered combination of construction materials is that of steel and concrete, with applications in multi-storey commercial buildings and factories, as well as in bridges. These materials can be used in mixed structural systems, for example concrete cores encircled by steel tubes, as well as in composite structures where members consisting of steel and concrete act together compositely. In present work, an experimental investigation on the structural behaviour of encased steel concrete composite columns was made. The percentage of steel fiber is vary by addition of different percentages of steel fiber such as 0.2, 0.4, 0.6, 0.8 and 1. The material properties were tested and mechanical properties such as compressive and split tensile strength test are carried with M 40 mix proportions for CC. Stress-strain behaviour of both CC and SFRC were obtained. The addition of 0.8% and 1% of steel fiber shows good strength.*

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Solar Powered Automatic Irrigation System by Advanced Applications

Vignesh Mahendran[1], Vignesh Veeramani[2], Vignesh Nataraj[3], Prakash Murugesan[4], Prabhu M K[5]
[1,2,3,4,5]NSN College of Engineering and Technology, India

Abstract: *The main objective of this project is to provide auto irrigation system to sense the soil moisture level. And this level of sensing is done by soil moisture sensor which detects the moisture level and also provides moisture level to various crops in an automatic manner. When the moisture level of the soil is decreased below a certain level then the sensor sends the detected value to the micro controller. According to the value that is sensed by the sensor, the water is supplied to the crops automatically to the desired level in order to maintain the moisture content in the soil. The theme of this project is to reduce the human intervention (farmers) and use solar energy tracking system which is one of the non-renewable sources for irrigation purpose. The overall system controlled by the micro controller and GSM module.*

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Experimental Study on the Application of Polymer Modified Bitumen in the Flexible Pavement

Ashwin Sivanandhan[1], Prakash Ravichandran[2], Anitha Annadurai[3], Mathankumar Chokkalingam[4], Saravanan Mani[5]
[1,2,3,4,5]NSN College of Engineering and Technology, India

Abstract: *The road transport facilities play a vital role in deciding a countries economy status. Developing countries like India mainly depends upon their road networks for transportation. To provide a road network which can perform for a longer period is the need of the hour. The main failure of a pavement is due to its permanent deformation, which is a result of the poor performance of the bitumen used as a binder. The Development of polymer modified bitumen composites gaining momentum due to its vast application in the field of flexible pavements, since it can produce pavements with longer life. A series of polymer modified bitumen samples were prepared using different varieties of polymer like PVP and PVA in different percentages of polymers starting from 3% to 7% and for WP it's in the range of 1% to 5%. These polymer modified bitumen was characterized for its physical properties using some advanced analytical tools. Basic empirical tests were also carried out to check whether it obeys the basic properties of the binder. The polymer modified bitumen was also subjected to study its mix characteristics. The tests result concludes that there is a notable improvement in the properties of the bitumen when it is modified with polymers. A detailed discussion of the results obtained were also done in this project work. The study also concludes that the research on polymer modified bitumen paves a newer way in the area of flexible pavement construction.*

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Experiment in EDM Process by Using Brass Electrode with Inconel in Powder Mixed Die Electric Medium

Saiyath Basha[1], Akbar Basha[2], Ranjith Kumar[3], Palanisamy[4], Sarath Babu[5], Sekar[6], Yuvaraj Anbalagan[7]
[1,2,3,4,5,6,7]NSN College of Engineering and Technology, India

Abstract: *Electrical Discharge Machining (EDM) is one of the non-traditional machining processes, based on thermoelectric energy between the work piece and an electrode. In this process, the material removal is occurred electro thermally by a series of successive discrete discharges between electrode and the work piece. the performance of the process, to a large extent, depends on the electrode material, work piece material manufacturing method of the electrodes. A suitable selection of electrode can reduce the cost of machining. So in this paper die- sinker edm using brass electrode has been done for optimizing performance parameters and reducing cost of manufacturing, finally it is found that a brass electrode give better performance in certain characteristics but the cost become high for machining so keeping in mind cost and other some characteristics a brass electrode is more suitable with Nano powder mixed dielectric medium in case of surface roughness.*

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Study on Durability Property of Polymer Modified GGBS Based Concrete Specimen

Kiruthika Selvaraj[1], Divya Periyasamy[2], Dhanushya Thangavel[3], Sivasakthi Balusamy[4]
[1,2,3,4]NSN College of Engineering and Technology, India

Abstract: *Concrete is a reliable construction material used worldwide for structural and non-structural applications. Concrete is the second most consumed substance on Earth after water. The preparation of concrete involves huge amount of consumption of cement depending on the grade of concrete. Portland cement (PC) is the most widely used binder material for concrete. The usage of mass quantity of cement leads to consumption of huge natural resources (i.e., lime) and also involves emission of CO2 gas. Polymer Modified GGBS based concrete is prepared by mixing of Cement with partial replacement of Ground granulated blast furnace slag (GGBS), fine aggregate, coarse aggregate and polymer solution. The evolution of CO2 gases is controlled. Strength and durability property of polymer modified GGBS based concrete also comparable to ordinary conventional concrete.*

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Studies on the Behaviour of Reinforced Concrete Beams Strengthened by Aramid FRP Sheets

Mukundhan M S[1], Vikraman P[2], Ramyakrishnan S[3], Sakthivel R[4]
[1,2,3,4]NSN College of Engineering and Technology, India

Abstract: *Cement is the major material used in concrete which produces approximately equal quantity of greenhouse gases. This makes the search for a more environmentally friendly material more relevant. So there is a need to produce a carbon dioxide emission free compendious material. Considering the increasing demand for developing alternative construction materials, due to the growing environmental concerns, this paper discusses the feasibility of alkali activated geo-polymer concrete, as a future construction material. Also to reduce the usage of river sand, M-Sand is preferred for fine aggregate replacement. Therefore Normal River sand is replaced partially such as 10%, 20%, 30%, 40% by Manufactured Sand. Here ambient curing of concrete at room temperature was adopted. So there will be no need of water for curing purpose. Optimum M-Sand content in compressive strength, tensile strength, flexural strength have to be determined. Rapid chloride penetration test and acid test are to be conducted to check the durability. Results are compared with conventional concrete.*

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Vehicle Platooning Using Tactile Internet with 5G Technologies

Rajasekaran C[1], Rubini M[2], Kirubakaran B[3]
[1,2]K S Rangasamy College of Technology, India
[3]NSN College of Engineering and Technology, India

Abstract: *Tactile internet is the technique which reads the information from the object that can be controlled by humans and response within 1 millisecond. It is based on the haptic (touch) sense that will connect humans with unknown environment. The haptic (touch) sense will establish an interface between human and computer named as Human System Interface (HSI). It is applicable in self-driving car, home system control, medical treatment or diagnosis etc. Tactile with 5G technology provide high speed response with very low end to end delay. This technology helps in communicating simultaneously with more number of devices. It is ultra-reliable and ultra-responsive network. Vehicle Platoon is a group of vehicles that travels in close proximity to one another, nose-to-tail, at highway speeds. A lead vehicle is followed by a number of other vehicles that closely match their speed and exercises to the lead vehicle. It is mainly used in automation industry to regulate the speed, acceleration with less fuel consumption and pollutions. It increases the safety and comfort and reduces the traffic congestions. Vehicle platoon might be one of the technological benefits of self-driving (autonomous) vehicles. The proposed work is mainly about vehicle platooning using tactile internet with 5G technologies. Two techniques are used for platooning,(i) radar based techniques which maintain the distance between two vehicles and (ii) Inter Vehicle Communication (IVC) which manage the entire platoons for providing the effectiveness of the platoon management algorithm and protocol. Using these techniques, it is easy to create, manage and split the platoons. The tools used for the process are Veins environment which uses SUMO for road traffic simulation and OMNET++ for network simulation. This leads to improve traffic safety and avoids traffic congestion.*

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Experimental Study on Pet Bottle Fibre Concrete

Dinesh N[1], Karuppaiya A[2], Rajiv Gandhi S[3]
[1]Chettinad College of Engineering, India
[2]JEPPIAAR SRR Engineering college
[3]NSN College of Engineering and Technology, India

Abstract: *Due to the rapid industrialization taking place globally, the problems generated are acute shortage of construction materials and increasing in productivity of wastes. The productivity and consumption of plastic and the rate at which the Solid Plastics Waste(SPW) are created have increased considerably .Plastic constitute 12.3% of total waste produced most of which is form of discarded water bottles. The concrete of M20 grades were selected for the study. The PET fibers were obtained from used mineral water bottles without any processing. The fibers were added in proportions 0.5%, 1%,1.5%.The aspect ratio of PET is 15.The concrete specimens were casted and tested after 28 days of curing and a model for flexural strength of PET fiber reinforced concrete is presented in this paper.*

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Fabrication of Bearing Cap Fixture

Sureshkumar C[1], Veeramani C[2], Shanmuganathan P[3], Selvakumar B[4]
[1,2,3,4]NSN College of Engineering and Technology, India

Abstract: *Bearing cap fixtures are used for uneven machining process. It's used to make bearing cap for connecting rod. It was mild steel material. In existing process there are four different processes are needs four separate fixtures. But in our project we are modify these four fixtures in the single fixture. And these fixtures operate in four types of operation in one fixture. By this process there operating time reduced, scrap materials waste are reduced and making cost of bearing cap is reduced. The work materials are fixed from the clamp pad and rest pad in fixtures. The clamp pad and rest pad are wear on normally fixed to the fixtures, so this process are using in heat treatments process. When this heat treatments process is reduced to wear on fixed to the work piece in fixture.*

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Vibration Analysis of Nanoclay Reinforced Glass Fiber/Epoxy Nanocomposite

M S Senthil Kumar[1], Ashnafi Adugna[2], K Balasundaram[3], A Ashok Kumar[4]
[1,2,3]Department of Industrial Engineering, Institute of Technology, Dire Dawa University, Dire Dawa, Ethiopia
[4]Department of Textile Engineering, Institute of Technology, Dire Dawa University, Dire Dawa, Ethiopia

Abstract: *In general, vibration is an unwanted behaviour for the aerospace, structural and automobile application that often creates unnecessary sound and motion, resulting in fatigue and at last reduces their life cycle. Naturally, all materials containing a certain quantity of damping properties that vary the natural frequency of that material. In the current research work, the natural frequency and damping property of the nanoclay reinforced glass fiber/epoxy nanocomposite laminates were experimentally analysed. The glass fiber reinforced nanocomposite beams were manufactured by modifying the epoxy matrix with the inclusion of nanoclay (Cloisite 25A) loading. The nanoclay loadings were varied as 0 wt.%, 2 wt.%, 4 wt.%, 6 wt.%, 8 wt.% and 10 wt.%. In the vibration test setup, the nanocomposite specimens were clamped as cantilever beam at one end and excited at another end by using a wooden mallet and signals were acquired with the assistance of accelerometer and data acquisition system.*

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A Design to Deal with Data Partition and Aggregation in Dynamic Manner

R Angayarkanni[1], U Karthick[2], V Hemalatha[3], P Gomathi[4]

[1,2,3]Assistant Professor/CSE, [4]Dean, NSN College of Engineering and Technology, India

