International Journal of Engineering and Advanced Technology

ISSN : 2249 - 8958
Website: www.ijeat.org

Volume-2 Issue-5, June 2013

Published by:
Blue Eyes Intelligence Engineering and Sciences Publication Pvt. Ltd.

Technical Advisory Board

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Volume-2 Issue-5, June 2013, ISSN: 2249-8958 (Online)
Published By: Blue Eyes Intelligence Engineering & Sciences Publication Pvt. Ltd.

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1.	**Authors:**	**Thanneru Raghu Krishna Prasad, Goutham Solasa, Nariganani SD Satyadeep, G.Suresh Babu**	
	Paper Title:	**Static Analysis and Optimisation of Chassis and Suspension of an All-Terrain Vehicle**	
	Abstract: The project was aimed to design the frame & suspension of the Society of Automotive Engineers (SAE) Baja car which is a single-seated all-terrain vehicle and is used for off road usage and endurance on a rough terrain. In many aspects it is similar to an All-Terrain Vehicle (ATV) except that it is much smaller in size and has safer rollover capabilities. The modeling of the frame and suspension is done by using pro-e software. This design is checked by Finite Element Analysis after estimating the load and the weight of the frame optimized. **Keywords:** (SAE), (ATV) **References:** 1. SAE, 2011, "Mini Baja 2011 Rules", (http://sae.org/students/minibaja.htm). 2. http://www.matweb.com 3. Fundamentals of vehicle-dynamics, Thomas.D.Gillespie 4. Bill and Doug Milliken; *Race Car Vehicle Dynamics* 5. (RCVD) (http://www.millikenresearch.com/rcvd.html) 6. Butterworth-Heinemann Ltd; 2Rev Ed edition (May 23, 2001); The Automotive Chassis 7. Reza N. Jazar; March 2008; Vehicle Dynamics, Theory and application	**1-6**
2.	**Authors:**	**B.K.Kolhapure**	
	Paper Title:	**Study on Shear Behaviour of High Strength Concrete (HSC) Slender Beams**	
	Abstract: In this paper an experimental investigation is carried out on Twelve HSC beams with constant width (125 mm) and effective depth (100 mm) by varying (i) shear span to depth ratio, (ii) the longitudinal reinforcement ratio and (iii) the minimum web reinforcement ratio were casted and tested to understand the shear behavior of the beams with minimum web reinforcement as per IS CODE and ACI CODE and maximum web reinforcement as per IS CODE. The load-deflection behavior and the failure pattern of the beams, ultimate shear strength and reserve shear strength are studied with varying a/d ratio and longitudinal reinforcement. The results obtained are compared with the different codal equations. Based on these observations, it can be concluded that, there are many parameters influencing the shear behavior of RC beams such as shear span to depth ratio (a/d ratio>2), concrete grade, depth of the beam and the percentage of the longitudinal reinforcement The results obtained were compared with the different codal equations. The British code model is proposed for the present work. **Keywords:** High strength concrete, shear span to depth ratio. Reserve strength, failure pattern, ultimate shear capacity, codal provisions. **References:** 1. Raghu S.Pendyala and Priyan Mendis, "Experiment Studies on Shear Strength of High Strength Concrete Beams," ACI Structural Journal/july-august 2000, pp 564 – 571. 2. Mark k. Johnson and Julio A. Ramirez, "Minimum Shear Reinforcement in Beams with Higher Strength Concrete," ACI Structural Journal/July-Aug 1989 pp 376-382. 3. Theodor Krauthammer, "Minimum Shear Reinforcement Based on Interface Shear Transfer," ACI Structural Journal/Jan-Feb 1992 pp 99-105 4. Michael P. Collins and Daniel Kuchma, "How Safe Are Our Large, Lightly Reinforced Concrete Beams, Slabs, and Footings". ACI Structural Journal/July-August 1999 pp 482-490 5. Young-soo Yoon, William D. Cook and Denis Nitchell, "Minimum Shear Reinforcement in Normal, Medium, and High-Strength Concrete Beams," ACI Structural Journal/Sept-Oct 1996 pp 576-584. 6. Guney Ozcebe, Ugur Ersoy, and Tugrul Tankut et al, "Evaluation of Minimum Shear Reinforcement Requirements for Higher Strength Concrete," ACI Structural Journal/May-June 1999 pp 361-368. 7. Robert J. Frosch, "Behaviour of Large-Scale Reinforced Concrete Beams with Minimum Shear Reinforcement," ACI Structural Journal/Nov-Dec 2000 pp 814-820. 8. Dino Angelakos, Evan C. Bentz and Michael P. Collins, "Effect of Concrete Strength and Minimum Stirrups on Shear Strength of Large Members," ACI Structural Journal/May-June 2001 pp 290-300 9. Prodromos D. Zararis, " Shear Strength and Minimum Shear Reinforcement of Reinforced Concrete Slender Beams," ACI Structural Journal/March-April 2003 pp 203-214 10. Khaldoun N.Rahal and Khaled s. Al-Shaleh, "Minimum Transverse Reinforcement in 65 MPa Concrete Beams," ACI Structural Journal/Nov-Dec 2004 pp 872-878 11. A.Cladera and A.R.Mari, "Experimental study on high- strength concrete beams failing in shear," Engineering Structures/May-2005 pp 1519-1527. 12. Patrick Paultre and Denis Mitchell, "Code Provisions for High-Strength Concrete an International Perspective," Concrete International MAY 2003, pp 76-90 13. Jin-Keun Kim andYyon-Dong Park, "Prediction of Shear Strength of Reinforced Concrete Beams without Web Reinforcement", ACI Structural Journal, V 93, No.3, May-Jun 1996, pp.213-222. 14. Michael .P.Collins and Daniel Kuchama, "How safe are our large, lightly reinforced concrete beams, slabs and footings?," ACI Structural Journal, V 96, No 4, Jul-Aug 1999, pp 482-490. 15. S.Sarkar, O.Adwan, B.Bose, "Shear stress distribution and failure mechanics of high-strength reinforced concrete beams," Materials and Structures, V32, No.216, March 1999, pp 112-116. 16. Satish.B.DesaI, "Influence of constituents of concrete on its tensile strength and shear strength," ACI Structural Journal, January-February 2004, Pg 29-38. 17. M. Khuntia and B. Stojadinovic (2001). "Shear Strength of Reinforced Concrete Beams without Transverse Reinforcement," ACI Structural Journal, V 98, No.5, Sep-Oct 2001, pp.648-656. 18. A.Koray Tureyen and Robert J. Frosch, "Concrete shear strength: Another Perspective," ACI Structural Journal, September-October 2003, pp 609-615.	**7-11**

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3.

Authors: **Suvra Sarkar, Sandeepa Sarkar, Bishnu Charan Sarkar**

Paper Title: **Nonlinear Dynamics of a BJT Based Colpitts Oscillator with Tunable Bias Current**

Abstract: The effect of bias current variation in the dynamics of a conventional BJT based Colpitts Oscillator (CO) has been thoroughly examined in this paper. After formulating a suitable ac equivalent model of the CO taking care of the dc bias current, the dynamics of the system has been numerically studied. It is observed that in a CO circuit with given design parameter, a periodic oscillation starts for a critical bias current and with the variation of the bias current to a higher value chaotic oscillations are observed through a period doubling root. A prototype hardware experiment in the low RF band CO supports the observations obtained by the numerical simulations. The change in chaoticity with the variation of the operating bias current is observed by finding Maximum Lyapunov exponent (MLE) from numerically and experimentally obtained time series of the CO output data. The technique of bias current variation could be applicable in any frequency range including Microwave band, in principle and it has important application potential in chaos based communication systems for encoding information bits into chaotic signals.

Keywords: Bias current tuning, Chaotic Colpitts oscillator, Maximum Lyapunov exponent Nonlinear trans-conductance model of BJT, period doubling route to chaos.

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4.

Authors: **M. Mohan Babu, G.K. Viswanadh**

Paper Title: **Hydrochemical Studies along Coastal Areas of Nellore District, Andhra Pradesh**

Abstract: The groundwater quality in coastal parts of Nellore district, Andhra Pradesh is discussed with emphasis on their utility to drinking and agricultural purposes. Soils in the study area are sandy and clayey soils. The quality of groundwater is in general potable with pH showing a trend towards alkalinity. The hydro geochemical facies found in the area is Na-Cl.

Keywords: Agricultural Purpose, Coastal Aquifers, Drinking, Groundwater Quality, Nellore district

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5.

Authors: **Ghazala Y.Hermiz, Mahdi H. Suhail,Suzan M.Shakouli**

Paper Title: **Comparison of High Pressure DC-sputtering and Pulsed Laser Deposition of Superconducting $Bi_{1.6}Pb_{0.4}Sr_2Ca_2Cu_3O_{10+\delta}$**

Abstract: Superconducting $Bi_{1.6}Pb_{0.4}Sr_2Ca_2Cu_3O_{10+\delta}$ thin films were deposited on Si(111) substrates using two different techniques: dc-sputtering at high oxygen pressure and pulsed laser deposition. The structure and electrical properties of the obtained films were compared. The transition temperature T_c for bulk and films deposited by PLD is 102 K and 97 K respectively, while T_c of films prepared by dc sputtering is 90 K. The structural analysis was carried out by XRD on pellet sample and its annealed and as deposited films .The surface morphology of the films have been studied by using AFM.

Keywords: DC-sputtering; PLD; Thin film superconductors

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6.

Authors: **Ginu Thomas, Rahul Vivek Purohit**

Paper Title: **Hand Gesture Recognition via Covariance Method**

Abstract: Gesture is a powerful form of communication among humans. This paper presents simple as well as effective method of realizing hand gesture recognition using Covariance Method. First an image database is created which constitutes various static hand gesture images. These images are a subset of American Sign Language (ASL). Preprocessing of the image is done so as to reduce the amount of noise present in the image. Eigen values of the Eigen vectors are calculated. A pattern recognition system is used to transform an image into feature vector i.e. Eigen image, which will then be compared with the trained set of gestures. The method used was successful to retrieve the correct match.

Keywords: Covariance, Pattern Recognition

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7.

Authors: **Sivakami.P, Karthigaivel.R, Selvakumaran.S**

Paper Title: **Voltage Control of Variable Speed Induction Generator Using PWM Converter**

Abstract: The paper describes a simple control structure for a stand-alone Induction Generator (IG) used to operate under variable speeds. Fuzzy Logic Control (FLC) has been developed to automatically vary the duty-cycle of the PWM converter such that to maintain the DC-link voltage constant. The required reactive power for the variable-speed IG is supplied by means of the PWM converter and a capacitor bank to build up the voltage of the IG without the need for a battery and to reduce the rating of the PWM converter with the need for only three sensors. This proposed scheme has been used efficiently for variable speed wind or hydro energy conversion systems. The measurements of the IG system at various speeds and loads are given and show that this proposed system is capable of good DC voltages regulation. The proposed system has been simulated using MATLAB-SIMULINK software and verified the theoretical analysis.

Keywords: DC power applications, Induction Generator (IG), Pulse Width-Modulation (PWM) converter, voltage regulation.

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8.

Authors: **Arti R.Bhore, N.D.Kale**

Paper Title: **Reading Users' Minds from Their Eyes: A Method for Implicit Image Annotation**

Abstract: This paper explores the possible solutions for image annotation and retrieval by implicitly monitoring user attention via eye-tracking. Features are extracted from the gaze trajectory of users examining sets of images to provide implicit information on the target template that guides visual attention. Here Gaze Inference System (GIS) is a fuzzy logic based framework that analyzes the gaze-movement features to assign a user interest level (UIL) from 0 to 1 to every image that appeared on the screen. Because some properties of the gaze features are unique for every user, our user adaptive framework builds a new processing system for every new user to achieve higher accuracy. The generated UILs can be used for image annotation purposes; however, the output of this system is not limited as it can be used also for retrieval or other scenarios. The developed framework produces promising and reliable UILs where approximately 53% of target images in the users' minds can be identified by the machine with an error of less than 20% and the top 10% of them with no error. As show in this paper that the existing information in gaze patterns can be employed to improve the machine's judgment of image content by assessment of human interest and attention to the objects inside virtual environments.

Keywords: Eye tracking framework, image annotation, image retrieval, Gaze Interface System.

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9.

Authors: **Bilal Abdullah Nasir**

Paper Title: **Design of Micro - Hydro - Electric Power Station**

Abstract: Micro-hydro-electric power is both an efficient and reliable formof clean source of renewable energy. It can be an excellent method of harnessing renewable energy from small rivers and streams. The micro-hydro project designed to be a run -of-river type, because it requires very little or no reservoir in order to power the turbine. The water will run straight through the turbine and back into the river or stream to use it for the other purposes. This has a minimal environmental impact on the local ecosystem.
The design procedure of micro-hydro power plant was implemented by a Matlab Simulink computer program to calculate all the design parameters. The choice of the turbine type depending mainly on the site head and flow rate. The turbine power and speed were directly proportional with the site head, but there were specific points for maximum turbine power and speed with the variation of the site water flow rate. The head losses in the penstock could range from 5 to 10 percent of the gross head, depending on the length of the penstock, quantity of water flow rate and its velocity. The turbine efficiency could range from 80 to 95 percent depending on the turbine type, and the generator efficiency about 90 percent.
The design study showed that construction of micro-hydro-electric project was feasible in the project site and there were no major problems apparent at the design and implementation stages of the micro-hydro-electric power plant.

Keywords: micro-hydro-electric power plant, design and implementation, hydro-turbines.

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Authors: **Ojasvi Bhatia, Yogesh Kumar Gupta**

Paper Title: **Mitigating Phase Noise Effects in Orthogonal Frequency Division Multiplexing System Using Phase Locked Loop**

Abstract: Orthogonal Frequency Division Multiplexing System are better suited to the today’s generation 3G networks and upcoming 4G networks in terms of bandwidth efficiency due to overlapping of frequency bands, high speed data transfer due to parallel data transfer, maintaining high quality of wireless link even under multipath conditions due to low symbol rate it minimizes ISI effects. The application of channel codes like convolution codes further reduces the Bit Error Rate and improves the link reliability. Although OFDM systems shows superior performance over single carrier and FDM system but there is one disadvantage that is the over sensitivity to Phase noise of the local oscillator which hinders the orthogonality of the sub carriers and increases inter carrier interference. OFDM system performance is degraded due to phase noise. Accordingly going deep into the various parameters of the OFDM system it was observed that Phase Locked Loop (PLL) could better control the phase noise problem in comparison to free running oscillator. It is deployed at the downlink side of incoming signal received from Antenna generating its own local frequency slightly higher than the incoming frequency to generate IF signal (after mixing the incoming and the local frequency) for further processing. Accordingly to examine closely the other aspects of PLL in relation to Free Running Local Oscillator various parameters of PLL in relation to OFDM system were studied in detail.

Keywords: Bit Error Rate; Signal to Noise Ratio; Phase Locked Loop; Power spectral densitys.

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Authors: **Srikanth Mandarapu, Sreedhar Lolla, Madhu Chandra Popuri**

Paper Title: **Dynamic Simulation of Robust Sensorless Speed Measurement in IM Using MRAC against Variations in Stator Resistance and Rotor-Time Constant**

Abstract: This paper proposes a Model Reference Adaptive Control (MRAC) which makes use of both back EMF and Reactive Power methods for sensorless rotor speed measurement against variations in rotor time constant in addition to the variations in stator resistance. The adjustable model makes use of these two methodologies eliminates the need to calculate rotor flux, thus avoiding the requirement of synchronously rotating reference angle and the stable speed can also be estimated even at low speeds. The effectiveness of the proposed model is proved with extensive computer simulation.

Keywords: back emf method, reactive power method, Rotor Speed, Sensorless Control, Stator Resistance.

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Authors: **Aruna.D.Mane, Sirkazi Mohd Arif, Shaikh Sehzad, Shaikh Sohail**

Paper Title: **Solar Panel Tracking System for GSM Based Agriculture System**

Abstract: Solar modules are devices that cleanly convert sunlight into electricity and offer a practical solution to the problem of power generation in remote areas. This project involves the development of an Automatic Solar radiation tracker that could be further used for agriculture purpose, making use of a GSM Module as the control system. Fossil fuels are a relatively short-term energy source consequently; the uses of alternative sources such as solar energy are becoming more wide spread.