Abstract: *Background: Map diminish job, we recollect combining knowledge with the same keys earlier than sending them too far off lessen tasks. Even though a similar function, called mix, has been already adopted via Hadoop, it operates abruptly after a map undertaking exclusively for its generated information, failing to exploit the information aggregation opportunities among multiple tasks on distinctive machines. Methods: We together consider data partition and aggregation for a Map curb job with a goal that is to diminish the complete network site visitors. In distinctive, we express an allotted algorithm for large knowledge applications by means of decomposing the long-established significant-scale trouble into a few sub issues that may be solved in parallel. Moreover, a web based algorithm is modeled to care for the data partition and aggregation in a dynamic manner. Findings: In the end, wide simulation outcome view our proposals can significantly scale back community traffic cost in each offline and on-line cases. Application: The MapReduce programming model simplifies large-scale data processing on commodity cluster by exploiting parallel map tasks and reduces tasks. Although many efforts have been made to improve the performance of MapReduce jobs, they ignore the network traffic generated in the shuffle phase, which plays a critical role in performance enhancement. Traditionally, a hash function is used to partition intermediate data among the Reduce tasks, which, however, is not traffic - efficient because network topology and data size associated with each key are not taken into consideration. In this paper, we study to reduce network traffic cost for a MapReduce job by designing a novel intermediate data partition scheme.*

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Time Proficient Approach for Detecting Errors by Using Scale Free System

V Hemalatha[1], P Gomathi[2]

[1]Assistant Professor, [2]Dean, NSN College of Engineering and Technology, India

Abstract: *The new era of data explosion brings about new challenges for big data processing. Big data sets come from several regions, including meteorology, complex physics simulations, genomics, biological study, gene analysis and environmental research. Hence, how to process big data has become a fundamental and critical challenge for innovative society. Cloud computing provides a promising platform for big data processing with great computation capability, storage, scalability, resource reprocess and low cost, and has attracted significant attention in alignment with big data. Big data set from sensors is often subject to corruption and losses due to wireless medium of communication and bearing of hardware inaccuracies in the nodes.*

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Effect on Strength and Interaction Failure Behaviour of Flange and Web Plate of Cold Formed Steel Welded I-Section Columns

R Karthika[1]
[1]Department of Civil Engineering, NSN College of Engineering and Technology, India

Abstract: *This work reports the results of a numerical investigation of the flange and web plates of cold-formed steel I-section under axial compression. The column cross-section dimensions and lengths selected by means of sequences of 'trial&error' elastic buckling analysis using Finite Strip Method CUFSM. Some instability phenomena like local, distortional and global-buckling arises. Then, the paper (i) summarizes the results obtained in a recent experimental investigation carried out by Santos et al (2012) and presented numerical analysis of columns by means of ANSYS 12. Finally, the ultimate strength and failure modes of cold formed steel flange and web plates and their interaction are considered by analysing in ANSYS 12.*

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Fine Grained Categorization of Vehicle Models & Face Recognition in Accident Zone

S Suganya[1], **J Boopala**[2], **P Gomathi**[3]
[1,2]Assistant Professor, [3]Dean & Professor, NSN College of Engineering and Technology, India

Abstract: *It is need to be a real time Vision based application for predicting the vehicles in the accident zones. Some of the crimes during accident are left a detected for that surveillance is used for Car recognition and face recognition. The proposed work aims to highlight vision related tasks centred on "car", which has been largely neglected by vision community in comparison to other objects. It shows that there are still many interesting car-related problems and applications, which are not yet well explored and researched. To facilitate future car-related research, here it presents our on-going effort in collecting a large-scale dataset, "Comp Cars" that covers not only different car views, but also their different internal and external attributes. Importantly, the dataset is constructed with a cross-modality nature, containing a surveillance-nature set and a web-nature set. The proposed work discusses specific challenges of the car-related problems and other potential applications regarding vision related tasks.*

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Detecting Fuzzy Duplicates in XML Data Using Bayesian Network

J Boopala[1], S Suganya[2], P Gomathi[3]
[1,2]Assistant Professor/CSE, [3]Professor & Dean, NSN College of Engineering and Technology, India

Abstract: *Electronic data play an important role in business application and decision making process. The quality of the data can depend on many factors like duplicates, errors, missing values etc. Here it is focused to find fuzzy duplicates in more complex hierarchical structures like XML data the duplicate are classified into the exact duplicates, partially duplicates and set of duplicates. A novel method for XML, duplicate detection called XMLDUP uses Bayesian Network, which is to determine the probability of two XML elements being duplicates.ie by considering two things: information within the elements and the way that the information is structured. Here the classification of the hierarchical data likes parent nodes, child nodes and their values. Then by applying the new conditional and prior probabilities which are easy to identify the duplicates on XML data. The node ordering technique is used which means ordering the contents of data depending upon the features of data. It is used to improve the efficiency of duplicate detection in XML data. Next to derive the automatic pruning factor in order to improve the effectiveness of the duplicates detection. The pruning factor means a certain threshold reached by data means that data's are assumed as duplicates. Thus to improve the efficiency, Network Pruning Strategy is used, which is capable of significant gains over an optimized versions through these experiments will be able to achieve high precision and recall scores in several data sets.*

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An Aggrandized Bottom-Up Clustering Method for Solving Vehicle Routing Problem

V Praveen[1], P Gomathi[2]
[1]Assistant Professor, CSE, [2]Dean & Professor, EEE, NSN College of Engineering and Technology, India

Abstract: *A magnified arrangement is intended for the vehicles to diminish the aggregate cost of dissemination by which it can supply the products to the clients with its referred to limit can be named as a vehicle directing issue. In factor neighbourhood look technique, chiefly a productive vehicle steering can be accomplished by figuring the separation network esteem in view of the client's area or the way where the client's lives. The fundamental target of the paper is to lessen the aggregate separation made a trip to convey the products to the clients. The proposed calculation is a chain of importance based upgraded agglomerative bunching calculation procedure which is utilized as a part of the information mining situation successfully. The proposed calculation diminishes the aggregate separation doling out to every course and the vital thing need to consider is that, the improved grouping calculation can decrease the aggregate separation when contrasted with the beforehand proposed variable neighbourhood seek strategy.*

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Routing Protocol Classification and Improving QOS Metrics: A Survey

K Jothimani[1], P Gomathi[3]

[1]Assistant Professor/CSE, [2]Professor & Dean, EEE, NSN College of Engineering and Technology, India

Abstract: *Mobile ad hoc network (MANET) is a self-governing system of mobile nodes which is an infrastructure less network and requires no centralized management. Mobile ad hoc networks are self-organizing and self-configuring network where, the structure of topology is changed arbitrarily and communication will take place via radio waves at anywhere and anytime. The goal of Quality of service (QoS) is to provide a better service to the selected network traffic. QoS for wireless is more challenging than wired network due to node mobility and resource constraints. This paper discusses various classification of routing protocols in MANET and the QoS parameters like end-to-end delay, energy, bandwidth, packet delivery ratio, jitter, throughput and so on for different types of routing protocols such as proactive, reactive, hybrid, power-aware, position based which are used in mobile ad hoc networks.*

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An Efficient Heuristic Method for Solving Vehicle Routing Problem

K Pandeeswari[1], P Gomathi[2]

[1]Assistant Professor, CSE, [2]Dean & Professor, EEE, NSN College of Engineering and Technology, India

Abstract: *A solution is designed for the vehicles to minimize the cost of distribution by which it can supply the goods to the customers with its known capacity can be named as a vehicle routing problem. In Clarke and Wrights saving method and Chopra and Meindl savings matrix method mainly an efficient vehicle routing can be achieved by calculating the distance matrix and savings matrix values based on the customers location or the path where the customer's resides. The main objectives of this paper are to reduce the total distance and the total number of vehicles which is used to deliver the goods to the customers. There are few new algorithms which are mainly based on the min-min, max-min and k-means clustering algorithm techniques which are used in cloud computing and data mining scenario effectively. The proposed algorithm decreases the total distance and the number of vehicles assigning to each route. The important thing we need to consider here is that, this new algorithm can enhance the Chopra & Meindl saving matrix method and Clarke and Wright saving matrix method.*

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Reversible Approximate Adder Using Feynman Gate in QCA

Aravinth B[1], P Gomathi[2]
[1]Assistant Professor, [2]Professor, NSN College of Engineering and Technology, India

Abstract: *A Reversible approximate adder using the Feynman gate implement with QCA is demonstrate. In this paper propose a new reversible adder circuit for approximate full adder. Using this reversible approximate adder reduce the circuit complexity and area consumption. This adder Gives approximation value of the full adder with low error rate.*

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MMPR Based Energy Efficient Protocol Used for Wireless Co-Operative Networks

Ranjitha R[1], P Gomathi[2]
[1]Assistant Professor, [2]Professor, Department of ECE, NSN College of Engineering and Technology, India

Abstract: *In wireless networks, for communication between the transmitting and receiving nodes, neighbouring nodes are recruited. For co-operative transmission of data, Co-operative communication protocol and Co-operative along Non-cooperative path (CAN) have been found to be the energy efficient protocols over the two non-cooperative schemes- one path and disjoint paths. This is applicable to grid and random topology for energy saving up to 80% and 40%. Minimizing the Maximum used Power Routing Algorithm (MMPR) is the proposed energy aware routing protocol which minimizes the total energy consumption and link cost. Moreover, MMPR performs an optimization used in the LPF-Based-Re-Routing (LPF-RR) which finds route for minimizing the maximum link utilization in Traffic Engineering (TE) and uses utilized energy as a metric of cost equation. MMPR is also used in Mobile adhoc network (MANET).*

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DIP Based Biometrics Techniques for Security

S Poovarasan[1], P Gomathi[2]

[1]Assistant Professor, Department of ECE, [2]Professor, Department of EEE, NSN College of Engineering and Technology, India

Abstract: *With the development of consumer electronics, the demand for simple, convenient, and high-security authentication systems for protecting private information stored in mobile devices has steadily increased. Security is essential one. Private information is traditionally provided by using passwords or Personal Identification Numbers. Passwords if used correctly are low risk, cost effective. One can easily hack the passwords from others. To overcome the password attack problems, biometrics techniques are implemented. In this paper deals with providing security and types of biometric methods .I assure that my paper will assist you to know this technique, not only the benefits but also their limitations. In this paper, we propose a real-time embedded finger-vein recognition system for authentication on mobile devices.*

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Virtual Control Using MEMS Sensor

Arun Rajha V[1]

[1]Assistant Professor, Department of ECE, NSN College of Engineering and Technology, India

Abstract: *The goal of this venture is to make an intuitive virtual control. The advancements utilized here are Miniaturized (Micro) scale, MICRO ELECTRO MECHANICAL SYSTEMS (MEMS), Flex sensors, Zigbee arrange convention. MEMS is the innovation of little gadgets which converges at the Nano-scale into Nano electromechanical frameworks (NEMS) and nanotechnology. An accelerometer is utilized to gauge the development of the hand. Accelerometer is an instrument for measuring quickening, distinguishing and measuring vibrations, or for measuring speeding up because of gravity (slant). They can likewise be utilized to quantify seismic action, slant, machine vibration, dynamic separation and speed with or without the impact of gravity. The gadget is set in our grasp, so that by moving our hand we can control the mouse pointer and clicking alternatives moreover. This development control is given to the gadget or the framework in which the applications are to be utilized. This is done in remote by method for Zigbee convention. This convention gadget gives different component as the correspondence remove for Indoor/Urban: up to 40 m, at open air observable pathway, up to 120 m.*

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PCM based Free Cooling for an Passive Architecture

Satheeshkumar P[1]
[1]Assistant Professor, Department of Mechanical Engineering, NSN College of Engineering and Technology, India

Abstract: *The concept of free cooling is gaining more importance in present days and its truly green concept. with the help of free cooling concept we can avoid burning carbon for the purpose of cooling .free cooling is the process of storing cool energy from the atmosphere during the night time for reducing the room temperature during the day time period. In the present work phase change material is used as storage device for cooling application. It will absorb the cold air during the night time and PCM get freezes and retrieved the stored cold energy during the day time by passing the hot atmosphere air over the phase change material and cold air passes into room and reduces the room temperature.*

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Efficient Active Resistor Based Clock Gating Design for the Implementation of Arithmetic and Logic Circuit Design

S Baskar[1], **P Gomathi**[2]
[1]Assistant Professor, [2]Professor, Department of ECE, NSN College of Engineering and Technology, India

Abstract: *At present scenario reduction of supply voltage in integrated circuit become a critical deign problem with in a required range of operation. Clock gating attentive low power arithmetic and logic unit has constructed as a component of low power processor design techniques which is used to turn down on the whole power utilization in the chip, but in turn it arises the setback of transient switching noise on the power rail. Clock power lessening in ALU (arithmetic and logic unit) using double edge triggered clock gating circuit terms to be the efficient clock gating techniques than the traditional approaches. All traditional clock gating circuits has suffered power noise problem which has overcome by various on and off-chip de-coupling capacitance techniques which in turn further optimized using active resistor technique which outperforms the existing methodologies in reducing the duration of transient oscillation in the power and ground rail. On simulator, the proposed dual edge trigged clock gating circuit with active resistor method achieves 23% efficiency in clock power reduction than the existing techniques.*

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Car Society Formation using Cellular Automata in Vehicular Adhoc Network

Keerthika S[1], P Gomathi[2]

[1]Assistant Professor, Department of ECE, [2]Professor, Department of EEE, NSN College of Engineering and Technology, India

Abstract: *This paper aims to increase the lifetime of interest groups, clustering the interest of car drivers and increasing the throughput in vehicle-to-vehicle environments by a novel approach. It develops the cellular automata clustering in VANET by exploiting the zone of interest for mobicast communication. The key to the proposed method is by integrating CA clustering with the ontology of user's interest. This paper concentrates on interest profile of driver and vehicular information to form a group of VANET related interests.*

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Industrial Automation Using Locomotive Sensor for Man Machine Interface

P Dinesh[1], P Gomathi[2]

[1]Assistant Professor, [2]Professor, Department of ECE, NSN College of Engineering and Technology, India

Abstract: *This paper presents a new way of automation in the industry in some aspects. Generally the automation in industry covers only particular areas but not in many areas. In this design, the included parts are the automatic power ON/OFF to the working area, notifying the work time of employee and the temperature control of the working area. The circuit in this project supplies the working area with power when motion is detected. When the motion disappears it turns the power OFF and the non-working time of the employee is noted. When the working area temperature exceeds normal temperature, this circuit will switch ON the Fan/AC. A Microcontroller is used in this circuit, which receives signals from a PIR sensor which detects any individual approaching the device. The Microcontroller controls the ON/OFF logics, when used as a lighting switch for shutting off the standby power. The Microcontroller monitoring program provides automatic detection of any individual by means of the PIR sensor. The Microcontroller has internal modules to simplify the hardware circuit design. The circuit component count, cost and power consumption capability are low.*

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More Crops per Drop in Agriculture Using Embedded System

Nivetha T[1], P Gomathi[2]

[1]Assistant Professor, [2]Professor, Department of ECE, NSN College of Engineering and Technology, India

Abstract: *This article surveys different drip irrigation techniques developed for agricultural fields. Fresh water resources which is deficient, so that consumption of water is very much important. Because of that we use drip irrigation, in that moisture control and time limitation is necessary. Optimal usage of water resources has been provided with greater extent by automation using devices like solar power, drip irrigation, sensors, GSM modem and remote control. This article describes the low cost wireless drip irrigation with the acknowledgement to the end users by GSM modem and real time monitoring of water content in the soil. This mainly based on three sections, Base Station Section, Valve Section and Sensor Section. This is the advance of Precision agriculture, Sprinkler irrigation and Centre Pivot irrigation. This paper works with three conditions, First one is Moisture Monitoring and the next is Water Level of the plants, the final one is Time Limit. All the moisture values, water level is controlled by PIC microcontroller, this is interfaced with the GSM modem which send the message to the end users. This system is also controlled by web based technologies which also be possible. This method provides efficient management of water in the agriculture field.*

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Analysis of Fault Tolerant Parallel FFTs against Soft Errors

Parvathi M[1], P Gomathi[2]

[1]Assistant Professor, Department of ECE, [2]Professor, Department of EEE, NSN College of Engineering and Technology, India

Abstract: *For a reliable communication the transmitted information should reach the destination as such. The information that we transmits get altered due to many reasons. One of the main reasons in communication system is soft error. Even though soft error does not make any physical damage to the communication system, it alters the values stored in the system. It can alter the transmitted message. Complex circuits are affected by soft errors in electronic circuits. Algorithmic-Based Fault Tolerance (ABFT) techniques are used to detect and correct errors in the electronic circuits. Fast Fourier transforms (FFTs) plays an important role in many communication and signal processing systems. Fast Fourier transforms (FFTs) are the basic building block in many systems. In real time application systems, numbers of blocks operating in parallel are used. A lot of techniques are available to detect the soft error and correct it. All these assume that there can only be a single error in the circuit. Reduced Precision Redundancy (RPR) technique is used in this paper to detect and correct multiple errors.*

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Path Tracking and Theft Identification

R Arulmani[1], P Gomathi[2]

[1]Assistant Professor, Department of ECE, [2]Professor, Department of EEE, NSN College of Engineering and Technology, India

Abstract: *This paper describes the design and implementation of path tracking, theft identification and speed control for critical zones in two wheeler. It uses PIC, GSM, GPS. If we are going to new place, and then we doesn't know about the path to reach the destination. In this case we just send the SMS to the server, and then it will send the path to the user. It uses GPS for finding the current position of vehicle and GSM for transmitting and receiving message. Tracking system is used to show the map. But implementation in two-wheelers like motor cycle is a challenging one because they are full of mechanical comments and has no electronic support in them. This paper introduces a first of its kind vehicle tracking system that works only using GSM technology, which would be the cheapest source of vehicle tracking theft identification system. It is a small kit that consists of a GSM module and several other components. The system can be switched ON by an SMS from the owner, which in turn instructs the microcontroller to turn OFF the vehicle, receive in- formation about the vehicle's current location or more. The controller and GPS is used to control the speed of the vehicle in critical zones.*

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Patch Antenna Based on Micro Strip for RFID Application

S Salavudeen Sait[1], P Gomathi[2]

[1]Assistant Professor, Department of ECE, [2]Professor, Department of EEE, NSN College of Engineering and Technology, India

Abstract: *An enhanced micro strip patch antenna deployed with stacked radiators is proposed in this paper. The proposed antenna is fed by a probes feed. The proposed antenna consists of two stacked patches optimized with an S-shaped impedance-matching network (IMN), with appreciable actual ratio, return loss and impedance performance in the operating bands of 2.25 GHz and 2.58 GHz. The proposed antenna system consists of two square radiating arms and they are truncated at the edges and the feed is adhered to the patch at the bottom substrate. The tapered edges results in better impedance matching and bandwidth performance. The peak gain is optimized in the frequency range from 2.23 to 2.65 GHz of larger than 6 dBi, and it achieves 6.39 dBi in the centre frequency of 2.50 GHz. The voltage standing wave ratio (VSWR) impedance bandwidth is VSWR < 2 in the resonant frequencies bands.*

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Dynamic Transient Analysis in Predicting Disc Brake Squeal

Prabhu N[1], Satheeshkumar P[2], Sivaraja M[3]

[1,2]Assistant Professor, Department of Mech. Engineering, [3]Principal, NSN College of Engineering and Technology, India

Abstract: *Brakes and tires are the major contributors for catastrophic failure of ground vehicles. Braking system is the utmost important besides tire to ensure the safety of users and vehicle. Automobile brake noise and vibration have become an increasing concern to manufacturers, consumers and investigators. Friction can result in a series of acoustic problems. Brake squeal may be considered to be a type of friction-induced noise. Friction-induced noise is generally divided into two categories: squeal or squeak and chatter, groan, or moan. Many studies have been performed in view to modelling the vibration phenomenon of the piston pad of the disc brake. Two different analysis methodologies using the Finite Element method are available for predicting disc brake squeal, namely complex eigenvalue analysis and dynamic transient analysis. In the present study, transient analysis of piston pad of the disc brake is performed in ANSYS to predict its dynamic vibration and noise characteristics and its dependency on the hydraulic pressure of the system. The prediction would be complete if MATLAB software is used in addition to the ANSYS software. The response signal of the pad against hydraulic pressure is captured in the ANSYS software by performing transient analysis. The captured signal is then processed with the help of MATLAB software by invoking the FFT algorithm to find out the squeal frequency during braking conditions. The present project attempts to develop a novel idea of predicting squeal in the disc brake without experimental work thus by saving money and time this method of using the capabilities of the software to predict the squeal would definitely create an interesting atmosphere among designers and researchers.*

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Reconfigurable Wireless Sensor Network Application of Air Conditioner Controller through IoT Technique

Kalaivani S[1], P Gomathi[2]

[1]Assistant Professor, Department of ECE, [2]Professor, Department of EEE, NSN College of Engineering and Technology, India

Abstract: *A sensor device is important role play for sensor data collection of industrial wireless sensor networks (WSN) in automation applications. The reconfigurable wireless sensor network reliable measurement of parameters by smart sensors and transmission of data via internet. However collection of data such as sampling rate and signal types of sensors are efficiently transferred commonly restricted by the device. Meantime in the Internet of Things (IoT) environment each sensor connected to the device is required to write complicated and restrict some data collection and control program code. In this proposed system to solve these problems a new method is introduced to design a reconfigurable smart sensor interface for industrial WSN through IoT environment in which ARDUINO (AT mega 8A) is adopted as the core controller and Zigbee module. In this system presents a wireless sensor network using temperature, CO2 gas, air humidity and temperature surrounding location in buildings. This network automatically controls varies applications by means of changing temperature settings in air conditioners and fridge. The presented method hardware implementation without affect interior devices of the air conditioner. The wireless sensor network measures temperature, unnatural gas and humidity around occupants and further transmits temperature commands for air conditioner control. Based on the measured data this system aims to automatically maintain human thermal comfort as well as save energy and protect ozone layer depletion from CO2 gas. Temperature sensor, Humidity sensors are used to monitoring the environment parameters data to air conditioner controller unit.*