To make solar energy more viable, the efficiency of solar array systems must be maximized. A feasible approach to maximizing the efficiency of solar array systems is sun tracking. Proposed in this paper is a system that controls the movement of a solar array so that it is constantly aligned towards the direction of the sun. The solar tracker designed and constructed in this paper offers a reliable and affordable method of aligning a solar module with the sun in order to maximize its energy output.

Automatic Sun Tracking System is a hybrid hardware/software prototype, which automatically provides best alignment of solar panel with the sun, to get maximum output (electricity). The system will be implemented for irrigation purpose wherein the irrigation system will be controlled using a GSM technology

Keywords: GSM, Solar Panel, Microcontroller.

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	Authors:	**Vaibhav Sharma, Ankit Verma**
	Paper Title:	**Fault Diagnosis of Analog Circuits Using dc Approach**

Abstract: Fault diagnosis of circuit is a key problem of theory of circuit networks and especially with the development of electronic technique at high speed, the increasing complexity of electronic equipment and altitudinal integration of electronic circuit, it is of importance in particular. Testing and diagnosis of electronic devices are fundamental topics in the development and maintenance of safe and reliable complex systems. In both cases, the attention is focused on the detection of faults affecting a subsystem whose appearance generally impairs the global system safety and performance. In a complete fault diagnosis procedure, fault detection and isolation must be carried out together; the effectiveness of the procedure depends on fault detection and isolation performance as well as the complexity of the test phase. While there are established techniques to obtain an automatic diagnosis for a digital circuit, the development of an effective automated diagnosis tool for analog or mixed circuits is still an open research field. For more than two decades, the subject of fault location in analog circuits has been of interest to researchers in circuits and systems. In recent years this interest has intensified and a number of promising results has emerged.

13.

Keywords: In a complete fault diagnosis procedure, fault detection and isolation must be carried out together;

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	Authors:	**Bhavana Sharma, Shaila Chugh, Vishmay Jain**
	Paper Title:	**Investigation of Adaptive Multipath Routing For Load Balancing In MANET**

Abstract: In mobile ad hoc network (MANET), congestion is one of the most important limitations that affect the performance of the whole network. Multi-path routing protocol can balance and share the load better than the single path routing protocol in ad hoc networks, thereby reducing the congestion possibility by dividing the traffic in alternative paths. The performance of the network can be improved by using a load balancing mechanism. Such a mechanism transfers load from overloaded nodes to under loaded nodes. The objective of multipath routing is to improve the reliability and throughput and favors load balancing. Multipath routing allows the establishment of multiple paths between a pair of source and destination node. It is typically proposed in order to increase the reliability of data transmission or to provide load balancing and has received more and more attentions. In this paper, some of the congestion removing and load balancing routing schemes have been surveyed. The relative strengths and weaknesses of the protocols have also been studied which allow us to identify the areas for future research.

14.

Keywords: MANET, multipath routing, load balance and sharing.

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Authors:	**Shweta Malhotra, Chander Kant Verma**	
Paper Title:	**A Hybrid Approach for Securing Biometric Template**	

Abstract: Biometrics authentication provides highest level of security. It allows the user to get authenticated using his or her own physical or behavioral characteristics. Unimodal biometrics have several problems such as noisy data, spoof attacks etc. which cause data insecure. To overcome these problems multimodal biometrics is used. Multimodal biometrics allows fusing two or more characteristics into single identification. It leads to more secure and accurate data. In this paper, we have combined two characteristics –one physical and one behavioral and further a key is added to the template to make it more secure. The template is finally stored in database.

Keywords: Biometric template protection, multimodal biometrics, biometric cryptosystem, hybrid approach for biometric template protection.

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Authors:	**Y.Ch Sekhar, P.S.Srinivas Babu**
Paper Title:	**Hardware Modeling of VTD- Cache for fine Grain Voltage Scaling**

Abstract: This proposed title of this work allows us to design Variation Trained Drowsy Cache for significant saving of power consumption. When addressing reliability issues. The novel and modular architecture of the VTD – Cache and its associated controller makes it easy to implemented in memory compilers with a small area and power overhead. With proper selection of scaled voltage levels and hort training period the proposed architecture allows micro tuning of the cache and also this architecture variation of supply voltage settings. We model this scheme on FPGA core.

Keywords: Cache, drowsy cache, static random access memory (SRAM), AXI protocol.

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17.

Authors:	**H. B. Kekre, Dhirendra Mishra, Prasad Rangnekar, Raja Ketkar**
Paper Title:	**Detection of Remnant Material and Its Quantification**

Abstract: Loading-unloading of goods is an essential task that is undertaken at every industrial site. Mines

witness a large scale transportation activity. As the volume of such goods is large in size, the mode of transport used for delivery is usually dumpers. Huge cranes load the dumpers at one location with some material and then the dumper moves to the desired destination for unloading. After the unloading process, the dumper may still hold some residual matter in its dumping bed which may be misused stealthily; theft of which may amount to huge loss for the concerned industry. This paper mainly discusses attempts in the direction to devise an automatic system that will detect and quantify the remnant material which is left behind in the dump-trucks after the unloading process is formally completed. In this piece of research we have applied grey level co-occurrence matrix (GLCM) and Material specific techniques to detect the carry back for materials like aluminium, coal, copper, iron ore, manganese and lime stone. Results of both these approaches have been compared.

Keywords: Carry-back detection, GLCM, Material specific techniques, monochrome, r-plane, Intensity adjustment.

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18.	**Authors:**	**Mounir M. Kamal, Mohamed A. Safan, Zeinab A. Etman and Mahmoud A. Abd-elbaki**
	Paper Title:	**Effect of Polypropylene Fibers on Development of Fresh and Hardened Properties of Recycled Self-compacting Concrete**

Abstract: The current research intends to study the possibility of producing fiber recycled self-compacting concrete (FRSCC) using demolitions as a coarse aggregate (crushed red brick and crushed ceramic). Polypropylene fibers were used in recycled self-compacting concrete (RSCC) to improve fresh and hardened properties of this type of concrete. Thirty one concrete mixes were prepared to achieve the aim proposed in this paper. Polypropylene fiber volume fraction varied from 0 to 1.5% of the volume of concrete with aspect ratio 12.5. The fresh properties of FRSCC were evaluated using slump flow, J-ring and V-funnel tests. Compressive strength, tensile strength, flexural strength tests were performed in order to investigate mechanical properties. Density was performed to investigate the physical properties The results cleared that; the optimum volume fraction of polypropylene fibers was 0.19% and 0.75% for the mixes contained crushed red break and ceramic as a coarse aggregate, respectively. At optimum volume fraction of polypropylene fibers; the mixes with 25, 50, 75 and 100% of crushed ceramic yields to improve in the compressive strength by 18.4, 26.3, 21.2 and 14.8%, respectively compared to the mixes with crushed red brick as a recycled aggregate was observed.

Keywords: self-compacted concrete, red brick, ceramic, recycled materials, polypropylene fibers.

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19.

Authors: **Annu, Chander Kant**

Paper Title: **A Novel Approach for Facial Expression Recognition Using Euclidean Distances**

Abstract: There has been a growing interest in automatic face and facial expression recognition from facial images due to a variety of potential applications in law enforcement, security control, and human computer interaction. However, despite of all the advances in automatic facial expression recognition, it still remains a challenging problem. This paper describes an idea of recognizing the human face even in the presence of strong facial expressions using the Eigen face method. The features extracted from the face image sequences can be efficiently used for face and facial expression recognition. Firstly, we compute the Eigen value and Eigen vectors of the input image and then finally the input facial image was recognized when similarity was obtained by calculating the minimum Euclidean distance between the input image and the different expressions.

Keywords: Eigen face, Eigen value, Euclidean distance, facial expression recognition, facial features, face recognition.

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20.

Authors: **S.C.Shekokar, M. B. Mali**

Paper Title: **Speech Enhancement Using DCT**

Abstract: The speech enhancement problem comprises of various problems characterized by the type of noise source, the nature of interaction between speech and noise, the number of sensor signals (microphone outputs) available for enhancement and the nature of the speech application. Noise reduction remains a demanding problem due to wide variety of background noise types (car noise, babble noise, cockpit noise, train noise, subway noise,

etc.) and the difficulty in estimating their statistics. The connection of noise and clean signal is usually classified as additive/multiplicative/convolution. The additive model very often dominates in real-world applications.

Keywords: Speech enhancement, Speech processing

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21.

Authors:	**Ankit Gupta, Mridul Gupta, Neelakshi Bajpai, Pooja Gupta, Prashant Singh**
Paper Title:	**Efficient Design and Implementation of 4-Degree of Freedom Robotic Arm**

Abstract: A robotic arm is a mechanical arm which is designed to perform a function similarly as a human arm does. It is usually programmable and arm may be a sum total of the mechanism or can be part of a complex robot. To design a robot, various links are being connected by joints allowing either a translational (linear) motion or a rotational motion in various planes. In many cases sensors are used in the arm that usually indicates the controller about the hardness by which the gripping is done by arm or directs the arm in directions in which it should move to perform the task or it tells the system about presence of object in front of it.

Various aspects that are kept in mind while designing a robotic arm are torque calculation for each motor used, concept of inverse kinematics, interfacing to remote controller, ways for noise reduction in ADC (analog-to-digital converter).We have designed this robotic arm using servos, ATmega32 microcontroller with interfacing analog joysticks controller. We have made some improvements in design by reducing the noises that were generated due to mechanical construction of the joystick which continuously varies and gives some noises. And also we have used the fact the mechanical system has larger response time as compared to associated electronics. To overcome this we went for some software filters and algorithms following the ADC. Before this, we have introduced inverse kinematics with its difference from forward kinematics and various calculations related to it.

Keywords: Averaging Filter, DOF (Degree of Freedom), End effectors, Inverse kinematics, IIR Filter.

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22.

Authors:	**Samadhan P. Deshmukh, Vivek K. Sunnapwar**
Paper Title:	**Development and Validation of Performance Measures for Green Supplier Selection in Indian Industries**

Abstract: An environmentally conscious supply chain, also called a green supply chain, is a new concept appearing in recent literature. The purpose of this study is to identify the critical green manufacturing factors considered during supplier selection in the Indian manufacturing sector. The approach of the research includes a literature review, in-depth interviews and questionnaire surveys. The major activities of the green supply chain; namely green design, green logistic design, green manufacturing, green costs, quality, environment performance assessment, customer co-operation are covered throughout the research. Factor analysis is done using Statistical Package for the Social Sciences (SPSS) software to help managers understand the important environmental dimensions. Factor analysis is used to evaluate the relative importance of various environmental factors. The data are analysed using "mean score".

Keywords: Green Manufacturing, green supplier selection, environmental performance measures, factor analysis

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23.

Authors: **Alan Shaji Idicula, Kalpana Balani, Preetesh Shetty, Sayali Thalve, T. Rajani Mangala**

Paper Title: **Scale Identification of an Audio Input**

Abstract: Generally a music piece plays on one single scale. Each scale is uniquely characterized by a set of specific notes. In this paper, a methodology is presented for the recognition of musical scales that are associated with any piece of music. The procedure of recognition is essentially based on the comparison between the combinations of notes occurring in any music piece, with a predefined set of notes denoting a scale. To determine scale from a musical recording, frequency of the note is the characteristic which is used to identify a note and differentiate it from other notes. The proposed methodology led to the development of a system which can be exploited by a beginner learning music. The system performed successful recognition for the 92% of the tested recordings. It should be noted that the proposed system can operate in real time.

Keywords: audio input, frequency, matrix, music, note, scale

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24.

Authors: **As'ad Munawir, Murni Dewi, Yulvi Zaika, Agoes Soehardjono MD**

Paper Title: **Bearing Capacity on Slope Modeling with Composite Bamboo Pile Reinforcement**

Abstract: the footing that placed on slope surface will decrease bearing capacity of soil. The function of using composite bamboo pile is to increase bearing capacity of footing on slope and that is one of the innovative slope reinforcement methods which necessary for last few years. Slope modeling with composite bamboo reinforcement was using an experiment box with 1,50 m as length; 1,0 m as width and 1,0 m as height. It used sand soil with fine gradation and composite bamboo pile with various pile length and pile location. The load was modeled as a strip footing with continuous increasing load by load cell until the limit load has been reach. The problem occurred in laboratory has been analyzed with Finite Element Method. It changed 3D slope modeling to be 2D modeling. Composite bamboo pile has been chosen as a new utilization innovation of bamboo as reinforced pile and that's a positive value to optimize bamboo local material as steel reinforced replacement material. The result of experiment using composite bamboo as pile reinforcement on slope has increased slope bearing capacity. It shown with significant increasing of bearing capacity and maximum limit load can be reached on slope.

Keywords: bearing capacity improvement, bearing capacity on slope, composite bamboo pile, finite element method.

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Authors: **Vikas Kumar**

Paper Title: **Temperature- Aware Virtual Machine Scheduling in Green Clouds**

Abstract: This paper present the temperature- aware virtual machine scheduling in green clouds which is design to maintain the temperature of virtualized cloud system below critical temperature threshold by scheduling VMs according to temperature of node and insures reliable quality of service. High temperature gradients degrade reliability and performance therefore it requires vigorous cooling in order to keep the equipment and the software stable. Moreover, high energy consumption not only increases operational cost, which reduces the profit margin of Cloud providers, but also leads to high carbon emissions which is not friendly for environment. Thus apart from saving energy and money by avoiding huge investment on cooling, it also reduces carbon footprints.

Keywords: cloud computing, virtual machine

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26.

Authors: **Sahana S Bhandari**

Paper Title: **Embedded Based Automated Student Attendance Governing System**

Abstract: In all aspects of our life, we encounter event recording applications very often. Recording of any entity be it sound, pictures, events etc. is very useful as it enables us to manipulate data to our requirements. One can exploit the full potential of the recorded information for specific user defined purposes. Keeping in mind the significance of event recorders in today's world, we arrived at a common decision of making embedded based instrument.

The major problem faced by organizations is time consumption in taking attendance. This project totally eliminates the paper work in maintaining the attendance of each student in schools, colleges or universities. This instrument is easily scalable up to 150 students in 8 different subjects. Our goal is to have electronic files containing details about each student and their attendance status. This paper will try to organize the current attendance record system that will be much quicker and save time of instructors.

Keywords: Baud rate, Counters, Integrated Chip, Interrupts, Microcontroller, Quartz crystal.

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27.

Authors: **Mangala K. Pai, Jayalakshmi D.S.**

Paper Title: **Survey on Privacy and Data Security Issues in Cloud Computing**

Abstract: Cloud computing is a better way to run the business. Instead of running the apps by yourself, they are run on a shared data center. Cloud computing provides customers the illusion of infinite computing resources which are available from anywhere, anytime, on demand. Apart from these cloud computing is subject to privacy issues and security concerns. In this paper, we see the various types of issues in cloud computing and how to overcome that.

Keywords: Cloud, threats, SaaS, Paas, IaaS, DoS, XSS, BGP, SQL injection

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28.

Authors: **Vishwanath V.H., S. J. Sanjay and V. B. Math**

Paper Title: **Thermal Analysis of A6061-Boron/Silicon Carbide Composite for In-plane Transverse Loading**

Abstract: A structural composite is a material system consisting of two or more phases on a macroscopic scale, whose mechanical performance and properties are designed to be superior to those of constituent materials acting independently. FRP composites are slowly emerging from the realm of advanced materials and are replacing conventional materials in a variety of applications. However, the mechanics of fiber-reinforced composites is complex owing to their anisotropic and heterogeneous characteristics. In this paper, the micromechanical behavior of the square unit cell of a fiber reinforced composite lamina consisting of boron and Silicon Carbide fibers embedded in Alumina matrix, has been studied. A three-dimensional finite element model with governing boundary conditions has been developed from the unit cells of square pattern of the composite to predict the Thermal Gradient and Thermal Flux of A6061-Boron / Silicon Carbide fiber reinforced lamina for various volume Fraction . A finite element model incorporating the necessary boundary conditions is developed and is solved using commercially available FEA package to evaluate the Thermal properties. The variations of the Temperature at the fiber- matrix interface with respect to the Thermal Gradient & Thermal Flux are studied. This may result in the separation of fiber and matrix leading to deboning. This analysis is useful to realize the advantages of A6061-Boron / Silicon Carbide composites in structural applications, and to identify the locations with reasons where the Temperature is critical to damage the interface. The present analysis is useful to identify the composite effect in selecting the materials for reasonable properties.