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Voltage Scalable High Speed Arithmetic and Logic Unit Architecture for Processor Design

Kiruthiga S[1], P Gomathi[2]

[1]Assistant Professor, [2]Professor, Department of ECE, NSN College of Engineering and Technology, India

Abstract: *Using the reconfigurable logic of scalable voltage MOSFETs, a 4-bit ALU has been designed for various operations. The ALU can perform arithmetic and logical operations. Scalable voltage transistors have been promising in realizing increased functionality on a chip. A scalable voltage MOS transistor accepts multiple inputs signals, calculates the weighted sum of all input signals and then controls the ON and OFF states of the transistor. This enhances the transistor function to more than just switching. This changes the way a logic function can be realized. Implementing a design using scalable voltage MOSFETs brings about reduction in transistor threshold voltage and power consumption. The advantage of bringing down the number of devices is that a design becomes area efficient and power consumption reduces. The arithmetic logic unit (ALU) is the core of a CPU in a computer. The adder cell is the elementary unit of an ALU. The constraints the adder has to satisfy are area, power and speed requirements. We proposed a low power 1-bit full adder (FA) with 10-transistors and this is used in the design ALU. By using low power 1-bit full adder in the implementation of ALU, the power and area are greatly reduced when compared to conventional design.*

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Ship Surveillance with International Boundary Scanning

G Sivapriya[1], P Gomathi[2]

[1]Assistant Professor, [2]Professor, Department of ECE, NSN College of Engineering and Technology, India

Abstract: *The coastal countries had their boundary limit in the sea, the people in those area undergo fishing `in the sea, due to carelessness or they unknowing cross the border limit of their country. In such situation the lives of fishermen continue to be difficult. The people are shot to death by the neighbourhood militants. Maritime surveillance is of the highest importance in ensuring the safety of the fisherman in the sea and in securing countries borders. In order to meet the challenges and threats relating to safety of navigation, obstacle identification, and overall security surveillance activities are carried out. In our project an alarm system is included which will generate an alarm if they cross the safe zone which is prior to 1 km of the country border, and the alert message will be displayed in the LCD. It also sends that information to the navy control room. Continuous alarm will be generated if they cross the border. If they proceeded further necessary actions will be taken by the navy. An IR sensor is used to detect the obstacles which will give an indication to the fisherman in the presence of any threats. This will save the life of the fisherman whose life is unsafe in sea.*

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Role of Reconfigurable Techniques in Wireless Sensor Network Applications by using FPGA with Microcontroller

B Kirubakaran[1], P Gomathi[2]

[1]Assistant Professor, Department of ECE, [2]Professor, Department of EEE, NSN College of Engineering and Technology, India

Abstract: *Reconfigurable techniques are done a major role in recent embedded and developed applications for the competent message transmissions through the wireless sensor networks(WSNs).Recent days, the industrial based inventions are try to avoid complicated things like size, cost and power. In this type of problems the VLSI oriented concepts play a major role at the same time read the analogue values from the environmental condition is difficult one for the VLSI boards for this difficulties the microcontrollers play a major role for avoiding the complicates. For the period of runtime the superfluous dangle and setback are avoided by this reconfigurable technique. In modern world Field Programmable Gate Array (FPGA) based VLSI kits are extensively used for software and hardware applications. In this paper, major part of the work deals with whatever changes may done by the user during the runtime it ought to not influence the present consecutively process. Here the analogue sensors and digital sensors are read by the microcontroller through that the FPGA and monitor the interior industrial application problems and help the user during the complicated situations.*

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Reduction of Delay and Area in Binary Comparator Using Tree-Based Techniques

Poomaran A[1], P Gomathi[2]

[1]Assistant Professor, [2]Professor, Department of ECE, NSN College of Engineering and Technology, India

Abstract: *The concept of majority gates is used in this system to design cascade-based and Tree-based structures of a 32-bit comparator in Xilinx. Comparators normally perform a comparison function of a<b, b<a, a=b. This function is being checked by Model simulator for both the Cascade and Tree based structures. This system deals with the majority gates reduction thereby it results in the reduction of power and delay indirectly. The majority gate reduction analysis is obtained in this paper resulting in reduction of majority gates lesser than 85 Gates in the Tree based structure. Since the QCA is a design layout nanotechnology tool. The changes of results in whole structural change and association function formed due to crossing of wires are eliminated by implementing in Xilinx.*

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Design of Low Power Test Pattern Generator using Buffers

Dinesh Kumar S[1], P Gomathi[2]

[1]Assistant Professor, [2]Professor, Department of ECE, NSN College of Engineering and Technology, India

Abstract: *Most of the pattern generators used for BIST are sequential circuits consisting of flip-flops. LFSR is one of the most widely used pattern generators comprising of a series of flip-flops with additional xor taps. The use of flip-flops in circuits increases circuit complexity, propagation delay, power consumption and requirement of additional external signals such as reset and clock. Here in this paper we propose a new combinational architecture for pattern generator which constitutes only few logic gates and not flip-flops. Thus this method aids in providing an efficient and effective way in greatly reducing power consumption, delay and complexity.*

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Improvement of Ergonomic Factors in a Textile Industry: A Case Study

K Balasundaram[1], Ashenafi Adugna[2], A Ashok Kumar[3], M S Senthil Kumar[4]

[1,2,4]Department of Industrial Engineering, Institute of Technology, Dire Dawa University, Dire Dawa, Ethiopia

[3]Department of Textile Engineering, Institute of Technology, Dire Dawa University, Dire Dawa, Ethiopia

Abstract: *In industry, ergonomics is an important aspect. The ergonomic factors play an important role in the effective running of a company, so these factors are to be considered seriously. In industry, the various aspects of ergonomic are to be considered that relates with the employees; while working. The ergonomic problems will affect the workers in a negative way; this will lead to a decrease in productivity, non-achievement of the target value, etc. A case study conducted on a textile industry, located in Dire Dawa, Ethiopia. The main aim of this study is to find out the ergonomic problems that affect employees in a weaving unit and also survey is conducted to know the response of the employees about the working conditions provided by the company. According to this study, the responses of the employees are obtained and ergonomic factor that has the highest responses are selected and suggestions are given to improve the factors.*

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Protection Valuation from Radiation Pattern Classifiers under Plan of Attack

Sundarrajan Loganathan[1]
[1]NSN College of Engineering and Technology, India

Abstract: *Design sorting arrangements is unremarkably employed inward adversarial diligences, as if identity verification, meshwork encroachment detective work, and junk e-mail trickling, Inward which information put up live intentionally wangled near mankind to cave their mathematical process. Whilst these adversarial scenarios follows not aimed into chronicle of Hellenic figure formulas, model sorting schemes might expose exposures, whose using could hard move their carrying out, and therefore fix their functional inferior. Leading form assortment hypothesis and pattern techniques to adversarial scenes equals so an original and identical germane inquiry management, which gets not even lived acted on stylish a regular manner. In this paper, we call unrivaled from the chief blazing consequences: Valuating at contrive stage the protection by normal classifiers, videlicet, the carrying into action debasement low-level prospective flacks they fired hold with moral serve: Assessing at figure form the protection from normal classifiers, to wit, the carrying out abjection low-level potency flacks they could obtain on surgery. We advise an theoretical account as existential valuation from classifier protection that formalizes and generalizes the important themes purported inwards the lit, and devote exercises from it is function stylish target material lotions. Described events express that surety valuation may ply an further concluded intellect from the classifier's demeanor inwards adversarial surrounds, and go to less spoiled intention picks.*

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Secure Attribute Based Health Monitoring Systems on IoT

Niranchana K J[1], **Vanitha M**[2], **Muthu Lakshmi S**[3], **Jameer Basha A**[4]
[1,2,3,4]Sri Krishna College of Technology, India

Abstract: *The Internet of Things (IoT) is a growing trend populating the world with billions of interconnected devices that relate to physical things, ranging from wearable sensors to smartphones and smart cars. Health experts are increasingly taking advantage of the benefits these technologies bring, thus generating a significant improvement in health care in clinical settings. In numerous ordinary users are helped to improve their health and are being served from the advantages of the M-Health (Mobile Health) applications and E-Health (health care system supported by ICT). Although the IoT has the potential to enable innovative new services and simplify communication between people and objects, it also brings new security and privacy challenges. In this scenario, the conveyed medical data could be routed through a trusted / untrusted network stored in cloud service, potentially exposing privacy-sensitive data to cyber-attacks. The aim of this project is to develop an architecture based on ontology capable of monitoring the health to transmit the data to the remote server and to prevent cyber-attacks. Based on the secure attribute in Health monitoring systems provides the legitimate access to the registered and unregistered users. With the help of secure attribute based health monitoring systems sharing scheme using selective disclosure of attributes, which satisfies the security requirements.*

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Effect of Surface Modification of Magnesium Alloy AZ91D by Friction Stir Processing

M K Prabhu[1], G Rajamurugan[2]
[1,2]Department of Mechanical, Bannari Amman Institute of Technology, India

Abstract: *Cast Mg alloys were processed using friction stir processing (FSP) to attain a fine grained structure and high strength. Actually, It is a novel grain refinement method for light metal alloys and is effective to eliminate cast defects such as porosities or micro shrinkages. In this paper, the effects of FSP parameters on the mechanical properties and microstructures of as-cast magnesium AZ91 alloy are investigated. Micro hardness and Grain-growth of friction-stir-processed specimen's Nano-sized Boron Nitride (BN) particles are processed. In this present investigation, surface property of Magnesium alloy AZ91 D is modified by reinforcing Boron Nitride (BN) powder particles via FSP. By keeping volume fraction (22.38%) constant, the distribution of BN particles were examined for different reinforcing techniques, based on Hardness and Impact strength.*

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Characterization of Natural Fibre Composite Using Banana and Sisal

A Yuvaraj[1], M K Prabhu[2]
[1,2]Department of Mechanical, NSN College of Engineering & Technology, India

Abstract: *Fibre reinforced plastics are widely used in automobile sector as engine bonnet, dashboard, front and rear panel etc., as it possess higher strength to weight ratio and non-corrosive nature. Generally synthetic fibre is used as the reinforcing agents but its high initial cost and high energy consumption in manufacturing process. The synthetic fibre based on polymer composites and natural fibre composites due to its low cost, low density, good thermal properties.in the present study we are making a reinforced composite plate of banana and sisal fibre separately using polyester resin .Before we make the plate for apply NaOH solution for improving mechanical properties. The samples of this fibre subjected to mechanical tests like tensile, compression and impact tests. This sample result of banana and sisal reinforced plate are compared with each other.*

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An Experimental Study on Replacement of Cement with Fly Ash, Fine Aggregate with Graded Quarry Dust and Coarse Aggregate with Ceramic Waste Tiles in Concrete

M Suresh[1]
[1]Assistant Professor, Department of Civil Engineering, NSN College of Engineering, India