Keywords: Finite element method, FRP, Micro-mechanics, Model, Temperature.

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Authors: **N.Muthuvairavan Pillai, J.George Chellin Chandran**

Paper Title: **EESRBM: Energy Efficient Stateless Receiver Based Multicast Protocol for Ad Hoc Networks**

Abstract: Multicast routing is used to send the information or message to a group of destination nodes simultaneously in a single transmission from the source. Multicast routing protocols typically rely on the priori creation of a multicast tree (or mesh), which requires the individual nodes to maintain state information. This multicast state maintenance adds a large amount of communication, processing and memory overhead for no benefit to the application. Hence a stateless receiver-based multicast (RBMuticast) protocol was developed that simply uses a list of the multicast member's addresses, embedded in packet headers to enable receivers to decide the best way to forward the multicast traffic. Nodes in Mobile Ad-hoc Networks (MANETs) are battery powered and hence have limited life time. This RBMuticast does not consider the energy of the nodes and hence a node may die due to its excessive utilization which can result in energy depletion problem and thereby affect overall network performance. This also makes the communication living time to decrease and communication cost to increase. Thus I have developed a stateless multicast protocol called "Energy Efficient Stateless RBMuticast protocol for Ad Hoc Networks". This protocol called EESRBM considers a hop with energy saving such that it holds low transmitting receiving costs and thereby selecting a long-lived path from source to destination. This protocol is more efficient than any of the existing multicast protocols.

Keywords: Mobile ad hoc networks, multicast routing, stateless, receiver-based communication, energy-efficiency.

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30.

Authors: **Ting Yee Lim, Ahamad Tajudin Khader**

Paper Title: **Monogamous Pairs Genetic Algorithm (MopGA)**

Abstract: As the race in producing better Genetic Algorithms (GAs) to alleviate the notorious premature convergence problems heats on, the danger of overly complex solutions, ignoring the practicality and feasibility of basic algorithms continues in some researches. In this paper, we propose a new variant of GA with decent complexity without loosing the search power. Our approach is inspired by the monogamous behavior observed in nature. The efficacy of MopGA is verified on nine benchmark numerical test functions. The results are mostly comparable to standard GA and even achieve better overall average reliability and speed.

Keywords: Genetic algorithm, monogamy, numerical function optimization

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31.

Authors: **Nehul J. Thakkar, Viral B. Prajapati, Shailesh M. Patel**

Paper Title: **Automatic Loading & Unloading CNC turning Centre DX 200**

Abstract: Manual work on CNC is normally done. Manual loading & unloading is time consumable & require manpower. Normally workers pick the component than load into the chuck & after the completion of operation unloads the component & place at require place. So it will take time to complete the cycle. In order to reduce the cycle time automation comes into play. By using robotics we can load & unload the components, which in turn reduces the cycle time & also require less labor work. So, we compare the cycle time which takes place in manually & in automation & make the model on SOLIDWORKS. Hence we can achieve the goal to reduce the cycle time & increase the productivity.

Keywords: Automation, Pick & Place Unit, Loading unloading the component, Robotics.

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Authors: **Athman Gunda, Kiptanui Too**

Paper Title: **Development of a Short Message Service (SMS) Based Online Earth Moving Equipment Catalogue**

Abstract: Earthmoving includes site preparation, excavation, embankment construction, backfilling, dredging, preparing base course, sub base, and sub grade, compaction, and road surfacing. The types of equipment used and the environmental conditions will affect the man- and machine-hours required to complete a given amount of work.
Earth moving tools and equipment catalogue is essential for estimating onsite productivity and measuring project performance in earthmoving operations. This paper presents an online catalogue for earth moving operations Short Message Service (SMS), based system, developed for estimating performance of earth moving operations which will greatly assist contractors in selecting tools and equipment for earth works using SMS, making the system economical and efficient. The proposed system is programmed in c# programming language. The database is hosted on a MySQL and it uses Global system for mobile communication (GSM) to connect to a modem which in turn sends and receive short messages to and from the user.
The developed system has been coded and the code request must contain only alphanumeric characters. Real case example of SMS request is analyzed to demonstrate the features of the developed online catalogue.

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When applied in the earthmoving industry the system can an enviable asset to contractors and increase the overall efficiency in earthmoving operations like embankment construction, backfilling, compaction and road surfacing, just to mention but a few

Keywords: Earth Moving Operations (EMO), Global System for Mobile (GSM), Online Machine Catalogue (OMC), Short Message Service (SMS).

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33.

Authors:	**Subin Sunny, P.Balaji**
Paper Title:	**The Better Optimization Technique for the Placement of DG In Order To Reduce Overall Cost of Power System**

Abstract: In a radial distribution system, the voltages at buses decrease and losses increase with increasing distance from the substation. DG can be utilized to overcome these problems. DG can deliver a portion of real and/or reactive power for reducing feeder current and thus improving both voltage profile and transmission efficiency. However, studies also shows incorrect placement of DG would lead to higher losses than the losses without DGs. This paper focuses on maximizing the net saving by minimizing the energy loss cost while considering installation and running cost of the Distributed generators. Both GA and PSO algorithms are used to find the optimal locations and sizes of DG. The obtained results are discussed and compared to each other. The proposed method is programmed and tested in a 33 bus distribution system using MATLAB software. For load flow analysis of the distribution network, forward backward sweep algorithm is used.

Keywords: Voltage Profile Improvement, Genetic Algorithm, Particle Swarm Optimization, Distribution Generators, Forward/Backward Sweep Algorithm.

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34.

Authors:	**Onur Yemenici, Habib Umur**
Paper Title:	**Velocity, Turbulent Intensity and Pressure Measurements in Turbulent Separated and Curved Flows**

Abstract: Velocity, turbulent intensity and pressure measurements over various flow surfaces were carried out by a constant-temperature hot wire anemometer and a micro-manometer. The experiments performed over a flat plate, curved walls with a radius of 2.54 m either in concave or convex curvatures and a ribbed wall has a sequence of 7 ribs at the free stream velocity of 20 m/s encompassing turbulent flows. The results showed that the concave curvature destabilized the flow and increased turbulent intensity, contrary to the convex curvature. The presence of the ribs also caused bigger turbulent intensities and the flow separations and reattachments were determined before the first rib, between the ribs, on the first rib and behind the last rib.

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Keywords: Flow separation, turbulent intensity, curved flow, ribbed surface

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35.

Authors: **Garima Vyas, Barkha Kumari**

Paper Title: **Speaker Recognition System Based On MFCC and DCT**

Abstract: This paper examines and presents an approach to the recognition of speech signal using frequency spectral information with Mel frequency. It is a dominant feature for speech recognition. Mel-frequency cepstral coefficients (MFCCs) are the coefficients that collectively represent the short-term power spectrum of a sound, based on a linear cosine transform of a log power spectrum on a non linear mel scale of frequency. The performance of MFCC is affected by the number of filters, the shape of filters, the way that filters are spaced, and the way that the power spectrum is warped. In this paper the optimum values of above parameters are chosen to get an efficiency of 99.5 % over a very small length of audio file.

Keywords: Speech recognition, Feature extraction, Feature Matching, DCT, MFCCs

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36.

Authors: **Sarthak Singh, Sakshi Singh, Jitesh Kumar, Ankit Bajpai**

Paper Title: **Declined Rectangular Slotted Microstrip Patch Antenna for Wi-Max and S-Band Application**

Abstract: Low cost high performance antenna is required in communication services in areas such as wi-fi, wimax, microwave application , Ethernet etc. The electromagnetic simulation of the proposed antenna has been carried out using IE3D software which work on principle of Method of Moment. Return loss, VSWR, antenna efficiency and radiation pattern etc can be evaluated for given design.

Keywords: Declined rectangularslot microstrip patch antenna for 3.5 GHz, return loss VSWR, antenna efficiency.

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37.

Authors: **Parul Saxena, Lokendra Kumar**

Paper Title: **A Study of the Effect of Magnetic Field on the Transport of Cargos through Nuclear Pore Complex**

Abstract: Nuclear pore complex is the largest type of macromolecular complex in the cell. In spite of their large size and complex structure NPC undergo complete breakdown and reformation at cell division. NPCs allow the transport of water soluble molecules across the nuclear envelope and can actively conduct 1000 translocations per complex per second. Small particles are able to pass through the nuclear pore complex by passive diffusion but larger particles are also able to pass through the large diameter of the pore but atmost negligible rates. Over the past few years there has been an increasing interest in the pore complex. The current challenge is to understand the effect of magnetic field and permeability on the transport of cargos from NPC using Mathematical model. For this purpose we have used bvp4c tool in Matlab. It is observed that magnetic field enhances the transport of cargos through NPC, which can be used in the cell based diseases.

Keywords: Nuclear Pore Complex, Magnetic field. Mathematics Subject Classification: 76Zxx

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38.

Authors: **Minal N. Chavhan, S.O.Rajankar**

Paper Title: **Study the Effects of Encryption on Compressive Sensed Data**

Abstract: Today's technological era is highly dominated by data transfer. Since confidential data is transmitted over risky media like internet, faithful data transfer is now accompanied with secure data transfer. Security is the need of the hour. Here, a new and relatively simple encryption algorithm is proposed which shuffles the elements. It randomizes the data. But this algorithm is applied on compressed sensed data which inherently has encryption properties. A study of the security of this additional encryption algorithm over the compressed sensed data is done and observed the objective quality of the recovered data in presence of noise.

Keywords: compressive sensing, faithful data transfer, objective quality, security

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39.

Authors: **Jitesh Kumar,Sakshi Singh, Sarthak Singh, Arvind Gaur**

Paper Title: **A Multiple Nonagon Void Slotted Rectangular Micro-Strip Patch Antenna**

Abstract: In this paper we present a proposed design for Rectangular micro-strip patch antenna by cutting multiple nonagon void shaped slots in the Rectangular patch. Using proposed antenna design and probe feeding at proper position we find the resultant return loss, VSWR and bandwidth. We are using IE3D simulation software for designing and analysis. We have observed that using slotted patch antenna and using probe feed at proper location we can get better VSWR and bandwidth.

Keywords: Slotted Nonagon void shaped rectangular micro-strip patch antenna, VSWR, radiation pattern.

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40.

Authors: **Sakshi Singh, Jitesh Kumar, Sarthak Singh, Shalabh Gaur**

Paper Title: **Design of Arrow Head Slotted Microstrip Patch Antenna for Wlan Applications**

Abstract: In recent years, great interest was focused on microstrip antennas for their small volumes, low profiles, excellent integration, low costs and good performance. With the continuous growth of wireless communication service and the constant miniaturization of communication equipment, there are higher and higher demands for the volume of antennas, integration and working band. This paper presents a single layer arrow head slotted microstrip patch antenna is thoroughly simulated for wireless communications system application which are suitable for the 3.5GHz operations. A constant circular radiation pattern, for an operating frequency of 3.5GHz can be easily achieved. Configuration of an antenna is easy to design. Different parameters like VSWR which is 1.5 at 3.5GHz, gain, radiation pattern in 2D & 3D are simulated using IE3D. This type of proposed patch can be used for various applications in S band.

Keywords: Micro-strip patch antenna, Radiation pattern,Gain, Circular polarization, VSWR, Return Loss.

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41.

Authors: **Bhupendra Panchal, R.K.Kapoor**

Paper Title: **Performance Enhancement of Cloud Computing with Clustering**

Abstract: Cloud computing is an emerging infrastructure paradigm that allows efficient maintenance of cloud with efficient uses of servers. Virtualization is a key element in cloud environment as it provides distribution of computing resources. This distribution results in cost and energy reduction, thus making efficient utilization of physical resources. Thus resource sharing and use of virtualization allows improved performance for demanding scientific computing workloads. Number of data centers and physical servers are underutilized so they are used inefficiently. So performance evaluation and its enhancement in virtualized environment like public and private cloud are the challenging issues. Performance of cloud environment is dependent on CPU & memory utilization, Network and I/O disk operations. In order to improve the performance of the virtualization with cloud computing, one of the solutions is to allow highly available data in the cluster form. Thus replicas are available at each data centers and are highly available. In the proposed work, the I/O parameters are chosen for increasing the performance in this domain. This enhancement can be achieved through the clustering and caching technologies. The use of technology for data centers clustering is proposed in this paper. Thus performance and scalability can be improved by reducing the number of hits to the cloud database.

Keywords: Virtualization, cloud computing, clustering, performance enhancement, caching.

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42.

Authors: **Er. Jagdish Patil, Er. Pratik Gite, Sanjay Thakur**

Paper Title: **Optimal Anycast Technique for Delay-Sensitive Energy-Constrained Asynchronous Sensor Networks**

Abstract: In many networks, it is less costly to transmit a packet to any node in a set of neighbors than to one specific neighbor. This observation was previously exploited by opportunistic routing protocols, by using single-path routing metrics to assign to each node a group of candidate relays for a particular destination.

This paper addresses the least-cost anypath routing (LCAR) problem: how to assign a set of candidate relays at each node for a given destination such that the expected cost of forwarding a packet to the destination is minimized. The key is the following tradeoff: on one hand, increasing the number of candidate relays decreases the forwarding cost, but on the other, it increases the likelihood of "veering" away from the shortest-path route. Prior proposals based on single-path routing metrics or geographic coordinates do not explicitly consider this tradeoff, and a s aresult do not always make optimal choices. The LCAR algorithm and its framework are general and an be applied to a variety of networks and cost models. We show how LCAR can incorporate different aspects of underlying coordination protocols, for example a link-layer protocol that randomly selects which receiving node will forward a packet, or the possibility that multiple nodes mistakenly forward a packet.

In either case, the LCAR algorithm finds the optimal choice of candidate relays that takes into account these properties of the link layer.

Finally, we apply LCAR to low-power, low-rate wireless communication and introduce a new wireless link-layer technique to decrease energy transmission costs in conjunction with anypath routing. Simulations show significant reductions in transmission cost to opportunistic routing using single-path metrics. Furthermore LCAR routes are more robust and stable than those based on single-path distances, due to the integrative nature of the LCAR's route cost metric.

Keywords: Ad-hoc, MANET, Cooperative Caching

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43.	**Authors:**	**Er. Mittu Mittal, Er. Gagandeep Kaur**
	Paper Title:	**Mixed Pixel Resolution by Evolutionary Algorithm: A Survey**

Abstract: Now a day's Remote Sensing is a mature research area. Remote sensing is defined as a technique for acquiring the information about an object without making physical contact with that image via remote sensors. But the major problem of remotely sensed images is mixed pixel which always degrades the image quality. Mixed pixels are usually the biggest reason for degrading the success in image classification and object recognition. Another major problem is the decomposition of mixed pixels precisely and effectively. Remote sensing data is widely used for the classification of types of features such as vegetation, water body etc but the problem occurs in tagging appropriate class to mixed pixels. In this paper we attempted to present an approach for resolving the mixed pixels by using optimization algorithm i.e. Biogeography based optimization. The main idea is to tag the mixed pixel to a particular class by finding the best suitable class for it using the BBO parameters i.e. Migration and Mutation.

Keywords: Biogeography based optimization, Evolutionary algorithms, mixed pixel, Migration, Mutation, Remote Sensing

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44.	**Authors:**	**Abhishek Mathur, Trapti Agrawal**
	Paper Title:	**A Survey: Access Patterns Mining Techniques and ACO**

Abstract: In this paper we define Web Mining as Data Mining on the web. Further we define Web Usage Mining along with its applications and tools. Overall the focus of the paper will be to present a survey of the recent developments of the past and current work in Web Usage Mining and looks at Ant Colony optimization algorithm as a clustering technique for web usage patterns. In addition, there is an attempt to provide an overview of the state of the art on ACO in WUM.