Abstract: *In this industrial world, use of waste construction materials and by-products plays an important role to preserve natural resources. The main objective of this study is to investigate the potential use of various solid wastes and by-product wastes for producing construction materials. The paper is based on the comprehensive review of available literature on the construction materials including different kinds of solid wastes and by-product wastes. The traditional methods for producing construction materials are using the valuable natural resources. Besides, the industrial and urban management systems are generating wastes, and most often dumping them in open fields. These activities pose serious detrimental effects on the environment. To safeguard the environment, many efforts are being made for the use of different types of solid wastes (ceramic wastes) and by-products (fly ash and quarry dust) with a view to utilizing them in the production of various construction materials. The raw materials of concrete consist of cement, sand and crushed aggregates. Partial or 100% replacement of these raw materials by waste products may decrease the cost, reduce the energy consumption and also reduce the environment pollution. Wastes can be used to produce new products or can be used as admixtures so that natural sources are used more efficiently and the environment is protected from waste deposits.*

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Selective Harmonic Elimination PWM in Cascaded Multilevel Inverter for Harmonic Reduction by Using Controller

P Thenmozhi[1], **P Gomathi**[2]
[1]Assistant Professor, [2]Professor, Department of EEE, NSN College of Engineering & Technology, India

Abstract: *Selective Harmonic Elimination Pulse Width Modulation (SHEPWM) method is systematically applied to multilevel Cascaded Inverter Called PWM inverters. The method is implemented based on optimization techniques for reduction of Harmonics of Non Linear Loads. The optimization starting point is obtained using a phase-shift harmonic suppression approach. This paper proposes a hybrid selective harmonic elimination pulse width modulation (SHEPWM) scheme for Harmonics reduction in Non Linear Loads using Cascaded multilevel inverter. The scheme uses the SHEPWM to control the inverter at low frequency. In this method the Total Harmonic Distortion (THD) is reduced by using SHEPWM in closed loop. Finally the THD is compare with, before and after LCL filtering condition. Here the THD should be reduced in nonlinear loads by using a cascaded multilevel inverter topology. This proposed topology involves less number of switches. It dramatically reduces the switches for high number of levels that reduces the switching losses; cost and low order harmonics and thus effectively decreases total harmonics distortion. The Results are simulated using MATLAB Simulink and Outputs are notified and Control Graphs are obtained.*

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Blow Down Heat Recovery System Using Heat Exchanger

Sureshkumar M[1], Uthirakumar K[2], Sreshkumar C[3], Raja K[4], Sudhakar V[5]

[1,3]Assistant Professor, [2,4,5]Students, Department of Mechanical Engineering, NSN College of Engineering, India

Abstract: *In industry steam generators are the major fuel consumers. In a normal steam generator about 4% of hot water is wasted as blow down. Due to this, a1111q1 large amount of heat energy is wasted. A heat recovery system to prevent heat losses, so that a large savings can be made. So in this a heat recovery system was designed to minimize the losses. The water drained at the lower pressure and temperature is passed through a heat exchanger where heat is transferred to treated make up water and raises its temperature.*

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Privacy Preserving Data Leak Detection Using Rabin Fingerprint Method

R Sathishkannan[1], U Karthick[2], P Gomathi[3]

[1,2]Department of CSE, [2]Department of EEE, NSN College of Engineering & Technology, India

Abstract: *Statistics from security practices, research organizations and government administrations show that the numbers of data-leak requests have developed rapidly in recent years. Among several data-leak cases, human mistakes are one of the main reasons of data loss. There exist results detecting unplanned sensitive data leaks caused by human mistakes and to provide signals for organizations. A common approach is to monitor content in storage and transmission for exposed sensitive evidence. Such an approach usually needs the exposure operation to be displayed in confidentiality. We present a privacy preserving data-leak detection (DLD) explanation to answer the issue where a special set of sensitive data digests is used in recognition. The advantage of our technique is that it enables the data owner to safely agent the detection procedure to a semi honest source without revealing the sensitive data to the provider. We describe how Internet service suppliers can offer their customers DLD as an attachment service with strong privacy guarantees. The valuation results show that our method can support correct exposure with very small number of false apprehensions under many data-leak circumstances.*

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Parametric Optimization of Ultrasonic Welding of Polyester Sheets Using Taguchi's Design of Experiments

J Karthikeyan[1], M Sivaraja[2]
[1,2]NSN College of Engineering, India

Abstract: *Ultrasonic welding process is being widely used in many manufacturing and other engineering industries. Though the process has been extensively used for joining metals, joining of plastic parts by means of ultrasonic welding is done only in limited applications. The success of welding plastics depends on many factors such as the machine setting parameters, properties of the plastic parts, design of the horn tool, horn material etc. While the other factors can be made close to our requirement, machine setting parameters plays a crucial role in deciding the weld quality of the joint. Parameters such as weld pressure, weld time, hold time, amplitude, down speed etc has to be kept at optimum level to obtain the best weld strength in the joint. This study has been conducted to determine the optimum parameters to be set in the ultrasonic welding machine for welding of polyester sheets, so that the joint can be obtained with best weld strength. Taguchi's design of experiments has been used for analysing and optimizing the setting parameters in the machine.*

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Correlation between Ultrasonic Parameters, Mechanical Properties and Microstructures of Mod T91 Ferritin – Martensitic Steel (PFBR)

Ramachandran K[1], M Arun[2], M Sivaraja[3], Vaidehi Ganesan[4]
[1,2]Assistant Professor, Department of Mechanical Engineering, [3]Principal, NSN College of Engineering & Technology, India
[4]Indira Gandhi Centre for Atomic Research, India

Abstract: *Mod T9 1 ferritin martensitic steel is used as steam generator material in Prototype fast Breeder Reactor (PFBR). The objective is to determine the long term aging characteristics of modified T91 (Steam generator material). In general, steam outlet temperature is 525°C in PFBR. Results of low temperature aging (around 4000C) for higher durations and high temperature (6500C) aging for lower durations are expected to be comparable. This is an accelerated test to check the stability of the material after high temperature and long durations. This is an out of pile experimental study to check the stability of the material at various conditions (6500C - 5000, 10000, 20000hrs).*

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A Real Time Analytical Architecture for Weather Fore Casting

U Karthick[1], R Sathishkannan[2], P Gomathi[3]
[1,2]Department of CSE, [3]Department of EEE, NSN College of Engineering, India

Abstract: *In each technology there is one same challenge added to Big Data collected from remote sensing application than it collecting the information, and extracting the most required information in a proficient way leads a system on the way to major computational challenges, such the challenges are examine, load, and aggregate, everyplace data are remotely collected. In the view of observance above stated factors, there is a necessity for designing system architecture those receptions both real-time data processing, as well as offline data processing. In this paper, we propose an analytical architecture on big data for remotely detected data from satellite application. The proposed architecture comprises three main units:1) Remote sensing Big Data acquisition unit (RSDU); 2) Data processing unit (DPU); and 3) Data analysis decision unit (DADU). In starting stage, RSDU gets data from the satellite and then transmit this data to the Base Station, where the initial processing of data takes place. Next, DPU acting an important role in architecture for effective processing of real-time Data collected from remote application by given that filtration, load balancing, and parallel processing. In final stage, DADU is the top most layer unit of the offered architecture, which one is responsible for compilation, loading of the results, and Generation of decision based on the results acknowledged from DPU.*

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Quick Response Barcode Denoising and Deblurring Using Wiener Filter

J Stephy Graph[1], P Gomathi[2]
[1]Assistant Professor, Department of CSE, [2]Professor & Dean, Department of EEE NSN College of Engineering & Technology, India

Abstract: *The quick response (QR) code is two dimensional which is similar to a barcode. The difference between QR code and barcode is that, a barcode holds information only in the horizontal direction, while a QR code can hold information both horizontally and vertically. This is the reason why QR codes are referred to as two-dimensional. The two methods are proposed to deblur and denoise the QR barcode. The contents like text, links, etc can be hidden in the QR code and those hidden contents can be read using smart phone scanners. The size of the QR code image varies depending upon the length of the texts or links. The visual quality of QR code image is improved by using the wiener filter.*

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Smart Trolley System

R Kanmani[1], A Jameer Basha[2], V Roopa[3], S Kumar Valliappan[4], P Abdul Basith[5]
[1,3]Associate Professor, [2]Head of the Department, [4,5]Student, Sri Krishna College of Technology, India

Abstract: *Shopping trolley is also called shopping cart which is like a carriage or basket that can be used by customers to transport their purchased product inside grocery shops or supermarkets. In European and Canada, the supermarket performs a coin locks system on the shopping carts in order to encourage the customers to return the carts themselves after use. In addition, the design of shopping trolley was concerned. This is because poor designed shopping trolley can cause potential muscles-skeletal injuries from manually pushing or pulling heavy loads. A market survey was conducted where the results shown that most of the users expected the shopping trolley to feature energy saving, pulling and pushing motion and adjustable height. In this project, a portable robot with human and line following functions was developed to assist customers to carry a heavy load while shopping in the supermarket. Meanwhile, a smart shopping system was also developed in order to identify the location of each item in supermarket in assisting customers to locate the desired items. Besides, the customer is informed of the current location of the shopping trolley.*

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Smart Pollution Detection and Monitoring System in Vehicles Using Sensor and IOT

Vanmathi S[1], Sowbharraniga S[2], Suresh Kumar A[3]
[3]Assistant Professor, [1,2]Sri Krishna College of Technology, India

Abstract: *In the present day modern world vehicles have become a part and parcel of every one's life. Situations and circumstances have their predominant urban life. Each and every vehicle will have emission but the main problem occurs in the case when it is beyond the standardized value fixed by the pollution control board of India. The main reason behind this violation of emission level being the expurgated combustion of fuel supplied to engine, which is due to the improper maintenance of vehicles. This emission from vehicles cannot be completely avoided but, it definitely can be controlled. With the unfolding of semi-conductor sensors for detecting the various gases, this project aims at using those semiconductor sensors at emission outlets of vehicles which detects the pollution. When the pollution/emission level shoots beyond the already set threshold level, there will be a buzz in the alarm unit. The pollution detector is connected to the cloud storage through a IOT device and the cloud technology is used to store the database. The information's present in the database is retrieved by using the hadoop tool. The gas level is compared with the threshold level and a list of vehicles above the threshold level is prepared and this process is done weekly once. We have a warned list and a fined list where that particular vehicle receives a voice message.*

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An Advent of Light-Fidelity Technology using Visible Light Communication

R Kanmani[1], A Jameer Basha[2], M Malathi[3]
[1]Associate Professor, [2]Professor & Head, [3]Assistant Professor, Sri Krishna College of Technology, India

Abstract: *Wi-Fi network is relentlessly expanding nowadays. Radio spectrum is in receipt of congested and counterclaim for wireless data and its capacity is drying up. Wireless radio frequencies are getting higher, complexities are increasing and RF interferences continue to grow. RF can provision only a restricted bandwidth due to cramped spectrum accessibility. One such epitome that potentials to alleviate the shortcomings as stated above is Light Fidelity or simply, 'Li-Fi'. It is also known as Visible light communication (VLC). Li-Fi uses light as a carrier signal instead of traditional RF. Li-Fi makes possible in some specific environments (aircrafts, hospitals) where Wi-Fi is not indorsed due to interfering or security concerns. This paper will focus on Li-Fi technology over Wi-Fi technology and challenges for the new VLC technology.*