Keywords: Data Mining, Web Mining, Web Usage Mining, Site Customization, Ant Colony Optimization, Server Logs Data, Clustering

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Authors: **Surender Kumar Yellagoud, Munjuluri Sree Harsha, Bhamidipati Sridhar**

Paper Title: **More Accurate and Fast Fault Identification on Power Networks Using Artificial Neural Networks**

Abstract: This paper is mainly on illustrating the inherent potential of artificial intelligence(AI) tools and techniques to accurately predict and detect faults at an early stage in power systems. An AI mainly monitors and predicts locus 'n' nature of faults at an early stage on particular sections of power systems which increase the reliability and quality of the power system. The detector for this early warning fault detection device only requires external measurements taken from the input and output nodes of the power system. The AI detection system is capable of rapidly predicting a malfunction within the system. Artificial neural networks (ANNs) are being used at the core of the fault detection. Furthermore, comments on an evolutionary technique as the optimization strategy for ANNs are included in this work.

Keywords: Fault detection, fault identification, fault classification, artificial neural networks, power system networks, power quality, power reliability.

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46.	**Authors:**	**M. M. Manyuchi, A. Phiri, P. Muredzi**
	Paper Title:	**Effect of Vermicompost, Vermiwash and Application Time on Soil Micronutrients Composition**

Abstract: Vermicomposting is increasingly becoming popular as an organic solid waste management strategy. The technology results in two bio-fertilizers, vermicompost and vermiwash. The bio-fertilizers were applied to the soil and their impact on the soil micronutrients time was quantified. A maximum of 1000g of vermicompost and vermiwash was applied over 40 days. 23 factorial designs were used to determine the effects of the bio-fertilizers and application time on the soil micronutrients. Increasing the vermicompost quantity resulted in increased soil zinc, manganese and iron content. Increased vermiwash quantities resulted in increased soil iron content but resulted in decreased copper content. Furthermore, increased application time of the two bio-fertilizers resulted in enhanced soil copper and iron content but decreased the zinc and manganese content. The loam-clay soil, organic material from the bio-fertilizers and microbial activity played a significant role in altering the soil micronutrients.

Keywords: Vermicompost, vermiwash, application time, soil micronutrients, bio-fertilizer

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47.	**Authors:**	**Surender Kumar Yellagoud, Naman Bhadula, Siddharth Sobti**
	Paper Title:	**A Study of Power Formers and Their Impact on Power System Reliability and Environment**

Abstract: Conventional high-voltage generators are designed with voltage levels rated to maximum of 30 kV. The power grids with voltages as high as 1,100 kV cannot be directly supplied from these generators, power step-up transformers are used to transform the generated voltage to high transmission voltage level suitable for the interface with the transmission grid. These transformers impose significant drawbacks on the power plant as a whole - reduction in efficiency, high maintenance costs, more space, less availability, and an increased environmental impact. During the last century, a number of attempts were made at developing a high-voltage generator, the Powerformer, that could be connected directly to the power grid, without step-up transformer.
When XLPE-insulated cables were introduced in the 1960s there were some initial problems with their reliability, caused by poor control of the manufacturing processes. These problems have since been overcome, and today's high-voltage XLPE-insulated cables have an impressive track record. Therefore, the development of the Powerformer is inherently linked to the reliability and the development of the XLPE insulated cables. The powerformer has opened a new technological chapter in the generation and transmission of electrical energy. The technological advantage offered by the powerformer was studied in good detail and their impact on reliability in particular and environment in general was highlighted.

Keywords: Powerformers, high-voltage generators, power system reliability, power step-up transformers, conventional generator.

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Authors: **Rahmat Zolfaghari**

Paper Title: **Converting UML Description of Software Architecture to Stochastic Process Algebra and Performance Evaluation**

Abstract: Important qualitative parameters of the large software systems are determined by indicators of effectiveness of the software's,such as response time, operating power and error rate. Procedure modeling is an approach for evaluating the effectiveness andvalidationof the systems and, as well as it predicts the requirements of qualitative and quantitative performance and provides a comparison between all kinds of designs with respect to performance indicators.

Present study suggested a method for converting the UML description designing software to Stochastic Process Algebra (SPA)model, which provides the application of using the UML in designing software with high performance; in other words it putting the performance in designing software and a high quality software is designed.In order tomodeling the parts of system we use state chart and for the interactions between the parts we use the Collaboration chart with the performance profile (using the performance profile is the distinction between the suggested approach and the former ones.). An algorithm is provided for automatic production of the SPA performance model from the XML(Extensible Markup Language) documents and state and collaboration charts with performance profiles(stereotype, label and limitation), using the ExportXMIsoftware, ArgoUML is provided, and then they gained SPA performance/operation model in thePEPAworkbenchtool is loaded for performance analysis, so as the designer can test thefulfill of performance goals of his design according to type of different performance parameters and changing in value and chooses the best option in designing.

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Keywords: Performance evaluation,UML(Unified Modeling Language),SPA(Stochastic Process Algebra) and performance profile

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Authors: Saurabh Agrawal, J. S. Yadav, Ravindranath C. Cherukuri

Paper Title: A Novel Data Hiding Framework Using Switching Threshold Mechanism

Abstract: In the current digital era, the rapid escalations in digital multimedia and network have paved ways for people around to acquire, utilize and share multimedia information. In this paper, we introduce a novel algorithm for hiding significant amount of data while preserving the image artifacts. The algorithm uses image details and identifies the good locations for hiding using a discriminative filter. This principle enhances the immunity of the proposed system against stego detection algorithms and preserves the first order statistics of the image. In addition, the proposed algorithm could retrieve the embedded information without the prior information of the original cover. The simulation analysis would show that the proposed method offers higher immunity to stego detection algorithms and preserve the first order statistics of the image.

Keywords: Information security and assurance, discriminative filter, switching mechanism, and steganography, secured communication

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Authors: P.Sreenu, Appa Rao G, SSSV Gopala Raju

Paper Title: A Case Study on Curve Design for Improvements to Existing Master Plan Roads

Abstract: The present case study deals with development of existing roads to master plan roads. The roads from NH-5 junction to kommadi village, NH-5 to Navodhaya School, are located in Visakhapatnam city in India. Particularly these areas are densely populated and occupied with housing units, schools and commercial buildings. As these roads could not meet the present & and future demand, new road proposals was put forward by Visakhapatnam development authority (VUDA) to widen the existing road to master plan road. The present condition of the road is in deteriorated state which is sacrificed and new pavement design is proposed according to IRC-37:2001 recommendations. The studies involves collection of details such as road width, gradient, deflection angle, length of curve and radius of curve and design them to the prescribed standards of IRC code. The curve parameters have been measured using theodolite by traversing along center line of the curve.

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

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Authors: **Aruna.D.Mane, Sirkazi Mohd Arif, Waleed Abdu Rahiman**

Paper Title: **An Advanced Robot -Robin Heart (A Surgeon without Hand Tremor)**

Abstract: The paper presents the current state of works conducted by the Zabrze team under the Robin Heart surgical robot and the Robin Heart Uni System mechatronic surgical tools project as a example of introducing technology and materials advances for progress in surgical robots. The project called "Polish Cardiosurgical Robot" has been developed by Foundation for Cardiac Surgery Development since year 2000. Within the project the telemanipulator to perform the endoscopic cardiosurgical operations has been designed, manufactured and examined. In the following paper the development of construction of arms for Robin Heart versions of the robot as well as the fixing system has been presented. In the preliminary phase of the project the requirements for mechanical construction were analyzed. Additional requirements enhancing functionality of the construction were also defined. A system to verify the forward kinematic and the trajectories for the Robin Heart master device was implemented. The system consists of hardware based on incremental encoders connected to a data acquisition card and software programmed in Matlab and LabView to create an interface between the system and the user. The system verifies the position of the tool tip when different values for the joints are configured. The visualization of trajectories is also possible after saving a routine of movements made by the user. Analyses of the planned development of the construction and ways of its possible applications were performed. The special intention is to show the review of the current and futuristic medical robots needs in the area of material science.

Keywords: Medical robots, Examination of robots, Construction of robots.

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52.

Authors: **Sonal Miglani, KanwalGarg**

Paper Title: **Experimental Study of an Improvedk-Means Algorithm and Its Comparison with Standardk-Means**

Abstract: K-means algorithm is a popular, unsupervised and iterative clustering algorithmwell known for its efficiency in clustering large datasets.It is used in a variety of scientific applications such as knowledge discovery, Data Mining, data compression, medical imaging and vector quantization. This paper aims at studying the standard k-means clustering algorithm, analyzing its shortcomings and its comparison with an improved k-means algorithm. Experimental results show that the improved method can effectively increase the speed of clustering and accuracy, reducing the computational complexity of the k-means.

Keywords: Clustering, Data Mining, K-Means Clustering

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Authors: **A. M. Khan**

Paper Title: **Circuit Edit Technology for Submicron Structures in Semiconductor Devices**

Abstract: Aluminum and copper metal structures with sub micron dimension are widely used in semiconductor devices. Precise cutting of these metal lines is one of the fundamental requirements in VLSI Circuit Edit technology. Cutting of these sub micron metal lines should ensure good electrical isolation while maintaining nil / minimal damage to closely spaced adjacent metal structures. In this experimental work, both focused ion beam (FIB) technology and focused Laser beam technology have been explored. Relative merits and demerits of these technologies have been discussed. Laser beam assisted technology is found to be viable for cutting metal lines if spacing between metal lines is greater than two microns. Focused ion beam assisted technology is found to be quite effective in cutting metal structures when spacing between metal lines is less than a micron.

Keywords: VLSI, FIB, Circuit Edit, Laser, IC.

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Authors: **Shobha.K, Mamatha Jadhav.V**

Paper Title: **Simulation of a Secure Efficient Dynamic Routing In Wireless Sensor Network**

Abstract: Wireless Sensor networks have features like low cost, flexibility, fault tolerance, high sensing fidelity, creating many new and exciting application areas for remote sensing. So, wireless sensor network has emerged as a promising tool for monitoring the physical world with wireless sensor that can sense, process and communicate. There are many issues of wireless sensor network which need to be addressed .So took up one of the idea to use OSPF for secure efficient dynamic routing in wireless sensor network. The protocols that are being used till date are not efficient enough in matter of the time taken for the transferring the message from one node to another. So this project provides secure efficient dynamic routing in wireless sensor network. The protocols that are being used just provide a data packet transfer without any proper time. With the implementation of open shortest path first protocol we can get a better routing path for with least cost path. Thus the implementation of this can give a better view in the data packet transferring.The Simulation of Secure Efficient Dynamic Routing in Wireless sensor network has been implemented using dijkstra's algorithm for finding shortest path between the nodes. For providing security to the messages DES algorithm is used. The messages are encrypted and decrypted using this algorithm in order to provide security. User can be able to create number of nodes in the network. User can be able to send the packets using shortest path so that it reaches fast. User can also able to view the Routing Table at each node. User can also be able to view different nodes placed with their Node location and Node id. So from the Implementation it can be conclude that the proposed technique is very cost effective, secure and simpler to configure. From the performance Analysis it is clear that OSPF Routing in Wireless Sensor Networks is Very cost effective and more number of packets can be sent.

Keywords: Open Shortest Path First (OSPF), Link-State Packets, Backbone Area of OSPF, Area Border Routers (ABRs).

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Authors: **Prashanti.G, Deepthi.S, Sandhya Rani.K**

Paper Title: **A Novel Approach for Data Encryption Standard Algorithm**

Abstract: Now a day's providing Security for data is complicated task we have so many security methods that are implemented and deployed but out of them few are using and serving the needs of society. And we can't say that any algorithm is perfect and avoids threats. The main goal of any design of any encryption algorithm must be security against unauthorized attacks. Within the last decade, data in both the private and public sectors are increased which requires Availability, Authentication, Confidentiality, Integrity. In this paper we are considering The DES algorithm that defines the mathematical steps that transform original text (plain text) into a cipher text (secret code) and also transform the cipher text back to the original text. Here introduces a new method to enhance the performance of the Data Encryption Standard (DES) algorithm. This is done by replacing the 8/32 S-Box instead of 6/4 S-Box. The output of each S-Box undergoes AND and XOR operation before going to the permutation P. In this paper we also proposed a new operation Addition modulo instead predefined XOR operation applied during the 16 round of the standard algorithm.

Keywords: DES, Encryption, Decryption, asymmetric cryptography, symmetric cryptography.

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56.

Authors: **Pravin P Kalyankar, S S Apte**

Paper Title: **3D Volume Rendering Algorithm**

Abstract: This paper presents an analysis of the algorithms used for generating 3D structures from 2D CT-Scan Datasets. This is achieved by developing an implementation of Marching Cubes, a surface construction algorithm that's currently the standard used for 3D surface construction in the medical visualization industry. Two techniques have been chosen to produce the 3D models. The first technique is known as Volume Rendering and the second technique is known as the Marching Cubes Algorithm. Both techniques use voxels (3D square pixels) to determine the 3D area to be constructed. The Marching Cubes (MC) algorithm by Lorensen and Cline is most popular algorithm for extraction of isosurface out of volume data. Several drawbacks of MC algorithm are solved by using new improved version of MC algorithm.

Keywords: Marching Cube, 3D surface reconstruction, isosurafce, Volume rendering, Medical imaging

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Authors: **Achal Badgujar, Swati Nikam**

Paper Title: **A Study of Channel Assignment Strategies used for Uncoordinated WLANs**

Abstract: Due to tremendous increase in use of WIFI, the efficient use of available frequency spectrum has been a challenging issue. Such WIFI which are managed by non-network specialists are called Uncoordinated WLANS. The performance of Uncoordinated WLANs can be greatly improved by efficient channel assignment. In this paper, we describe the various channel assignment schemes used in Uncoordinated WLANs. After describing each scheme we also provide a qualitative comparison of the schemes based on complexity, scalability and execution behaviors. The survey is concluded with various research issues open for further study.

Keywords: Channel assignment. Co-Channel interference, Uncoordinated WLANS

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58.

Authors: **Sandeep Kumar Singh, Nishant Chaurasia, Pragya Sharma**

Paper Title: **Concept & Proposed Architecture of Hybrid Intrusion Detection System using Data Mining**

Abstract: now day's security is the primary concerned in the field of computer science. Intrusion detection system provides stronger security services with the help of rules. This paper has developed a security model based on hybrid intrusion detection system using data mining approach. Proposed security model is the combing network based and host based with efficient data mining approach to detect any type of intrusion which coming from public network or occurring in computer system. Basically this model work on misuse and anomaly detection mode, it will use an approach to extract features from arriving data packets and will apply data mining algorithm to get the rule for match normal and abnormal behavior.

Keywords: Intrusion Detection System, Security, Network System, Host System, Data mining, association

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59.

Authors: **Manasa H.B, Anirban Basu**

Paper Title: **Energy Aware Resource Allocation in Cloud Datacenter**

Abstract: The greatest environmental challenge today is global warming, which is caused by carbon emissions. Energy crisis brings green computing, and green computing needs algorithms and mechanisms to be redesigned for energy efficiency. Green IT refers to the study and practice of using computing resources in an efficient, effective and economic way. Currently, a large number of cloud computing systems waste a tremendous amount of energy and emit a considerable amount of carbon dioxide. Thus, it is necessary to significantly reduce pollution and substantially lower energy usage. The proposed energy aware resource allocation provision data center resources to client applications in a way that improves energy efficiency of the data center, while delivering the negotiated Quality of Service (QoS). In particular, in this paper we conduct a survey of research in energy-efficient computing and propose: architectural principles for energy-efficient management of Clouds; energy-efficient resource allocation policies and scheduling algorithms considering QoS expectations and power usage characteristics of the

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devices. It is validated by conducting a performance evaluation study using CloudSim toolkit.
Green Cloud Computing aims at a processing infrastructure that combines flexibility, quality of services, and reduced energy utilization. In order to achieve this objective, the management solution must regulate the internal settings to address the pressing issue of data center over-provisioning related to the need to match the peak demand. In this context, propose an integrated solution for resource management based on VMs placement and VMs allocation policies. This work introduces the system management model, analyzes the system's behavior, describes the operation principles, and presents a use case scenario. To simulate the approach of organization, theory and implementation of migration policies and reallocation changes were made as improvements in the code of CloudSim framework.

Keywords: Energy efficiency, Green IT, Cloud computing, migration, resource management, virtualization.

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Authors: **S.H.Patil, S.M.Shinde**

Paper Title: **Reliable Data Collection Using Mobile Data Collector in Wireless Sensor Network**

Abstract: in cluster based wireless sensor network common sensor nodes within the cluster sense the event periodically or continuous and transmit the data packets to the respective cluster head. Cluster heads will process the packets and transmit to the sink. As the cluster head act as intermediate node between common sensor nodes and sink so these nodes consumes more energy as compare to other nodes in network. So in this case these nodes are having more chances to dead early and due to that bottleneck problem occur in the network and this leads to affect the reliability of the network. With the help of proposed mobile data collector node (MDCN) model we can reduce the energy consumption of the nodes which are close to sink and also improve the reliability of the network

Keywords: MDCN Architecture, reliability, Wireless sensor network (WSN), mobile data collector node (MDCN).

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Authors: **M. Rama Bai**

Paper Title: **An Approach for Classification of Preprocessed Textures Based On Boundary Moments**

Abstract: Texture classification is one of the problems which have been paid much attention on by image processing scientists. Consequently, many different methods have been proposed to solve this problem. In most of these methods the researchers attempted to describe and discriminate textures based on linear and non-linear patterns. The present paper describes a novel and effective method of shape classification by combining innovative

preprocessing techniques, morphological boundary method and Hu moments. To offer better classification rate, first innovative preprocessing methods are applied on various texture images. Preprocessing mechanisms describe various methods of converting a grey level image into binary image with minimal consideration of the noise model. Then shape features are evaluated using HM by suitable numerical characterization derived from moment invariant measures on the proposed Morphological Boundary(MB) method for a precise classification. This proposed MB derives a new shape descriptor to address the image classification problem by combining boundary extraction and Hu moment(HM) invariants information. A good comparison is made between these methods by combining preprocessing techniques, boundary extraction and Hu moments. This texture classification study using MB and HM has given a good performance. The experimental results clearly show the efficacy of the present method.

Keywords: Image classification, shape representation, morphological operation, Hu moment invariants, boundary extraction, preprocessing techniques, structuring element.

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Authors:	**Jasjeet Singh Pannu**
Paper Title:	**Performance Analysis of Tikhonov Distributed Phase Error over Wireless Fading Channels**

Abstract: There is need to formulate an accurate and thoroughly reproducible error model for wireless mobile channels in order to enhance the quality of communication by using better modulation and coding schemes. However the various physical properties of propagation mode, distortion due to error in physical wireless medium and the synchronization mismatch between transmitter and receiver, leads to difficulty in modelling of the error performance of wireless channels. Phase shift keying (PSK) is one of the best modulation schemes for wireless applications mainly due to its bandwidth efficiency and constant envelope. Inspite of these advantages, PSK systems are prone to phase synchronization error which becomes even more vital issue in wireless systems as calculating correct phase over a random propagation medium is almost impossible. As a result, in addition with AWGN and fading, the synchronization mismatch of the phase between the transmitter and receiver evaluates the error performance of a wireless system. This paper examines the problem of wrong phase evaluation for the BPSK as well as for the case of general MPSK signals over Rayleigh, Nakagami-n (Rician), Nakagami-m and Nakagami-q (Hoyt) fading channels. The phase distortions are assumed to be random, unbiased, i.e. having zero-mean and may be represented by a Tikhonov distribution. The major contributions of related works were surveyed and the method that requires minimum mathematical operations (and thus proves to be less complex, more stable and accurate than others) is also explained. Apart from this, simple alternative approaches for obtaining analytical bit error rate (BER) for BPSK and symbol error rate (SER) through moment generating function (MGF) for Tikhonov distributed phase error have been proposed.
The MGF methodology has wider applicability, is able to obtain reproducible results, and shows significant improvement in accuracy regarding theoretical BER calculation as seen from the graphical comparisons. Extensive Monte Carlo simulations that builds models of possible results by substituting a range of values were also performed to validate the theoretical results presented in the research paper

Keywords: bit error rate, montecarlo simulation, synchronization, and Tikhonov distribution

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63.

Authors: **Chhaya Dalela**

Paper Title: **Comparative Study of Radio Channel Propagation and Modeling for 4G Wireless Systems**

Abstract: This paper concerns about the radio propagation models used for the upcoming 4th Generation (4G) of cellular networks. A comprehensive review of the propagation prediction models for 4G wireless communication systems is presented and computation of path loss due to specific terrain and clutter environment has been carried using MATLAB based simulations for various prediction techniques such as COST-231 Hata model, COST-231 Walfish-Ikegami method, SUI model and ITU-R(1411.1) model for broadband and mobile services. The results showed that COST-231Hata's method gave better agreement in terms of path loss values in urban, suburban and rural areas as compared to COST-231 Walfisch–Ikegami model. COST-231 Hata model shows the lowest path loss in all the terrains whereas ITU-R(NLOS) model has highest path loss values. The prediction errors of the SUI and ITU-R NLOS models are considerably higher than those of the COST-231Hata and COST-231 Walfisch– Ikegami models.

Keywords: LTE , Path loss, Propagation models

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Authors: **Sweety V. Batavia**

Paper Title: **Real Time Data Warehousing using Dynamic SQL**

Abstract: Data warehouse synchronization is a complex process in heterogeneous database environment. Maintaining the uniformity of data in real-time is a fundamental problem of data synchronization. In this paper we present a methodology to synchronize data warehouse in heterogeneous database environment in almost real-time using dynamic SQL approach. We capture all DML SQL query from source database and pass this to the processing module. Structure and DBMS systems at the source and target could be different; hence it is not possible to execute the source SQL directly into the target. A processing module runs continuously in the back end to read changes and prepare the dynamic SQL by referring the Reference Data. Reference Data acts as heart of the processing module that prepares the dynamic SQL. It specifies the mapping between source and target with all details. Another process executes the SQL query in the target system. If any error is encountered while executing the query in the target, it will be moved to the error processing module where it will be retried after some delay. Our preliminary experimental results evidence the effectiveness of the proposed method.

Keywords: We capture all DML SQL query from source database and pass this to the processing module.

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Authors: **Z.Nouman, B.Klima, J.Knobloch**

Paper Title: **Design and Implementation A Digital Sine-Cosine Generator Based FPGA**

Abstract: This article proposes a new way to generate a sine and cosine waves based FPGA. These signals can be used to generate a PWM signals that can be used in SDR and DSP. It can be used in control system like control DC and AC motors. The problem is how can generate a sine and cosine waves that are composed of the positive and

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negative part. Any hardware accepts the values 0, 1 and can't accept the negative values, we used the mode two's components of numbers to represent the positive and negative samples and converted these results to decimal numbers, and we shifted a one half wave 8 bit to obtain the wave without distortion. We used MATLAB to generate the data of sine and cosine wave. We saved the data in ROM memory using VHDL language and we applied the results onto board spartan-3A FPGA.

Keywords: comparator, counter, sine and cosine generator, lookup table, PWM, rom memory, VHDL.

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Authors: **Firoz Khan, Rajeev Kumar**

Paper Title: **Design & Analysis of Rectangular Microstrip Patch Antenna**

Abstract: In this paper the design consideration for the rectangular microstrip antenna is present. The various parameters of rectangular microstrip antenna, input impedance, VSWR, return loss, radiation pattern have been investigated as a function of frequency for different feed locations with a view to optimize the feed location for proper matching and radiations. The proposed antenna is designed at the height of 1.5mm from the ground plane and this design is operated at 1.9GHz. The entire simulation work is done on IE3D software.

Keywords: Rectangular Microstrip Antenna, Return loss.

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Authors: **S.Sundararaman, R.Saravanane, T.Sundararajan**

Paper Title: **Treatment of Industrial Analgesic Wastewater by Submerged Membrane Bioreactor**

Abstract: Extensive laboratory investigations were carried out using a commercially available submerged membrane (ZENON make; pore size – 0.04 µm and made of a polymeric material) for studying the treatment efficiency of an industrial pharmaceutical wastewater (obtained from a company manufacturing 'analgesic' drug). The bioaugmentation process adopted in the MBR is very effective for the treatment of the pharmaceutical effluent, as evident from the COD removal (%) obtained (ie., 82.5% @ 24 h HRT and 71.47% @ 8 h HRT, at the maximum OLR.

Keywords: bioaugmentation, membrane bioreactor, pharmaceutical (industrial) effluent, submerged membrane

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Authors:	**M. Ashiquzzaman, Mohiuddin K. Shourav, K. M. Masud Rana**
Paper Title:	**Feasibility Study of Using Recycled Coarse Aggregate as a Radiation Shielding Material**

Abstract: Radiation shielding is considered as a highly sensitive issue in the department of medical physics. Proper utilization of material in radiation shielding can be effective in terms of economy, durability and safety measure. Concrete is nowadays extensively used as a material for radiation shielding. The coarse aggregate of concrete plays an important role in concrete density where the density is related to the radiation attenuation. In this research, the feasible study has conducted of using the recycled coarse aggregate in radiation shielding. The focus of this paper is to introduce a possible better alternative of fresh aggregate to make the concrete shielding. Two types of recycled aggregates were taken; recycled stone aggregate (RCA) and recycled brick aggregate (RBA). Aggregate material properties were found out at the beginning of the research. As the Brachytherapy unit used in the research, the Cobalt-60 (Co-60) was selected as a source of photon energy. Then the HVL and TVL were measured based on the attenuation of radiation. The study shows that the use of recycled concrete in the radiation shielding is optimistic.

Keywords: Recycled coarse aggregate, attenuation coefficient, radiation shielding, Co-60.

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1. M. Ashiquzzaman, SK. B. Hossen, F M Z. Hossain, "Prospect of Using Recycled Concrete as Coarse Aggregate in Bangladesh", MIST Journal: Galaxy (Dhaka), Vol. 2, No. 1, pp. 07-15, Feb. 2013.
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Authors:	**Matheel E. Abdulmunim, Rabab F. Abass**
Paper Title:	**Novel Video Denoising Using 3-D Transformation Techniques**

Abstract: Digital videos are often corrupted by a noise during the acquisition process, storage and transmission. It made the video in ugly appearance and also affect on another digital video processes like compression, feature extraction and pattern recognition so video denoising is highly desirable process in order to improve the video quality. There are many transformation for denoising process, one of them are Fast Discrete Wavelet Transform(FDWT) and framelet transform (Double-Density Wavelet Transform) which is a perfect in denoising process by avoiding the problems in the other transformations. In this paper we propose a method named Translation Invariant with Wiener filter (TIW) this method is proposed to solve the shift variance problem and use this method to denoise a noisy video with Gaussian white noise type.. It is applied with Two Dimensional Fast Discrete Wavelet Transform(2-D FDWT), Three Dimensional Fast Discrete Wavelet Transform(3-D FDWT), Two Dimensional Double Density Wavelet Transform(2-D DDWT) and Three Dimensional Double Density Wavelet Transform(3-D DDWT). The results show that our (TIW) gives a better denoising results comparative with the original methods.

Keywords: Fast Discrete Wavelet Transform,Three Dimensional Fast Discrete Wavelet Transform, Double-Density Wavelet Transform, hard threshod, soft threshold, semisoft threshold, Translation Invariant Wiener filter (TIW).

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Authors: **Veeraprathap.V, M.Nagaraja, M.Z.Kurian**

Paper Title: **Network Interface Design and Implementation for NoC on FPGA with advanced Hardware and Networking Functionalities**

Abstract: As we are living in a billion transistor era, the number of components on a given chip increases drastically, System on Chip (SoC) architectures become even more powerful. Key to this architecture is the ability to integrate multiple heterogeneous components into a single architecture, which requires modularity and abstraction. An integral part of this architectural design is the methods by which the various components communicate with one another. Network on Chip (NoC) architectures attempt to address these concerns by providing various component level architectures with specific interconnection network topologies and routing techniques. Networks-On-Chip (NoCs) have been proposed as a promising replacement to eliminate many of the overheads of buses and MPSoCs connected by means of general-purpose communication architectures. This paper presents the design and implementation of FPGA based Network on chip (NoC) which is scalable packet switched architecture with advanced Networking functionalities such as store & forward transmission, error management, power management and security. All these features are built on basic NI core, which includes data packetization/depacketisation, frequency conversion, data size conversion and conversion of protocols with limited circuit complexity and cost

Keywords: Intellectual Property (IP), Multi-Processor System-on-Chip (MPSoC), Network-on-Chip (NoC), Network- Interface (NI), VLSI Architecture.

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Authors: **Dushyant Pande, Sanjeev Gaba**

Paper Title: **Measurement and Transmission of Atmospheric Parameters Using Radio Frequency Communication**

Abstract: The measurement of various atmospheric parameters is of outmost importance, not only for the weather forecasting process but also for future references. A smart, robust and cheap system is implemented which can not only measure the various atmospheric parameters like light, temperature, humidity, wind speed and atmospheric pressure but can also transmit the acquired data to a personal computer using radio frequency based wireless communication. This paper proposes the design and development of such system. The system can be considered to be consisting of two modules. One is the transmitter module and the other is receiver module. The use of microcontroller and various sensors make the system operational in real time. The acquired data is displayed on the transmitting terminal with the help of a LCD and on the personal computer with the help of a customized Visual Basic interface.

Keywords: Atmospheric parameters, Radio frequency transmission, Sensors, Visual basic, Weather monitoring.

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Authors: **Anju**

Paper Title: **Performance Comparison of Vedic Multiplier and Booth Multiplier**

Abstract: The performance of the any processor will depend upon its power and delay. The power and delay should be less in order to get a effective processor. In processors the most commonly used architecture is multiplier. If the power and delay of the multiplier is reduced then the effective processor can be generated. In this paper Vedic Multiplier and Booth Multiplier are implemented on FPGA and comparative analysis is done. The Comparison of these Architectures are carried out to know the best architecture for multiplication w. r. t. power and delay characteristics. The designs are implemented using VHDL in Modelsim 10.1 b and synthesis is done in Xilinx 8.2i ISE.

Keywords: Urdhva Tiryagbhyam, Vedic multiplier, Booth multiplier, Xilinx.

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Authors: **Gopi K.R, Mohandas K.N, Reddappa H.N, M.R. Ramesh**

Paper Title: **Characterization of As Cast and Heat Treated Aluminium 6061/Zircon sand/Graphite Particulate Hybrid Composites**

Abstract: The present investigation has been focused on the development of hybrid composite involving aluminium matrix reinforced with particulates of Zircon sand and graphite (produced by stir casting technique), the cast composites were tested for hardness, wear characteristics and the obtained properties were correlated with the microstructure. The results of the present investigation indicate that there is a considerable improvement in the hardness valves, microstructure and resistance for wear.

Keywords: Aluminium 6061, Zircon sand, Graphite

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Authors: **Simon Muhič, Milan Šturm, Mitja Mazej**

Paper Title: **Numerical and Experimental Validation of Low Exergy System for Heating and Cooling Of Residential Buildings**

Abstract: This study presents the concept of a low-exergy thermal system with thermal barrier for indirect heating and cooling of a residential building. The main concept of this technology is based on the active layer with thermal barrier located inside of external wall that is reducing the transmission heat losses and gains through the building envelope by stabilizing the temperature in the thermal barrier at the level close to the indoor air temperature. With this approach the heat flux through the wall between the interior and the thermal barrier layer is reduced to a minimum value. The active layer technology is driven by the stored solar energy for heating in winter and cold soil for cooling of the building in summer. Application of the thermal barrier system with the soil heat storage has been studied numerically and experimentally on an existing residential building. On the basis of performed numerical simulations and the data obtained from the measurements the advantages and the effectiveness of the concept have been confirmed. This study provides valuable information on the application of the system and confirms its potential for zero-energy building requirements.

Keywords: Thermal barrier, Indirect heating and cooling, Renewable energy sources, Active layer.