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Thermal Analysis and Performance Estimation of Outer Rotor BLDC Motor with Corroded Permanent Magnets

P Arumugam[1], S Sutha[2]
[1]Associate Professor, Department of EEE, Mahathamma Institute of Engineering and Technology, India
[2]Associate Professor, Department of EEE, University College of Engineering, India

Abstract: *This paper intended to explore the performance losses in outer rotor BLDC motor due to Permanent Magnets. Magnetic Aging and Surface level damage are biggest thread to Permanent magnet motors. In BLDC motor based electric vehicles, especially in In-wheel propulsion, Permanent magnets plays vital role in torque development. But naturally those magnets are more vulnerable to Nature, specifically to moisture and Corrosion. In this paper, detailed investigation BLDC motor with corroded Permanent magnets has been carried out. Each power loss components have been modelled to estimate the losses occurred in this motor. Due to corrosion, the effective magnet length towards the magnetizing direction has been reduced. This reduction directly impacts the flux concentration because of change in physical dimension of the air gap. The entire operation of the motor has affected. This change is air gap length initiates losses in both stator and rotor of the motor and ultimately reduces the performance of the motor. A real time corroded Permanent magnet motor has been investigated to analysis the possible level of performance reduction in BLDC outer rotor motor. The detailed Thermal studies of the motor have been performed with corroded magnets This paper extends to various ranges of Power rated motors affected by surface level damage in Permanent Magnet motors to understand the behaviour of the Permanent magnets in Electric Vehicle Propulsion.*

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Analysis of Multiple Account Holders in Various Banks Using HADOOP Technology

Abishek Rajagopal[1], Mukundhan Lakshmanan[2], Gowri Sankari A[3], Poongodi Palaniswamy[4]
[1,2,3,4]Department of Information Technology, Sri Krishna College of Technology, India

Abstract: *In this electronic age, there is an increasing account holders in all banks. Hadoop is an open source projects that gives us the framework to deal with big data. Big data analytics is the method of inspecting large data sets and analysing large volumes of data to uncover unknown correlations, customer preferences, hidden patterns and other business information. The analytical findings will be more effective for marketing, improved operational efficiency and analyse large amount of data. In this paper each user's data is divided into multiple Tuples and stored in Database of different sets, and so it will be easy to track the account holders. We have sketched an Application to track multiple account holders who have accounts in different banks by the same user and who have withdrawn 2500 per day. For tracking the user's details, we are using unique ID (pan card). Now a day, plan card number will be easy to track the user's details and it will be very essential for banking sector.*

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Incorporating Virtualization in Map Reduce for Efficient Data Movement in HADOOP

K Sindhanaiselvan[1], P Elakkiya[2]
[1]Assistant Professor, [2]PG Scholar, Department of CSE, M Kumarasamy College of Engineering, India

Abstract: *Map reduce is a parallel programming model for efficient process and generating information sets. It has been widely used in database systems for big data analytics. Big information analytics is a technique used for analysing giant volume of knowledge and provides higher cognitive process and conjointly support optimization processes primarily for the information collected from the social media websites. Map Reduce needs a shuffling section to globally exchange the intermediate information segments generated by the mapping phase. The existing system has the virtual shuffling that enable information movement and scale back I/O for map reduce shuffling and reduction in disk I/O access but it is not efficient. In the proposed system, the efficient data action in map reduce for fast analytics of big data thereby saving the power consumption and energy conservation which represent common input division in a essential manner and to minimize the shuffling of data and balancing the data shuffling process then to dynamically coordinate and merge without degrading the performance. The proposed method for shuffling in map reduce is performed through a mixture of some techniques together with a dynamic and balanced sub trees, merge process ,three-level segment table and data ranking method.*

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Discovery and Prevention Techniques for Discrimination

T Sangeetha[1], K Sorna Deepika[2], V Srimathi[3]
[1]Assistant Professor, [2,3]UG Scholar, Department of Information Technology, Sri Krishna College of Technology, India

Abstract: *Discrimination is action that denies social participation or human rights to categories of people based on prejudice. It includes unjust or unequal treatment of different groups of people, especially on the grounds of race, religion, age, or sex. Discrimination is one of the negative social perceptions about data mining. Automated decision making is the main aim of the data mining such as classification rule mining etc. Historical training dataset is used for creating decision models. If the training dataset is modified unfairly on the discriminatory attributes, discriminated decisions may occur. So the antidiscrimination techniques are introduced with the data mining. In proposed anti-discrimination system, discriminations are discovered using the elift, slift measures. The identified discriminations are transformed into discrimination free dataset in discrimination prevention phase. Discrimination prevention is done by rule protection and rule generalization methods. Discrimination prevention phase constructs the system that does not lead to discriminatory decisions even if the original training datasets are inherently biased. So the training and outsourced datasets are cleaned and produce a non-discriminatory (legitimate) classification rules. The performance of proposed anti-discrimination methods is evaluated using degree of discrimination removal and impacts of methods are measured in terms of information loss.*

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Free Rider Isolation Using Aggregated Trust Model Including Weightage Considerations

P Arockia Mary[1], M Radhakrishnan[2]
[1]Associate Professor, Department of CSE, [2]Director/IT, Sudharsan Engineering College, India

Abstract: *One common issue in P2P overlay networks is Free-Riding in which some peers only receive files from other peers but never or seldom give files to others. Free-riders affect the strength and efficiency of the overlay and hence need to be checked and isolated from the network. Methods are available to identify and isolate free-riders using trust models. Most of such models use the feedback from other peers which have inherent issues like malice and unreliability. Behavioural trust models that permit self-evaluation by peers with built-in measures for fairness have received less attention. An Aggregated Trust model that evaluates the trust value of a peer from its own benefit and contribution history is presented in this paper. The model takes into account not only the size and number of the files exchanged but also the weightage of each file based on its size and popularity. A comparison with the results of aggregated trust models show that the proposed model is more efficient in isolating the free-riders.*

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A Novel Approach on Learning Material Retrieval in E-Learning System

Arul Kumar V P[1], Ramesh P N[2]
[1]Assistant Professor, Dhanalakshmi Srinivasan College of Engineering, India
[2]Assistant Professor, Karpagam Institute of Technology, India

Abstract: *Nowadays retrieving books, articles and tutorials for learning any topics or technology is a challenging task. Learners struggle to find relevant study materials to their interested topic or technology. Our work assists learners to find their relevant study materials in an e-learning system.*

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FPGA Based Multi Rail Chopper by Using MSP 430 Processor

A Jayapal[1], P Manimekalai[2], M Gowri Shankar[3]
[1]PG Scholar, [2]Dean Academic, [3]Assistant Professor, Department of EEE, Selvam College of Technology, India

Abstract: *This paper is projected on mixed signal processor (MSP) based digital controllers which are characterized with specific optimization. The proposed Dual multiply¬-accumulate (MAC) architecture has implemented using Field Programmable Gate Array (FPGA) and design multi chopper. A detailed description of flexible dual multiplier accumulator processor architecture is given and comparison is made with an existing solution with respect to its application.*

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Accident Information System for Major Collision in Vehicles

Vigneshwaran G[1], Sivadhevan S[2], Hariprasad A[3], Prabhu N[4]

[1,2,3]Student, [4]Assistant Professor, Department of Mechanical Engineering, NSN College of Engineering and Technology, India

Abstract: *The accident information system for major collision is achieved by using pressure sensor GPS and GSM. Sensor having its own amplifier and the amplifiers is connected to the micro controllers and the micro controller has the two connections first one is the display unit and the second one is the GSM informer unit. The model having one four wheeler chassis frame with pneumatic cylinder and the microcontroller integrated with electronic system, the cylinder is connected with front axle and rear axle. Both axle frames are joined through telescopic arrangement if the chassis frame get any impact through collision then the pneumatic cylinder having pressure relief valve was opened. The pressure sensor was connected with the electronic system. The pressure sensor finds the pressure at the time of collision and sends the signal to electronic system. The electronic system will use the signal and send the information as text message to the present contacts by the program in the electrical system automatically. Data communication via various electronic devices helps us to transmit data at high speeds over large areas. This will helps to the vehicle owner or related persons to take some actions to rescue from the accident. This accident information for major collision was best suited for call taxi firm. The main advantage of this project is the information transmit was only occur when major accident occurred not for silly minor accidents so the respected person may free from some unwanted mental stress.*

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Water Absorption and Thickness Swelling Behaviour of Alkali Treated Bagasse Fiber Reinforced Polyester Composites

J Karthikeyan[1]

[1]Department of Mechanical Engineering, NSN College of Engineering and Technology, India

Abstract: *The composite materials chosen for any application, in addition to functional efficiency and improving the various properties of the structures should fulfil some criterion, for the cause of sustainability and a better quality at various environmental conditions. Keeping this in view, the present work has been undertaken to study the water absorption and thickness swelling behaviour of a polymer matrix composite (Unsaturated Polyester) using alkali treated bagasse fibre as reinforcement. Bagasse fibre is alkali treated to improve the interfacial bond strength and adhesion between the matrix and the fibres. Alkali treated bagasse fibres were simply randomly mixed with polyester resin, and composite specimens with fiber contents of 10%, 15% and 20% by weight were fabricated by hand lay-up melding technique. Short term physical properties were investigated by water immersion. Results indicated that the water absorption and thickness swelling increases with increasing of fibre weight fractions and immersion time duration.*

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QR Code Based Location Tracking System – A Survey

M Saranya[1], P Vidhyasree[2], K Jeyapratha[3], S Sabitha[4], S Mohanraj[5]
[1,2,3,4]Student, [5]Assistant Professor, Department of ECE, Cheran College of Engineering, India

Abstract: *QR Codes have long been used to carry small amount of static data, such as URLs, IDs or other short binary sequences. In this paper we surveyed on the use of QR Codes to form a one way communication channel. In this context, a sender is made of a surface displaying rapidly changing code, which are picked up by a receiver's camera and converted back into a binary data stream. After presenting experimental results seeking the combination of frame rate, code size and error correction level maximizes effective bandwidth; we describe the implementation of a robust communication protocol designed, specifically for loss, simplest and low –bandwidth data links. Over findings indicate that such a protocol is sufficient for carrying at least voice quality audio in real time.*

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Car Repairing Time Estimation Using Simulations

Balaji G[1], Radha K[2], Nabeesha R[3]
[1]Principal & Head, Al-Munawara Islamic School-CBSE, India
[2]Associate Professor, KKC Institute of Technology & Engineering, India
[3]Sri Venkatesa Perumal College of Engineering & Technology, India

Abstract: *Simulation is the process of designing a model of a real system and conducting experiments with this model for the purpose of understanding the nature of the system and evaluate various manoeuvring for the operation of the system .Simulations are so helpful in our daily life and also in real time system applications. Simulation experiment can be carried out are Reservation counter of a transport corporation, bank counters, inspection station of an assembly line, automobile assembly line ,computer network, tollgate, manpower hiring decisions ,car parking facility.*

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An Optimistic Approach for Human Peculiarity and Gender Recollection from Stride Successions

S Rajalakshmi[1], S Tamilarasi[2], V Kavitha[3], K C Mohanraj[4], K Mohanaprakash[5]
[1]Professor, [2,3,4,5]Assistant Professor, Cheran College of Engineering, India

Abstract: *In recent years, stride recollection becomes an exigent image processing technology for biometric identification. From the stride successions with whimsical wandering directions, human peculiarity and gender recollection is a strenuous task. In previous work, cluster based averaged stride image are used as attributes. The former method got failed since the wandering style in the testing succession is identifiably disparate when compared to the training successions. In such cases, C-AGI attributes of the aforesaid subject vary widely. To deal with these issues, suggested work extracts more discriminative modal-based attributes to enhance the potential. This approach inquires the fusion of various attributes delivered from manually labelled human silhouettes. Moreover this approach is based on the combination of three discriminative attributes namely area, gravity centre and orientation of each body component. Genetic algorithm is used for stipulating the optimal attributes and the stipulated attributes are used for recollection purpose. Using sparse reconstruction based metric learning method, distance metrics are analysed. By this suggested methodology gives enhanced potential than existing approach.*

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Direct Torque Controller Analysis in Four Phase Switched Reluctance Motor

K Nandhini[1], A Stephen Sagayaraj[2], B Saritha[3], T Mani[4]
[1]Assistant Professor, Department of EEE, NSN College of Engineering and Technology, India
[2,3,4,5]Assistant Professor, Department of EEE, Jay Shriram Group of Institutions, India

Abstract: *Electric motor or the hybrid electric vehicle of switched reluctance for high-speed applications, in order to reduce torque ripple. The SRM is fed by a three-phase unidirectional power converter having three legs, each of which consist of two IGBTs and two freewheeling diodes. The method is based on fixed turn-on angle and turn-off angle as the prerequisite, and estimates on and off position of the sensor less switched reluctance motor. Under the environment of Mat lab/Simulink, the method realizes the sensor less control of the switched reluctance motor. Outcome of mechanical vibration and acoustic noise from both the DTC controller gets analysed in Graphical programming language, Lab VIEW tool. This graphical language gives the efficient and accurate results in terms of mechanical vibration and acoustic noise.*

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A Reconfigurable Adaptive Viterbi Decoder Using Trace back Scheme

Asir Nath[1], Gomathi P[2]
[1,2]NSN College of Engineering and Technology, India

Abstract: *Trellis coded modulation (TCM) schemes are used in many bandwidth- efficient systems. Typically, a TCM system employs a high-rate convolutional code, which leads to a high complexity of the Viterbi decoder (VD) for the TCM decoder, even if the constraint length of the convolutional code is moderate. High-speed, low-power design of Viterbi decoders for trellis coded modulation (TCM) systems is presented. An adaptive decoding algorithm, which is a modification of the Viterbi algorithm (VA) is presented. For a given code, the proposed algorithm yields nearly the same error performance as the VA while requiring a substantially smaller average number of computations. Unlike most of the other suboptimum algorithms, this algorithm is self-synchronizing. If the transmitted path is discarded, the adaptive Viterbi algorithm (AVA) can recover the state corresponding to the transmitted path after a few trellis depths. It is well known that the Viterbi decoder (VD) is the dominant module determining the overall power consumption of TCM decoders. We propose a pre-computation architecture incorporated with T -algorithm for VD, which can effectively reduce the power consumption without degrading the decoding speed much. A general solution to derive the optimal pre-computation steps is also given in the paper. Implementation result of a VD for a rate-3/4 convolutional code used in a TCM system shows that compared with the full trellis VD, the precipitation architecture reduces the power consumption by as much as 15% without performance loss.*

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Monitoring Contingency Power Flow in the Smart Grid by Using Embedded System

Loganathan R[1], Gomathi P[2]
[1,2]NSN College of Engineering and Technology, India

Abstract: *Synchronization is used to minimization of voltage, frequency and phase angle between the corresponding phases of generator. Smart grid mainly implement in the Renewable energy sources, energy efficient sources, smart appliances. By using the smart grid the information recording the grid will get in more secure, efficiently. But in smart grid also synchronization failure has occurring due to voltage variation, frequency mismatch during synchronization. To overcome for these, implementing the embedded system design is to find out the failure reason of synchronization and rectify the failure by varying the voltage and frequency. Before connecting the generated power to grid the system verify the grid voltage and frequency then the system also verifies voltage and frequency generated by the generator. If variation occurs in grid and generator then embedded system will vary generator voltage or frequency otherwise if variation in large value the then the synchronization will disconnect. Internet of Thing is implemented in this paper to find the reason of synchronization failure and process to rectify the synchronization failure.*

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Computation of Wheeling Charges Using MW-Mile Method

Gowtham Kumar R[1], Palanisamy T[2], Loganathan R[3]
[1]karpagam Institute of Technology, India
[2,3]NSN College of Engineering and Technology, India

Abstract: *In the restructured power system need to develop the transmission cost scheme that can provide the useful economic information to power markets, such as generation, transmission companies and customers. In this paper proposes an analytical approach for allocating the wheeling charge based on MW-MILE method. Wheeling cost is the most important parameter for recovering the invested cost. The MW-mile method allocates the charges based on transmission capacity and wheeling distance. The approach based on applying MW-MILE method on IEEE-14 bus system.*

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Analysis and Testing of Underground Insulation for High Voltage Transmission Applications

Anand Karuppannan[1], Gomathi P[2]
[1,2]NSN College of Engineering and Technology, India

Abstract: *A significant amount of electrical leakage and impulse breakdown is present in electrical cable which is employed for high voltage transmissions. Objective of this paper is to improve the transmission capacity by reducing the electrical leakage. Traditionally treated sheep wool, wood fibre, hemp are used for making of the insulation. This project aim is to change the composition of insulation material like mica, poly- prophelyne in a defined proposition. Testing of insulation cables are done at normal and abnormal conditions and the results will be discussed. The strength of the insulation is varied by varying the composition materials. Electrical leakage and dielectric constant of the cable is discussed. It commercially increases the power transfer capacity and reduces the amount of cost for electricity.*

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Generation of Sinusoidal Voltage for Grid Connected Systems Using Maximum Power Point Tracking Technique

Anand Karuppannan[1], Gomathi P[2], Palanisamy T[3]
[1,2,3]NSN College of Engineering and Technology, India

Abstract: *In this project, a grid-connected boost-half-bridge photovoltaic (PV) microinverter system and its control techniques are presented. In order to achieve low cost, easy control, high efficiency, and high reliability, a boost-half-bridge dc–dc converter using minimal devices is introduced to interface the low-voltage PV module. A full-bridge pulse width-modulated inverter is cascaded and injects synchronized sinusoidal current to the grid. An ANFIS (Adaptive Neuro Fuzzy Interference System) current controller is proposed and it is used to regulate the grid current. High power factor and very low total harmonic distortions are guaranteed under both heavy load and light load conditions. Dynamic stiffness is achieved when load or solar irradiance is changing rapidly. In addition, the dynamic behaviour of the boost-half-bridge dc–dc converter is analysed; a customized maximum power point tracking (MPPT) method, which generates a ramp-changed PV voltage reference, is developed accordingly. Variable step size is adopted such that fast tracking speed and high MPPT efficiency are both obtained. A 210W prototype was fabricated and tested. Simulation and experimental results are provided to verify the validity and performance of the circuit operations, current control, and MPPT algorithm.*

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Design of PV Based Permanent Magnet BLDC Motor Using Submersible Pump

Sheela Sankari M[1], Anand Karuppannan[2]
[1,2]NSN College of Engineering and Technology, India

Abstract: *Photovoltaic (PV) powered electric water pumps are becoming popular in remote rural locations due to the non-availability of grid connectivity. A typical PV based drive scheme consists of a PV array, DC-DC converter, inverter-fed induction motor and a water pump. Induction motors are rugged in construction and offer low maintenance but their efficiency is poor at low power levels. The Motors generally used for agricultural applications are AC Induction Motors and Conventional DC Motors. In recent years with exploration of new permanent magnet materials there is a sharp decline in their cost, which results in increased availability of BLDC motor. Hence Brushless DC Motors (BLDC) is also being used for domestic, commercial and agricultural applications. But, over the years there has been a steep hike in the price of rare-earth permanent magnets like NdFeB (Neodymium Iron Boron) and SmCo (Samarium Cobalt) which make the motor un-economical. This paper is also eliminating the manual solar panel alignment to produce the solar power for BLDC motor. This tracking system tracks the maximum intensity of the sun by monitoring the position of sun using light dependent resistors (LDR).*

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Design of Boost Converter for Solar based Application in Smart Cities

Gomathi P[1], Anand Karuppannan[2]
[1,2]NSN College of Engineering and Technology, India

Abstract: *This paper explains the boost converter along with coupled inductor technique to increase the high voltage gain. The circuit consists of two capacitor and one coupled inductor. By using coupled inductor, voltage ripple value and harmonics is reduced. Solar panel acts as input with a voltage of 12V and the output is given to the motor which is used for the pump application. By using this method this high voltage is achieved. The input voltage is 12V and then output voltage is 146V.This technique of high voltage gain we are going to represent with help of MATLAB\SIMULATION and hardware is implemented. The Main application of coupled inductor based solar pump is used in smart cities.*

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Comparative Analysis of Different Wheeling Charge Methodologies in Open Access Transmission System

Palanisamy T[1], Gomathi P[2]
[1,2]NSN College of Engineering and Technology, India

Abstract: *In the restructured power market, it is necessary to develop an appropriate pricing scheme that can provide the useful economic information to market participants, such as generation, transmission companies and customers. Proper pricing method is needed for transmission network to ensure reliability and secure operation of power system. This project gives an overview of different costs incurred in transmission transaction, types of transmission transactions and the transmission pricing methodologies. Accurately estimating and allocating the transmission cost in the transmission pricing scheme still remains challenging task. Embedded cost method is mainly focused on this paper. It mainly focused on determining the embedded transmission cost by various methods and compared the results for IEEE-14 bus and IEEE-30 bus and IEEE-57 bus systems.*

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Safety Risk Assessment in CNC Machining

Suganth V G[1], Manikandan S[2]
[1,2]NSN College of Engineering and Technology, India

Abstract: *The aim of risk assessment is highlighting the safety aspects in cnc milling process. milling machining is one of the hazardous process in manufacturing industry which have multiple potential hazard so that we have applied risk assessment method to find out risk related to it and also given counter measures to reduce or eliminate risk in order to make the working environment safe for workers and safe condition and practices in machinery lead to a no of accident and causes loss and injury to human lives, damages the property.*

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Study of Health Monitoring of Steel Reinforced Concrete Beam Using Transducers

Vivekanandhan S[1], Suresh Manickam[2]
[1,2]NSN College of Engineering and Technology, India