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Authors: **Priyadarshini. M, Murali Babu. B**

Paper Title: **Differential Evolution Algorithm for Security Constrained Optimal Power Flow**

Abstract: This paper presents a differential evolution algorithm approach to solve Security Constrained Optimal Power Flow (SCOPF) problem in power system including FACTS device. In this process, under a line outage the generation cost is to be minimised and to keep the power flow in their security limits, in addition to that the losses is to be minimised after installing the FACTS device. A versatile FACTS device Unified Power Flow Controller (UPFC) is considered as a combination of SVC and TCSC .The operating limit of the FACTS device is defined not only to minimize the total generation cost but also to reduce transmission loss. The proposed method was tested using standard IEEE-30 bus system with 6 generating units to show the effectiveness of the proposed algorithm for solving the SCOPF problem.

Keywords: Differential Evolution, generation cost, transmission loss, Security Constrained Optimal Power flow, UPFC, SVC, TCSC.

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Authors: **Arshad Nawaz, Muhammad Naeem Arbab**

Paper Title: **Voltage Regulation of Variable Speed Wind Turbine using MATLAB/Simulink**

Abstract: The conventional sources of energy are depleting and emphasis is now focused on renewable energy. Wind energy is one of the renewable sources having great potential. It is cheap and requires less maintenance but also have issues associated with it. The main issue associated with Wind turbines (WT) is the unpredictable nature of wind. This makes it difficult to get a constant frequency and constant voltage from wind turbines driven by the variable speed. This paper presents method of regulating the output voltage for standalone wind turbine driven by variable speed wind. The method is based on the using voltage regulator for the fluctuating voltage of wind turbine driven by variable speed. The regulated voltage is supplied to utility. Battery system is also proposed for the system which will provide power when wind regulated voltage is dropped from a threshold value due to low wind speed or absence of wind.

Keywords: Voltage regulation, Renewable energy, Variable speed wind turbine, off-grid

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Authors: **Susheel Kumar Sharma, Syed Hasan Mehdi**

Paper Title: **Influences of the Welding Process Parameters on the Weldability of Material**

Abstract: In this study, influence of the welding process parameters on the weldability of material, low carbon alloy steel (0.14% C) specification having the dimensions 75 mm X 50 mm X 6mm welded by metal arc welding were investigated. The welding current, arc voltage, welding speed, heat input rate are chosen as welding parameters. The depth of penetrations were measured for each specimen after the welding operation on closed butt joint and the effects of welding speed and heat input rate parameters on depth of penetration were investigated.

Keywords: Low Carbon Steel, Manual Metal Arc Welding, Welding Bead Penetration, Welding Process Parameters, Welding Speed.

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Authors: **Shubhangi Mishra, Ashish Xavier Das, A.K.Jaisawal**

Paper Title: **Effect of Mobility and Different Data Traffic in Wireless Ad-hoc Network through QualNet**

Abstract: Wireless Ad Hoc Network is collection of wireless mobile hosts forming a temporary network without the aid of any established infrastructure or centralized network. An Ad-hoc network does not have any centralized arbitrator or server. Routing is process of selecting path in a network along which to send data packets. In this paper effect of different Mobility models and Data traffic are comparatively discussed on the basis of different routing protocols AODV, OLSR and ZRP. The performance of these routing protocols is analyzed by three metrics i.e. End to end delay, Jitter and Through-put. We have studied the effect, of mobility models on the performances (End to end delay, through-put and Jitter) of routing protocols AODV, OLSR, and ZRP by using in the first the CBR (Constant Bit Rate) and secondly a multiservice VBR (Variable Bit Rate) traffic. Random Waypoint Mobility model (RWP) and Group Mobility Model has been used. Simulations are performed using QualNet 6.1 version Simulator from Scalable Networks.

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Keywords: MANET, AODV, OLSR, ZRP, CBR, VBR, Group Mobility, RWP (random waypoint)

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Authors: **S. Ezhil Vannan, S. Rekha**

Paper Title: **A New Method for Obtaining an Optimal Solution for Transportation Problems**

Abstract: In this paper a new method is proposed for finding an optimal solution for a wide range of transportation. This method is easy to understand and use compared to other methods. The main feature of this method is that it requires very simple arithmetical and logical calculations and avoids large number of iterations. This method is very efficient for those decision makers who are dealing with logistics and supply chain related issues. This method can easily adopt among the existing method.

Keywords: Transportation problem, Exponential approach, cost matrix, optimal solution.

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Authors: **K.Velayutham, U.Arumugam, B.Kumaragurubaran, P.Gopal**

Paper Title: **Analysis of Corrosion Prevention Methods in Railway Coaches and Bogies**

Abstract: This paper mainly deals with corrosion that occurs in Railway coaches and bogie components, causes of corrosion, steps taken to prevent corrosion, suggestions to minimize this problem. This paper contains new suggestions to minimize the problems: more emphasis has laid on dissimilar welding and special coating which are being done perfunctorily, the various most affected parts near the bottom of lavatory side wall plates are to be identified and replacing by dissimilar material of stainless steel and IRS M – 41.Study of modification in components design and epoxy coating methods are to be applied on the sole bar and destruction tubes. This paper describes the technique and gives details on applications.

Keywords: Coating, Corrosion prevention design, Dissimilar welding, Surface treatment.

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Authors:	**B.Kumaragurubaran, T.Parthipa Saravana Kumar, T.Senthil Kumar, M. Chandrasekar**
Paper Title:	**Optimizing the Plasma Spray Process Parameters of Yttria Stabilized Coatings on Aluminum Alloy Using Response Surface Methodology**

Abstract: Atmospheric plasma spraying is used extensively to make Thermal Barrier Coatings of 7-8% yttria-stabilized zirconia powders. The main problem faced in the manufacture of yttria-stabilized zirconia coatings by the atmospheric plasma spraying process is the selection of the optimum combination of input variables for achieving the required qualities of coating. This problem can be solved by the development of empirical relationships between the process parameters (current, powder feed rate, stand-off distance, no of passes) and the coating quality characteristics (coating thickness, coating hardness and porosity) through effective and strategic planning and the execution of experiments by response surface methodology. This article highlights the use of response surface methodology by designing four factor five level central composite rotatable design matrixe with full replication for planning, conduction, execution, and development of empirical relationships. Further, response surface methodology was used for the selection of optimum process parameters to achieve desired quality of yttria-stabilized zirconia coating deposits on aluminum alloy.

Keywords: Plasma spray, statistical experiments, response surface methodology, yttria stabilized zirconia, coating thickness, porosity, coating hardness.

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Authors: **Mohini Gupta, Amit Kanungo**

Paper Title: **Survey Detection and Prevention Scheme against Wormhole Attack in MANET**

Abstract: In Mobile ad hoc network (MANET) various routing attacks for single-path routing have been proposed in previous work. These nodes communicate with each other by interchange of packets, which for those nodes not in wireless range goes hop by hop. Due to absence of a defined central authority, securing the routing process becomes a challenging task thereby leaving MANETs vulnerable to attacks, by that the deterioration in the performance characteristics as well as raises a serious question mark about the reliability of such networks. This last point is where the main problem for MANET security resides, the ad hoc networks can be reached very easily by users, but also by malicious attackers. If a malicious attacker reaches the network, the attacker can easily exploit or possibly even disable the mobile ad hoc network. In this paper we presents the overview of types of attacks and their solution to recognizes the effect of attacker and security schemes.

Keywords: MANET, Routing, Attack, survey, Security scheme.

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Authors: **Shanu Singh, Shikha Chandana, Amit Kumar Pandey**

Paper Title: **Co-operative and Threshold Detection Method and Proposed Algorithm for Black Hole Attack**

Abstract: To avail the prospective of wireless communication now days, the complete communication should be flexible and supportive to various architectures. Now a days various prospective has been proposed to achieve the flexibility and minimize the losses. Various routing protocols has been proposed in case of Mobile and ad-hoc

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networks. Various optimized link and nodes for routing is insisted in this paper. This paper comes with a complete comparative study of various routing protocol, security issue and physical layers . In this paper an approach has been proposed for Black Hole Removal using Threshold and Co-operative Method. Co-operative detection method has been also proposed to identify the proper step. Over all this paper contains a comparative routing protocol and study of various security issue physical layer and proposed algorithm for co-operative detection method of Black hole Attack.

Keywords: Routing protocol, security issue, physical layers, co-operative detection.

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Authors: **Monica P. Chanchlani, Madhuri Khambete**

Paper Title: **A Novel Speed-up Feature Matching Algorithm for Image Registration using SUSAN and RANSAC**

Abstract: A novel feature matching algorithm for image registration is proposed in this paper. The accuracy of a registration process is highly dependent on the feature detection and matching. In this paper, we use a SUSAN (Smallest Univalue Segment Assimilating Nucleus) algorithm to detect features, which is one of the most excellent methods, robust to noise and less affected by rotation. One common approach used for feature matching is correlation between feature points. But in this method much computational time is required to establish the correspondences. In this paper, we overcome this difficulty through our speed-up approach. The basic concept of our approach is to calculate the descriptor values for every feature point which are then stored. These values will finally be used for feature matching. This reduces the number of operations in feature matching step and thus speed-up in matching is obtained. After matching, RANSAC method is used to find the registration transform parameters.

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Keywords: Image Registration, SUSAN, Feature Matching, Computation Time, RANSAC.

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Authors: **Sajith A.G, Hariharan.S**

Paper Title: **A Fast Level Set Algorithm for Liver Tumor Segmentation**

Abstract: Accurate and fast image segmentation algorithm is of paramount importance for a wide range of medical imaging applications. The most widely used image segmentation algorithms are region based and typically rely on the homogeneity of the image intensities in the regions of interest, which often fail to provide accurate segmentation results due to the gradient function gives very small values at the boundary and makes the speed of the moving contour low and the gradient based term can never stop the level set evolution completely even for ideal edges, making leakage often inevitable. In this paper a fast narrow band distance preserving level set evolution algorithm is used for liver tumor segmentation. Experimental result for CT images shows desirable performances of the method.

Keywords: Level set, FCM.

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Authors: **B. Nath, S. Roy**

Paper Title: **Some Classes of Fuzzy I – Convergent Difference Double Sequence Spaces Associated With Multiplier Sequences**

Abstract: In this article we introduce some new classes of fuzzy real-valued difference double sequence spaces associated with a multiplier sequence. We introduce double sequence spaces and where a multiplier sequence of non-zero real numbers is and is a double sequence of bounded strictly positive numbers. We also make an effort to study some algebraic and topological properties of these sequence spaces Also we characterize the multiplier problem and obtain some inclusion relation involving these classes of sequences.

Keywords: Multiplier sequence, I–convergent, Ddifference sequence spaces, Solid space, Sequence algebra, Convergence free etc.

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Authors: **Sushma K S, Vinay Kumar V**

Paper Title: **Dynamic Resource Allocation for Efficient Parallel Data Processing Using RMI Protocol**

Abstract: In recent years ad-hoc parallel data processing has emerged to be one of the killer applications for Infrastructure-as-a-Service (IaaS) clouds. Major Cloud computing companies have started to integrate frameworks for parallel data processing in their product portfolio, making it easy for customers to access these services and to deploy their programs. the processing frameworks which are currently used have been designed for static, homogeneous cluster setups and disregard the particular nature of a cloud. Consequently, the allocated compute resources may be inadequate for big parts of the submitted job and unnecessarily increase processing time and cost. In this paper we discuss the opportunities and challenges for efficient parallel data processing in clouds and present our research project Nephele. Nephele is the first data processing framework to explicitly exploit the dynamic resource allocation offered by today's IaaS clouds for both, task scheduling and execution. In this paper we discuss the opportunities and challenges for efficient parallel data processing Particular tasks of a processing job can be assigned to different types of virtual machines which are automatically instantiated and terminated during the job execution. Based on this new framework, we perform extended evaluations of MapReduce-inspired processing jobs on an IaaS cloud system and compare the results to the popular data processing framework Hadoop.

Keywords: Many-Task Computing, High-Throughput Computing, Loosely Coupled Applications, Cloud Computing.

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Authors: **Gupta, P., Purohit, G. N., Dadhich, A.**

Paper Title: **Crime Prevention through Alternate Route Finding In Traffic Surveillance Using CCTV Cameras**

Abstract: Road Traffic Network Surveillance through CCTV Cameras finds its applications in various issues of social and administrative importance including Crime Prevention. Crimes associated with theft, kidnapping and missing cases demand tracking of paths of a suspect vehicle, which that vehicle might have followed. Since it is difficult to place CCTV Cameras at each and every traffic intersection point, information collected from CCTV Cameras placed at some important junctions can be exploited to generate the required paths. Algorithm for finding the routes of the suspect vehicle in given road traffic network with certain active intersection points, which are under CCTV surveillance, has been suggested. Simulation of the algorithm has been conducted in SUMO and results in the form of alternate paths between two given intersection points, where the target vehicle has been tracked through CCTV Cameras are presented.

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Keywords: Alternate Routes, CCTV Camera, Crime Prevention, Python, Simulation, Urban Mobility, Traffic Surveillance.

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Authors:	**Abhinav Sharma, Saleem Khan, Shavet Sharma, Parveen Lehana**
Paper Title:	**Effect of Impedance Load on the Power Factor of Microcontroller Based Power System**

Abstract: Power system designs require considering various parameters effecting power factor. The research work is carried out to study and analyze the effect of impedance with varying inductance on the power factor of designed system. Eight different values of the inductance are taken from 269.1 mH to 1232.0 mH with capacitance of 50 µF and resistance 124 Ω. From the analysis it is observed that the current through the load is inversely proportional to the values of inductance and similar is the case for power factor. The minimum and maximum values of power factor obtained are 0.358 and 0.987 respectively.

Keywords: Active Power, impedance, power factor.

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Authors:	**Jyoti Lalotra, Saleem Khan, Shavet Sharma, Parveen Lehana**
Paper Title:	**Investigation of the Effect of Inductive Load on Harmonic Distortion of IGBT based Power System**

Abstract: Research work carried out to investigate the effect of loads (combination of resistive, capacitive, and inductive) on the IGBT based power system. Total harmonic distortion in the input and output is calculated. Eight different combinations of the load are taken with different values of inductance keeping resistance and capacitance constant. Input and output voltages were recorded for all combinations using Gold wave software having duration of 1 sec with sampling rate of 16,000. A computer algorithm is designed to calculate total harmonic distortion in the input and output of the system. The designed microcontroller and IGBT based power system shows reduction in the

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distortion at the output.

Keywords: Power system, harmonics, Total harmonic distortion.

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Authors:	**L.Maria Irudaya Raj, Sathishkumar.J, B.Kumaragurubaran, P.Gopal**
Paper Title:	**Analysis of Hard Chromium Coating Defects and its Prevention Methods**

Abstract: This paper mainly deals with various Chromium coating defects that occur while electro plating of different mechanical components and methodology adopted to prevent it. It also covers suggestions to minimize this problem. This paper contains new suggestions to minimize the problems by using recent technological developments. Since the chemicals used for chromium coating are posing threat to environment it is need of the hour to minimise the use such chemical consumption. The reduction in defective components will increase productivity as well as protect the environment to some extent It also describes the various alternate coating methods for chromium coating through which we can achieve the required surface properties. India being a Developing country .for various coating application chromium is used. Since the process is slow and involves lengthy cycle time unless the defects are minimized the products cannot be delivered in time which will create loss to the Industries. Being the cheaper & simple technological process it is being used for coating applications. Disposal of effluents generated by this chromium coating process has to be taken care of by the Industries which are using the process. By using the chromium along with other materials, defects can be minimized as well as better surface properties can be obtained. This paper describes the techniques and gives details of chromium coating applications in various Industries.

Keywords: Chromium Coating, Defects, Prevention methods, Surface treatment..