Abstract: *There is a phenomenal rise in construction activities in the field of civil engineering in the recent years. Major structures like buildings, bridges, dams are subjected to severe loading and their performance is likely to change with time. It is, therefore, necessary to check the performance of a structure through continuous monitoring. If performance deviates from the design parameters, appropriate maintenance is required. The life of a structure depends on initial strength and the post construction maintenance. It is for this reason that the necessity of structural health monitoring (SHM) is emphasized worldwide. There are several techniques to monitor the health of structures. These can be divided broadly into two types, global and local. The local and global techniques independently cannot monitor the health of a structure continuously in an autonomous manner. For example, the global technique, cannot determine incipient damage. The local techniques, being localized in nature, can identify damage only within a limited zone. Hence, a technique is required for structural health monitoring (SHM), which should carry out continuous monitoring of structure both locally and globally, should be sensitive and at the same time cost effective. The primary objective of this project work is to develop a new technique by Integrating the global and local techniques based on piezoceramic sensors. There are different types of sensors which can be used for SHM. In general, the performance of PZT sensor is better than other sensors and are also very cost effective. In this study, PZT patches have been used as sensors for both global and local level damages. In addition, the possibility of an embedded PZT sensor has been investigated. The PZT sensor is embedded in structure at the time of construction. It is successfully demonstrated that the embedded patch acts as sensors for both the global dynamic technique and the EMI technique. The conventional methods, which differentiate the damage as incipient, moderate and severe, are based on experience. A new algorithm has been developed to determine the severity of damage using experimental mode shapes. The basic advantage of the algorithm is that the severity of the damage can be computed in terms of the original stiffness of structure. It has also been shown that by suitable integration of the global dynamic and the EMI technique with artificial neural networks (ANN), the issues of localization and quantification can be addressed more appropriately. Hence, the integration of these techniques leads to much more effective SHM and this forms the main contribution of the project.*

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Study of the Design and Remote Control of A Pneumatic Excavator

Rameshkumar S[1], Manikandan S[2]
[1]Anna university Chennai- Regional center Coimbatore, India
[2]NSN College of Engineering and Technology, India

Abstract: *Robotics application is found very advantageous in earth removal, drainage cleaning etc. The problem identified is the application of drainage cleaning where the environment is hazardous. An automated excavator is found advantageous over human involvement, which is developed and analysed. A CAD/CAE/CAM &remote control integrated system for a pneumatic excavator mechanism was developed.*

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Performance and Emission Analysis of Two Biodiesel Blended With Various Diesel Ratio

Sivashankar M[1], Vinoth Kumar V[2]
[1,2]NSN College of Engineering and Technology, India

Abstract: *Nowadays, fossil fuel resources were decreased due to higher use of automobiles and for other purposes. So, Bio-diesel is the alternative fuel for the automobiles. (Which is extracted from vegetables (or) animal fats). The high oil price, environmental concern and supply instability put many researchers to go for alternative fuel i.e. biodiesel. Biodiesel is part of the solution which reduced many of the problems. The researchers regarding single biodiesel have been carried out already. The present work takes out an experiment of two biodiesels from chicken fat oil and neem seed oil. They are blended with diesel at various mixing ratios. The various effects of two biodiesel works in engine were checked in a single cylinder, direct injection of chicken fat oil and neem seed oil, water cooled diesel engine at various load conditions with constant speed of 1500rpm.The influences of blends on CO, CO2, HC, NOX, and smoke density were investigated by emission tests. The brake thermal efficiency was found higher than diesel. The emissions of smoke HC, CO, CO2, of the biodiesel blends at B20 ratio were less compare to pure diesel and other B30, B40 ratios.*

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Performance and Emission Characteristics of A 4 Stroke Diesel Engine with Mahua and Cotton Seed Biodiesel Blended with Diesel

Saravanakumar S[1], Sivashankar M[2]
[1]SBM College of Engineering and Technology, India
[2]NSN College of Engineering and Technology, India

Abstract: *Biodiesel are becoming popular as alternative eco-friendly fuel now days. The petroleum product requirement is going on increasing day by day in India with limited resources in the oil pool. Crisis of petroleum fuel and import of fossil fuel is giving a high impact on the economy and development. Besides the economy and development, fossil fuel also leads to a major problem like global warming and climatic change. The emission of harmful gasses like CO, NOx,(CO)_2, and smoke density causes acid rain, health hazard and also global warming. The high oil price, environmental concern and supply instability put many researchers to go for alternative fuel i.e. biodiesel. Biodiesel is part of the solution which reduced many of the problems. The objectives of this study are the production process, fuel properties, oil content, engines testing and performance analysis of biodiesel from mahua and cotton seedoil.*

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Optimization of Machining Parameters in Wire Cut EDM Using Taguchi Techniques

Vinoth Kumar V[1], Suganth V G[2]
[1,2]NSN College of Engineering and Technology, India

Abstract: *This paper deals optimized model to investigate the effects of pulse on time, pulse off time and wire feed rate in EDM performance on material removal rate. Wire electrical discharge machining process is a highly complex, time varying &stochastic process. The process output is affected by large no of input variables. Therefore a suitable selection of input variables for the wire electrical discharge machining (WEDM) process relies heavily on the operators technology &experience because of their numerous &diverse range. Rough cutting operation in wire EDM is treated as challenging one because improvement of more than one performance measures viz. Metal removal rate (MRR), surface finish &cutting Width (kerf) are sought to obtain precision work. Using Taguchi experimental design, significant machining parameters affecting the performance measures are identified as pulse on time, pulse off time and wire feed rate. WEDM process parameters can be adjusted so as to achieve better metal removal rate.*

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Experimental Investigation of Pungamia Pinnata Oil and Canola Oil Methyl Ester as Biodiesel on CI Engine

Livingstan J[1], Vinothkumar V[2]
[1]SBM College of Engineering and Technology, India
[2]NSN College of Engineering and Technology, India

Abstract: *Biodiesel are becoming popular as alternative eco-friendly fuel now days. The petroleum product requirement is going on increasing day by day in India with limited resources in the oil pool. Crisis of petroleum fuel and import of fossil fuel is giving a high impact on the economy and development. Besides the economy and development, fossil fuel also leads to a major problem like global warming and climatic change. The emission of harmful gasses like CO, NOx, CO2, and smoke density causes acid rain, health hazard and also global warming. The high oil price, environmental concern and supply instability put many researchers to go for alternative fuel i.e. biodiesel. Biodiesel is part of the solution which reduced many of the problems. The objectives of this study are performance and emission analysis of biodiesel from pongamia pinnata oil and canola oil. The effect of biodiesel blends on engine performance, and exhaust emission were studied under various loading conditions with constant engine speed 1500rpm.The experimental investigation was carried out on single cylinder water cooled diesel engine and the result brake thermal efficiency of blend was found higher than diesel. The experimental results concluded that up to 20% of methyl ester did not affect the performance parameter.*

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Simulation and Numerical Analysis of Energy and Power Loss Generation in Bus bar System

Prakash Murugesan[1], Prabhu M K[2]
[1,2]NSN College of Engineering and Technology, India

Abstract: *The aim of the project is to optimize energy and power losses in bus bar system and to analyse the thermal distribution of the bus bar through electromagnetic effect. The analyses have to be made at the different arrangements of the bus bar. This project is concerned with the panel mounting bus bars with three phase supply with Neutral. Thermal analysis includes the working temperature and as it rises during the abnormal conditions such as loose connections along the metallic contacts, short circuit period and running the machine with under load conditions. The Power Quality Analysis gives the complete information on the Reactive power, Frequency, Power Factor. Apart from this measured data, some mathematical analyses have to be made on the impacts of electromagnetic effect such as Eddy current loss and Skin effect in and around the bus bar structure. So these impacts on the thermal and electrical part which is to be experimentally proven by choosing the application of having high rating of capacity bus bar panel boards. The application selected should be high voltage 2000A, so that it is easy to study and measure the parameters under thermal and electrical. Readings are taken at various sections of the bus bar such as distribution and feeder units. The measured data are compared with the distribution and the feeder sections. This gives a better result of heat dissipation and the Power loss of the system.*

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Performance of Dissimilar Welds with the Effect of Activated TIG Flux between Mild Steel and Stainless Steel

Udhayakummar A S[1], Karthick K[2]
[1]NSN College of Engineering and Technology, India
[2]KGISL Institute of Technology, India

Abstract: *The purpose of the present work is to investigate the effects of specific fluxes used in the tungsten inert gas (TIG) process on mechanical properties and microstructures when welding 6 mm thick dissimilar metal plates between JIS G3131mild steel and SUS 316L stainless steel .The results shows that the residual slag will be formed when TIG welds produced with oxide flux. The joint penetration and weld depth-to-width ratio can be increased by TIG welding with SiO2 powder. Furthermore, the defects susceptibility of weld can be reduced.*

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Characterization of Metal Matrix Composites Reinforced with Fly Ash

Raguraman B[1], Vigneshwaran M[2], Jeganathan M[3], Ramachandran K[4]
[1,2,3,4]NSN College of Engineering and Technology, India

Abstract: *Magnesium matrix composites found various applications in automobile and aerospace industry due to their low density, good mechanical and physical properties. The improvement of this property were attained by addition of reinforcing elements into the metal matrix. In this work the magnesium matrix composites reinforced with various weight percentage of silicon carbide by powder metallurgy process. The Fly ash is used as a reinforcement material in this matrix composite which will improve the homogenous distribution within the matrix. The composite is developed by adding silicon carbide and Fly ash in a correct mass ratio and the composite is prepared by Powder metallurgy process. Mechanical test such as hardness test, microstructure test are conducted. This hybrid metal matrix possesses a good homogenous distribution which improves the material suitable for various applications in automobile and aerospace industries.*

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Experimental Investigation on MIG Welded Mild Steel

Satheeshkumar Ponnusamy[1], Prabhu Natesan[2], Ramachandran K[3]
[1,2,3]NSN College of Engineering and Technology, India

Abstract: *Gas Metal Arc Welding (GMAW) process is leading in the development in arc welding process which is higher productivity and good in quality. In this study, the effects of different parameters on mechanical properties in mild steel that having the 6mm thickness of base metal by using gas metal arc welding will be investigated. The variables that choose in this study are arc voltage, welding current. The arc voltage and welding current were chosen as 22, 23, 24 and 25 V and 110, 120, 130 and 140 A respectively. Their effects are investigated in terms of mechanical properties using tensile, Brinell hardness, and Charpy impact test*

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Analysis and Experimental Investigation of Mechanical Vibration in Switched Reluctance Motor

Nandhini K[1], Gomathi P[2]
[1,2]NSN College of Engineering and Technology, India

Abstract: *Electric motor or the hybrid electric vehicle of switched reluctance motor has the wide torque and speed range. Due to the flux strengthening and magnetic saturation, double salient structure causes the high range of torque ripple, mechanical vibration and acoustic noise. This severe can be overcome by using different control techniques like conventional PI control which are efficiency and cost effective. The control of torque ripple by using both controller techniques are simulated by using Matlab/Simulink and the outcome of mechanical vibration and acoustic noise from both the controller gets analyzed in Graphical programming language, LabVIEW tool. This graphical language gives the efficient and accurate results in terms of mechanical vibration and acoustic noise.*

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