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Authors: **Megha Parolekar,V.G.Bhongade, S.Dutt**

Paper Title: **Voltage Profile Improvement and Power Loss Reduction in Different Power Bus Systems Using TCSC**

Abstract: With the restructuring of power market, the voltage stability has become a major concern .FACTS devices adaptive to voltage-magnitude controlas well as can regulate the active and reactive powersimultaneously because of their flexibility and fast controlcharacteristics. This paper focused on the mathematical modeling of Flexible Alternating Current Transmission Systems (FACTS) -devices in optimal power flow analysis. A Thyristor Controlled Series Capacitors (TCSC) mathematical models have been established,and the Optimal Power Flow (OPF) with these FACTS-devices is solved by Newtons method. This article employs MATLAB Simulation, the development of OPF and the suitability of Newton-based algorithms for solving OPF-TCSC problem is done. The concept was tested and validated with TCSC in 5-bus,14-bus and 30-bus test system. Optimal Power Flow problem has been explored and tested with and without compensating device. The results show that in large-scale system, where the number of constraints is very large, the Thyristor-Controlled Series Capacitor is effective for controlling the specified amount of active and reactive power in between two buses as well improves voltage profile which improves system security . Placement of these devices in suitable locationcan lead to control in line flow and maintain bus voltages indesired level .

Keywords: Net active and reactive power loss Optimal power flow, Optimal location,TCSC device,Voltage magnitude.

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Authors: **L. Sreenivasulu Reddy, T. Mahesh Kumar, C. Jaya Subba Reddy**

Paper Title: **The Fundamental Results on Non-Associative Rings with Cyclic Property**

Abstract: This paper describes results on a non-associative ring R with the cyclic property: $(xy)z = (yz)x = (zx)y$ for all $x, y, z \in R$ along with commutative and /or associative properties mainly.

Keywords: Non-Associative ring, Cyclic Property.

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94.

Authors: **Shima Simsar, Mahmood Alborzi, Jamshid Nazemi,Mahmood Abbasi Layegh**

Paper Title: **Forecasting Power Demand Using Neural Networks Model**

Abstract: In recent years, by entering the competition arena, not only providing the needed electricity demand, but also reducing the cost of purchased electricity has been one of the biggest challenges of power distribution companies. Solving this challenge has lots of profits and high efficiency for these companies, this research deals with forecasting power demand using neural networks model. To test the power demand , two consecutive years in the West Azarbaijan Province have been selected as a case study.Daily consumption of electricity demand follows

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time series models. In this study, the daily demand for two years, temperature and humidity of each day and type of days (weekdays or weekends) have been considered. In order to fit the neural network model, the architecture of multi-layer perceptron (MLP) with back propagation learning algorithm has been used. The results indicate that data related to humidity, temperature and also weekends or off-days have an effect on prediction of electricity demand.

Keywords: Forecast, Neural network, Time series, Power demand.

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Authors:	**A.Sathyavathi, M.R.Rajaraman, B.Kumaragurubaran, P.Gopal**	
Paper Title:	**Surface Roughness Optimization Techniques of CNC Turning: A Review**	

95.

Abstract: Surface Roughness are generally used as a guide to find out the surface finish for unbroken upgrading of surface quality. A great number of publications by a variety of authors reproduce the significance in this parameters. Reviews of literature on surface roughness optimization have been done in the past by a most of the authors. However, considering the assistance in the recent times, a special review is attempted here. In this paper, the authors have reviewed the literature in a way that would facilitate researchers, academicians and industrials to take an earlier look at the growth, development and applicability of this technique. The authors have reported various papers and have proposed a different scheme of sorting. In count, positive gaps that would offer hints for further research in this playing field have been identified.

Keywords: Computer numerial control, Surface Roughness, Optimization, Tool

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Authors: **S.V. Kshirsagar, V.N. Dhage, S.J. Shukla, K.M. Jadhav**

Paper Title: **Influence of Mn-Zn Co-Substitution on the Structural and Magnetic Properties of Magnesium Ferrite**

Abstract: The magnesium manganese - Zinc ferrites having chemical formula MgMnxZnxFe2-2xO4 for x varying from 0.0 to 0.6 in the steps of 0.1 have been synthesized by standard ceramic technique. The variation of Mn - Zn substitution has significant effect on the structural and magnetic properties of magnesium ferrite. The phase identification of the powders performed using X-ray diffraction technique shows presense of high purity cubic phase and absence of any secondary phases. The lattice constant increases from 8.35 to 8.43Å with increase in Mn-Zn substitution x. The Pulse field hysteresis loop tracer technique is used to study the magnetic properties of the prepared samples. The Saturation magnetization (Ms), remanance magnetization (Mr), Coercivity (Hc) and magneton number (nB) are measured at room temperature. The Saturation magnetization (Ms) and magneton number (nB) increases upto x = 0.3 and then decreases with increase in Mn-Zn substitution x in magnesium ferrite.AC Susceptibility measurement confirms the decrease in Curie temperature with increase in Mn-Zn substitution x.

Keywords: Magnesium ferrite, ceramic technique, X-ray diffraction, Magnetization.

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Authors: **Sachin S Patil, P T Nimbalkar, Abhijit Joshi**

Paper Title: **Hydraulic Study, Design & Analysis of Different Geometries of Drip Irrigation Emitter Labyrinth**

Abstract: In order to solve the problem of water shortage in agriculture, it's necessary to develop water-saving irrigation. Drip Irrigation is a method of applying uniform and precise amount of water directly to the root zone of the plants as per the requirement, through emitters at frequent intervals over a long period of time, via pressure pipe network. As the key device in drip irrigation systems, the emitter is to drip the pressured water in the pipeline to the root of the crops evenly and steadily, so as to guarantee the water demand for crop growth. The quality of the emitter has an important effect on the reliability, life span of the drip irrigation system and irrigation quality. Usually, the structure of the emitter channel is very complex with a dimension. Emitter's intricate inner channel makes the flow of water have turbulent behavior. In the design of emitter structure, we use 3D parametric CAD software SolidWorks 2012 to design labyrinth emitter. According to emitter's hydraulic performance and its requirement for anti-clogging, we can design new channel structures by changing those dimensions. The irrigation

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quality of drip irrigation system is verified by emitter's hydraulic performance. In the high-pressure pipeline, the water energy may dissipate after flowing through the labyrinth channel and the flow rate can be controlled to meet the water need of the crops. To ensure the emitter's hydraulic performance, before the fabrication of emitter, computational fluid dynamics (CFD) is used to predict emitter's flow rate and analyze its hydraulic performance under various water pressures.

Keywords: anticlogging, discharge,drip irrigation, exponent, emitter.

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Authors: **Shweta S. Khobragade, Swapnali P. Karmore**

Paper Title: **Review on: Low Power VLSI Design of Modified Booth Multiplier**

Abstract: Low power VLSI circuits became very vital criteria for designing the energy efficient electronic designs for prime performance and compact devices. Multipliers play a very important role for planning energy economical processors that decides the potency of the processor. To scale back the facility consumption of multiplier factor booth coding methodology is being employed to rearrange the input bits. The operation of the booth decoder is to rearrange the given booth equivalent. Booth decoder can increase the range of zeros in variety. Hence the switching activity are going to be reduced that further reduces the power consumption of the design. The input bit constant determines the switching activity part that's once the input constant is zero corresponding rows or column of the multiplier ought to be deactivated. When multiplicand contains more number of zeros the higher power reduction can takes place. So in modified booth multiplier high power reductions will be achieved.

Keywords: Digital signal processing(DSP); Carry Save Adder(CSA); Full Adder(FA),Column Bypass Multiplier(CBM)

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Authors: **K. Sundeep Kumar, Lalitha Asokan, Priyadarshini M.P, B. Eswara Reddy.**

Paper Title: **Assessment of the Wound-Healing Process by Accurate Single View Issue Classification and Depth Estimation for Telemedicine**

Abstract: With the widespread use of digital cameras, freehand wound imaging has become common practice in clinical settings. There is however still a demand for a practical tool for accurate wound healing assessment, combining dimensional measurements and tissue classification in a single user friendly system. In this research work, we propose optimal techniques for the assessment of wound healing process. The proposed system comprises cascade of four stages - Pre - Processing Stage, Segmentation, Feature Extraction and Classification. All the implementations are done in MATLAB.

Keywords: Clustering, Epidermis, Feature vectors, Intensity, Multi -Class, Tissue.

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Authors: **Triveni.K.S, E. Elavarasi**

Paper Title: **High Speed Efficient Karatsuba- Ofman Pipelined Multiplier for Low Contrast Image Enhancement**

Abstract: Multiplication is one of the supreme operation in many high performance systems such as microprocessor, FIR filters, Digital Signal Processor, Image Processing etc. Since multiplication dominates the execution time of most operations, there is a huge demand in increasing the speed of the multipliers, which has been subject of interest over years. . Multiplier based on Vedic Mathematics is one of the fast and low power multiplier. This proposed Karatsuba-Ofman Pipelined Multiplier (KOPM) is designed mainly to optimize speed of the multiplier which is the major requirement in many applications. Karatsuba-Ofman algorithm [3] is employed to optimize the speed. Pipelining will enhance the performance of the multiplier. The multiplier is implemented for the low contrast image enhancement. This multiplier has been synthesized on Spartan3E.

Keywords: Karatsuba-Ofman, Low contrast image, Pipelining, Vedic Mathematics.

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Authors: **C. Srujana, B. Rama Murthy, K.Tanveer Alam, U. Sunitha, Mahammad D.V, P.Thimmaiah**

Paper Title: **Development of RFID Based Library Management System Using MATLAB**

Abstract: Radio frequency identification (RFID) is a rapidly emerging technology which allows productivity and convenience. No doubt it is an integral part of our day to day life, as we are using in many applications like industrial, shopping malls, traffic and libraries. As so far this technology implemented successfully worldwide. But in India it is still in observation state especially in library management at university and educational institutions due to lack of awareness and cost. To overcome this situation here we made an attempt to implement RFID based library management system in our university. The proposed system is based on high frequency DLP RFID1 Read/Writer

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having the range of frequency is 13.56 MHz's and it can Read up to 15 Tags simultaneously. The software written in MATLAB and MySQL to improve system performance. The proposed system successfully implemented in our library and it is satisfactory working

Keywords: DLP RFID1 Read/Writer, RFID tag, MATLAB, MySQL

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Authors: **Sridevi P.M, Jitendranath Mungara, K. Sundeep Kumar, Manoj Challa**

Paper Title: **Energy Efficiency by Utilizing Link Quality and Loop Breaking In WSN**

Abstract: Energy is a major critical resource in wireless sensor network. Most of routing protocol forward message along with minimum energy to the sink to minimize the consumption of energy, which causes imbalance of residual energy and link unreliability among all sensor nodes. In this paper, with the help of the potential classes, we are going to design the energy balanced routing protocol with link quality by creating mixed potential field in terms of energy density, residual energy, depth and link quality. The goal of paper is to forwarding packets towards to sink through dense energy and protect the nodes from low residual energy. The link quality mechanisms rely on aggregation of the high quality links to maintain network connectivity for long time, which avoids unwanted transient topology break down. Our results show that improvements in balancing energy, network throughput and network lifetime in wireless sensor network.

Keywords: WSN, balanced energy consumption, potential field, required power, energy efficient routing and link quality.

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Authors: **Prachi Shukla, Kanwar Preet Kaur**

Paper Title: **Performance Analysis of EDFA for different Pumping Configurations at High Data Rate**

Abstract: The performance of Erbium Doped Fiber Amplifier (EDFA) depends on various parameters like, Er+3 doping concentration, active fiber length, pump power, pumping wavelength etc. In this paper, the analysis of gain and noise figure (NF) of EDFA is done at different pump power (10, 50, & 100mw) and at different fiber length (10, 30, & 50m) for different pumping configuration i.e. forward pumping, backward pumping, and bidirectional pumping operating in C-band at high data rate.

Keywords: Erbium Doped Fiber Amplifier (EDFA), Erbium Doped Fiber (EDF), Gain, Noise Figure (NF).

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Authors: **Aaradhna Dubey, Rajneesh Agrawal, Rajender Singh Yadav**

Paper Title: **Enhanced Routing Technique for Energy Conservation in Wireless Sensor Networks**

Abstract: Wireless Sensor Networks are being applied in many real world applications in recent years. For real time applications WSN are proving to be the best mechanism. Some of the important application examples for WSN are environment monitoring, health monitoring and military etc. Such applications require real time data to be delivered on time for critical evaluations. To ensure the reliability in wireless sensor networks applications, power efficiency needs to be focused since sensor nodes have a limited power supply. The power efficiency in wireless sensor networks is a main factor to ensure the success of these networks.

The main sources of energy consumption in WSN are routing process and initialization process in routing mechanism which applies a significant impact on energy level. The works proposed and implemented by the various authors examined energy level and performance in terms of the entire process of routing mechanism. This work proposes to reduce the usage of the energy and long sustaining energy levels in the WSN. As energy level is critical in evaluating the performance therefore an algorithm is being proposed to evaluate the best route on the basis of the energy levels of the nodes alongwith other metrics. This will be useful in forwarding the packets to even long distances with the least burden on the nodes having less energy level.

The store & forward technique is being applied for reducing the energy usage involved in getting routing information from other nodes.

Keywords: Wireless Sensor Networks, Store & Forward Technique, Power & Energy Levels

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Authors: **Anil Kumar G, P Jayarekha, Krishna Kumar M, H S Guruprasad**

Paper Title: **Implementation of Software for VPLS Service Reconfiguration**

Abstract: This paper focus on the design and implementation of a software solution for fast reconfiguration of a Virtual private LAN service (VPLS) service for a business enterprise in the MPLS VPN network. The VPLS service as is a transparent LAN service for two or more customers sites is provisioned with the Service Access Point (SAP), Service Distribution Point (SDP) and Pseudo wire configurations with a per service granular QoS. The paper also pronounces the fast user customization of the service which reflects in the service manager. Each service in the service router has a unique ID. The reconfiguration is done based on the specifications provided by the customer.

The flexibility of reconfiguration and customization criteria is met by the software tool which acts as a black box, taking the service IDs of the VPN services and provides scalability in accessing the configurations of large number of services and providing LOG files which associate to minimize the reconfiguration time of the VPN service. At the end, an example VPLS service is shown with the actual and desired service configurations and also the features of the software tool along with the design, implementation consisting of various modules the project is divided in and the procedures used with the test results provided.

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Keywords: MPLS/VPN, Reconfiguration, SAP, SDP, VPLS.

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Authors:	**A.Rachidi, A.Talbi, A.Khatory**
Paper Title:	**The New Forms of the Industrial Maintenance: Which Impact in the Performance of the Industrial Companies? (Case study)**

Abstract: for a long time the industrial Maintenance is regarded as a vital action in the industrial companies, this classical design of Maintenance saw a radical evolution according to the technological development as well as the integration of the New Information and Communication Technologies (N.I.C.T.), the globalization and the word competitiveness which involve the assurance of the total quality of products and the cutting cost, that is it on their immaterial resources(human, system, process…), or in the materiel resources (Tools, equipment…).

However, it is unanimously recognized that N.I.C.T. play a key role for the support and the assistance of the majority of the activities of Maintenance and whose the Computerized Mechanical Management System (C.M.M.S.) constitutes a significant portion. These multiple evolutions have created a new requirement as regards of competences and versatility of the operators of Maintenance, the latter must know as well permanently about the last developments in the developments in the technologies of the generating stations automated as of the new method and tools for Maintenance.

Our word fellows two ways; the first one consists in describing the successive changes of the Maintenance function and its impact on the competence of the operators of Maintenance. The second aims to modeling the positioning of the Maintenance function starting form a diagnosis based on the concept of audit which is carried in the Tangier Free Zone (T.F.Z.), according to three branches of industry, the textile, leather and clothing sector, the construction, manufacturing and aeronautical sector, and finally the wiring, electronics and electricity sector, while locating the impact of the N.I.C.T. in the industrial Maintenance.

Keywords: C.M.M.S., Competence, Evolution, Impact, Industrial Maintenance, Modeling, N.I.C.T., TFZ.

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Authors: **Disha Budale, Dashrath Mane**

Paper Title: **Predictive Analytics in Retail Banking**

Abstract: Today banks are facing intensive competition due to the gradual growth of many banks as well as due to the increase in demands of the customers. Customers easily switch to another bank if the other bank is providing them more benefits and facilities that they want. To tap these needs of the customers and reduce the customer attrition, many banking institutions are using predictive analytics. Using the predictive analytics banks are trying to improve their relationship with customer, and retain their existing customers and also devise effective mechanism for marketing.

Keywords: Predictive Analytics; Banks; CRM; Customer Retention

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Authors: **Mangal Patil, J. S. Chitode**

Paper Title: **Improved Technique for Audio Watermarking Based on Discrete Wavelet Transform**

Abstract: With digital computers, Internet flexibility promotes an efficient distribution of the digital contents. An Approach of digital watermarking has been proved as an effective approach for providing the copyright protection of multimedia data for audio, image & video signals. We propose an effective watermarking algorithm based on Discrete Wavelet Transform for audio. This approach embeds the image watermark data into approximate coefficients of the wavelet transform. Embedded watermark can be faithfully recovered under different attacks such as volume scaling, re-Sampling, low pass filtering & re-quantization, etc. The performance evaluation of proposed algorithm indicates improved signal to Noise ratio & peak signal to noise ratio.

Keywords: Digital Audio Watermarking, Information Hiding, Copyright Protection, Wavelet Transform, Robustness.

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Authors: **Disha Budale, Dashrath Mane**

Paper Title: **Predictive Analytics in Retail Banking**

Abstract: Today banks are facing intensive competition due to the gradual growth of many banks as well as due to the increase in demands of the customers. Customers easily switch to another bank if the other bank is providing

them more benefits and facilities that they want. To tap these needs of the customers and reduce the customer attrition, many banking institutions are using predictive analytics. Using the predictive analytics banks are trying to improve their relationship with customer, and retain their existing customers and also devise effective mechanism for marketing.

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1. http://blog.thegmid.com/tag/analytics-in-retail-banking/
2. http://en.wikipedia.org/wiki/Predictive_modelling
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110.	**Authors:**	**Gargi Amrujkar, Pramila Adavi**
	Paper Title:	**E - Partner System for Construction or a New ERA for Business Partnering in Construction Industry**

Abstract: Partnering is a set of actions, from Project Management, that help project teams improve their performance and thus, provide substantial benefits. Business partnering is "the development of successful, long term, strategic relationships between customers and suppliers, based on achieving best practice and sustainable competitive advantage"(Lendrum, 1997). Partnering attributes commitment, trust, mutual objectives & goals and developing long term relationship with all the stakeholders associated with the project. Stakeholders such as Architect & Designers, Consultants, Contractors & Sub-Contractors and Suppliers & Vendors collaboratively work together under same terms and conditions with similar organizational culture for achieving a successful project.
This paper describes a web – based Partnering System with the principle of overcoming the various problems that are associated with the traditional or manual process to achieve complete transparency at every step and at every transaction. Thus, increasing competitiveness of companies/firms by taking advantage of mutually developed relations & opportunities and reducing risks . It is an attempt to bridge the gap between the Builder's Organization and the various Stakeholders associated with a Project. Analysis and thus, System Development has been done with the objective of identifying a standard operating procedure for successful and strategic partnering relationships. Partnering strategy focuses on developing guidelines which include Partner Registration, Partner Selection & Approval based on qualification criteria, Partner Evaluation based on weighted grade point average, Automated Generation of Quotation and Negotiation, forming a Partnering Agreement & setting up mutual goals & objectives and Generating automated Purchase/Work/Service order along with Time & Payment Schedule. Basis for Project Partners is to adopt a "Win - Win" approach to solve problems and develop 'Synergistic' team work amongst them.

Keywords: Business Partnering, Web - Based System, Stakeholders, Evaluation, Dashboard.

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111.	**Authors:**	**Garima Nautiyal, Rajesh Kumar**
	Paper Title:	**Spectrum Sensing In Cognitive Radio Using Matlab**

Abstract: The radio frequency spectrum is a scarce natural resource and its efficient use is of the utmost importance. The spectrum bands are usually licensed to certain services, such as mobile fixed broadcast, and satellite, to avoid harmful interference between different networks. Most spectrum bands are allocated to certain services but worldwide spectrum occupancy measurements show that only portions of the spectrum band are fully used. Moreover, there are large temporal and spatial variations in the spectrum occupancy. In the development of future wireless system the spectrum utilization functionalities will play a key role due to the scarcity of unallocated spectrum. Moreover, the trend in wireless communication system is going from fully centralized system into the direction of self-organizing system where individual nodes can instantaneously establish ad hoc networks whose

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structure can change over time. Cognitive radio, with the capabilities to sense the operating environment, learn and adapt in real time according to environment creating a form of mesh network, are seen as a promising technology. The paper presents an overview of cognitive radio, various spectrum sensing technique used in CR and also describe the state-of-the-art in cognitive radio standards and regulation. In this project we have implemented and analyzed the energy detection technique for spectrum sensing in CR.

Keywords: Cognitive Radio, Spectrum Sensing, Energy Detection, Primary user, Secondary user, Threshold, Probability of detection, Probability of false alarm.

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Authors: **N. Nafsin, H. M. M. A. Rashed**

Paper Title: **Effects of Copper and Magnesium on Microstructure and Hardness of Al-Cu-Mg Alloys**

Abstract: Aluminum alloys with a wide range of properties are used in engineering structures. Selecting the right alloy for a given application entails considerations of its tensile strength, density, ductility, formability, workability, weldability, and corrosion resistance, to name a few. Aluminum alloys are used extensively in aircraft due to their high strength-to-weight ratio. On the other hand, pure aluminum metal is much too soft for such uses, and it does not have the high tensile strength that is needed for airplanes and helicopters. Thus various alloying elements are added to aluminum to enhance the mechanical properties of aluminum. Copper has been the most common alloying element almost since the beginning of the aluminum industry, and a variety of alloys in which copper is the major addition were developed. Magnesium (Mg) used to strengthen and harden aluminum castings. The current research emphasizes establishment of relationship between microstructure and cold deformation behavior of aluminum-copper -magnesium alloys. Aluminum-copper-magnesium alloys with varying Cu% and Mg% were casted and their chemical compositions were determined using Optical Emission Spectroscopy (OES). These alloys undergone cold deformation after homogenization and their microstructures were examined using optical microscope. Finally the effects of deformations were studied by measuring the hardness of those alloys.

Keywords: Aluminum alloy, microstructure, cold deformation, hardness.

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Authors: **Anupa.K, Channabasappa Baligar**

Paper Title: **Real-Time Communication between Aero Gas Turbine Engine Controller and Pilot Online Monitoring System**

Abstract: The application presented, is developed based on real-time systems which is built for a very small set of mission-critical applications like space craft's , avionics and other distributed control systems. The modern software deals with external interfaces and has to consider various timing implications The platform is based on the VxWorks 5.4.2 and developed using Tornodo IDE 2.0.2 tool with the targeted deadline of 30 milliseconds at the baud rate of 9.6kbps. RS232 interface executes the role of Transportation and Communication, an interface cable used for serial communication between Digital Electronic Control Unit (DECU) and the host to transfer data to the pilot Online Monitoring System and that is based on Laboratory Virtual Instrument Engineering Workbench (LabVIEW)7.1.

Keywords: Aero gas turbine engine, Digital Electronic Control Unit (DECU), Online Monitoring display, RS232 serial communication.

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Authors: **A. Yasmine Begum, G.V.Venkata Marutheswar, K.Ayyappa Swamy**

Paper Title: **Tuning of PID Controller for superheated Steam Temperature System using Modified Zeigler-Nichols Tuning Algorithm**

Abstract: This paper explains the tuning of superheated steam temperature system using Modified Zeigler tuning Algorithm. PID control has a wide range of applications in industrial control. Since many process plants use PID to control the dynamics involved in the process. It has been found possible to set satisfactory controller parameters from less plant information than a complete mathematical model.The fifth order model of super-heated temperature system is converted into first order model with delay using process reaction curve method. The analog PID controller is designed for superheated steam temperature system using Modified Zeigler tuning algorithm and Zeigler Nichols algorithm and results are compared.

Keywords: Criterion of Optimality Tuning Rules, Figures of Merit, Process reaction curve.

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Authors: **Mohammed Saleh Al.Ansari**

	Paper Title:	**The Water Demand Management in the Kingdom of Bahrain**	
	Abstract: Many factors affect the availability and sustainability of the water supply in Bahrain: climate change, water quality, pollution, and the production capacity of new technologies and non-conventional methods. With growing demand due to climate change, booming industrial complexes and population growth, groundwater abstraction is no longer a sustainable water resource on its own and other methods must be put to increasing use. In Bahrain, non-conventional methods such as desalination and treated sewage effluents (TSE) are increasingly used to meet the water demand for agricultural, municipal and industrial purposes. Pollution, seawater intrusion and other issues continue to thwart non-conventional water resource methodologies and services, creating a bottleneck for the water demand. Water conservation methods for managing the water demand seem promising in all sectors and at all levels, including transmission and household level use. **Keywords:** Water Resources, Virtual Water, Desalination **References:** 1. Basheer et al, "Country Paper about Bahrain, Development of Water Resources", UNEP, 2001. 2. Economic Overview, Kingdom Of Bahrain, http://www.gulfbase.com/site/interface/thegcc/ bahrain/economy.html 3. Electricity and Water Authority, "Electricity and Water 15 Year master Plan 2006 – 2020", Final Report and Volumes 1-7, Kingdom of Bahrain, September 2006 4. Presentation. Water Conservation: Optional or Obligatory? 5. Bingham, Anne. Demand management gains importance as water supply runs low. Water Resource Management, February 1995, 14-17.	**544-554**
116.	**Authors:**	**Manju Pillai, Pramila Adavi**	
	Paper Title:	**Electronic Contract Management**	
	Abstract: The world today is moving on to paperless process to reduce manual intervention and come up with a flawless system. Contract management is an important issue in construction industry. Managing contracts in construction organization is cumbersome due to multiple stakeholders being involved in the process, Hence the need for managing the contracts in a systematic and organized manner. Electronic Contract Management forms an aid to managing multiple contracts in a construction organization. Electronic contract management is a system having constant process of ensuring that a contract is well structured and reviewed appropriately. This system will streamline the business process by reducing the time taken to create, review, execute, and approve contracts. This in turn would ease activities like tracking, central storage of contract documents, and reduction in disputes. Electronic contract management would thus minimize risks associated with manual data entry. Key objectives of electronic contract management are 1. Ensure easy access to contract information 2. Improvised Contract workflow 3. Flawless billing system This paper illustrates more on Electronic contract management which automates and simplifies the lifecycle process associated with creating and managing the contracts or legally binding agreements. **Keywords:** Electronic contract management, Contract management process, Contract change process. **References:** 1. The Chartered institute of Purchasing and Supply 'Contract Management Guide' 2. International Association of Contract and Commercial Managers (IACCM) 3. FIDIC Website 4. Australian Government 'Public Private Contract Management' 5. Chang, A. and Ibbs, C. (1998). "On-Call Contracting Strategy and Management." J. Manage. Eng.,14(4), 35–44, TECHNICAL PAPERS. Journal of management in engineering, Volume 14, Issue 4 (July 1998) 6. Cheung, S., Yiu, K., and Chim, P. (2006). "How Relational are Construction Contracts?" J. Prof. Issues Eng. Educ. Pract., 132(1), 48–56.Legal affairs section. Journal of Professional issues in engineering education and practice,Volume 132, Issue 1 (Jan 2006) 7. Shumway, R., Richard, A., and Ritti, J. (2004). "New Trends and Bad Results in Construction Contracts, Part I." Leadership Manage. Eng., 4(3), 93–98. 8. Thomas, H., Smith, G., and Wright, D. (1990). "Resolving Disputes over Contract Notice Requirements." J. Constr. Eng. Manage.,116(4), 738–755.	**555-557**
117.	**Authors:**	**Sunil Gupta, Harsh K Verma, A L Sangal**	
	Paper Title:	**Security Attacks & Prerequisite for Wireless Sensor Networks**	
	Abstract: Due to encroachment of software and hardware developed and its technology a feasible network can be composed of small, inexpensive sensor with several attributes. Security is one of major concern for wireless sensor networks (WSN) because of lots of their critical applications. This paper describes the security attacks and its prerequisite and vulnerability for processing and collecting the information in WSN. **Keywords:** security attacks, wireless sensor network, requirements and vulnerabilities. **References:** 1. R. Di Pietro et al. / Ad Hoc Networks 1 (2003) 455–468 459• Backward secrecy. Given that an adversary managed to recover a contiguous subset of session keys, no previous session keys can be recovered. 2. D.Wood and J. A. Stankovic, ―Denial of service in sensor networks,‖ Computer, vol. 35, no. 10, pp. 54–62, 2002. 3. F. Akyildiz et al., ―A Survey on Sensor Setworks,‖ IEEE Commun. Mag., vol. 40, no. 8, Aug. 2002, pp. 102–114. 4. Y. Wang, G. Attebury, and B. Ramamurthy, ―A Survey of Security Issues in Wireless Sensor Networks,‖ IEEE Commun. Surveys Tutorials, vol. 8, pp. 2–23, year 2006. 5. L. Eschenauer and V.D. Gligor, ―A key-management scheme for distributed sensor networks‖, In Proceedings of the 9th ACM	**558-566**

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Authors:	**Ganesan. V, Aruna Devi. J, Astalakshmi. A, Nima. P., Thangaraja. A**
Paper Title:	**Eco- Friendly Synthesis of Silver Nanoparticles using a Sea Weed, Kappaphycus Alvarezii (Doty) Doty ex P.C.Silva**

Abstract: The present study is aimed to investigate the ability of Kappaphycus alverazii to reduce silver nitrate into silver nanoparticles. The sea weed, Kappaphycus alverazii was collected from the coasts of Rameswaram, Ramanathapuram district of Tamil Nadu, India. The sea weed broth was prepared and resuspended in an aqueous solution of 1mM silver nitrate in 250ml Erlenmeyer flask. This mixture is known as reaction medium. The reduction of silver nitrate into silver nanoparticles in the reaction medium was monitored by keeping it in an incubator cum shaker with 250 rpm at 27°C for 96hours. From this reaction medium, a small aliquot of the sample was used for the characterization of silver nanoparticles through UV-Visible spectroscopic analysis, Fourier Transform Infrared (FTIR) spectral analysis, X-Ray diffraction (XRD) analysis, Scanning Electron Microscopic (SEM) and Energy Dispersive X-ray (EDX) analyses. The time dependant spectral analysis provides the evidence of synthesis of nanoparticles. The FTIR analysis explains the stability of silver nanoparticles that are synthesized by the sea weed. The XRD analysis gives the structural information of nanoparticles. The SEM and EDX analyses confirmed the synthesis of nanoparticles. Thus eco-friendly synthesis of silver nanoparticles is achieved using the sea weed, Kappaphycus alverazii, as there is no involvement of toxic chemicals as reducing agents in this biological synthesis.

Keywords: Kappaphycus alverazii, silver nanoparticles, eco-friendly synthesis, sea weed broth, reaction medium.

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Authors:	**Arshi Salamat**	
Paper Title:	**Measurement of Power Frequency Deviation using 8085 Micro Processor**	

Abstract: Measurement of power frequency deviation is important for the design of power system equipments. An electric power system is required to operate at a constant frequency but because of randomly varying power demands the system line frequency tends to deviate from its nominal value. This paper has suggested a monitoring scheme using a 90 0 phase shifter. The shifted and normal frequency signals are combined through EX-OR gate. Deviation of power frequency from nominal value gives a difference in the pulse counts of two successive pulses occur which will be proportional to amount of deviated frequency. This method provides high resolution .Also it is simple and cheaper as compare to other methods. The scheme is implemented using 8085 micro processor and program in assembly language has been developed.

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Keywords: comparator, Deviation, Phase shifter, register

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120.	**Authors:**	**Arshi Salamat**	
	Paper Title:	**Applications of Matlab in Control System Design**	
	Abstract: This paper present basic idea of MATLAB Programming used to solve control engineering problems. MATLAB is not limited to any engineering field. It finds its applications in almost all engineering discipline i.e. chemical, mechanical, environmental, civil etc. MATLAB is an interactive system whose basic data element is matrix. This paper is suitable for the beginners to learn about MATLAB. **Keywords:** MATLAB, Control systems, Matrix **References:** 1. www.google.com 2. Modern control Egg., K.Ogata 3. Math works.Inc, MATLAB User's guide.,1990	**567-567**