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1.

Authors: Shaik Abdul Khader Jeelani, Adel S. Al-Dosary, J.Karthikeyan

Paper Title: Empirical Evaluation of Performance of Construction Management At-Risk (CM at -Risk) Project Delivery System With and Without Agency-CM

Abstract: A project delivery system is a comprehensive process of assigning the contractual responsibilities for designing and constructing a project. Design-Bid-Build (D-B-B), Design-Build (D-B), and Construction Management at risk (CM- at - Risk) are the three principal project delivery systems. Agency CM is as a construction management system, and is a way to manage the process of construction.

Agency-CM doesn't take any performance risk in guaranteeing project cost, project schedule and project quality. Generally Agency CM is remunerated on monthly fee/ lump sum fee or by the percentage of the project cost that has conflict of interest with the final project schedule and final project cost. Considerable amount of fee is paid to the Agency CM in order to improve the efficiency of the project. This necessitates a comprehensive investigation in to the performance of projects delivered with Agency CM and projects delivered without Agency CM.

Agency-CM can be used with any type of Project Delivery system. This paper presents the evaluation of the project performance metrics such as Project Cost, Project Schedule and Project quality where CM –at - Risk Project Delivery System was used with Agency CM and without Agency CM. It compared the Cost Growth, Time Growth, and quality performance of 200 CM-at-Risk projects of which 100 projects where Agency CM was used and 100 projects where Agency CM was not used. Analysis of data pertaining to project performance metrics was done by using SPSS statistical software.

An understanding of this study may help an owner/client better select the suitable CM-at-Risk Project Delivery System either with or without Agency Construction Management.

Keywords: Agency Construction Management, Project Delivery Systems, CM-at-Risk with Agency CM, Project performance metrics, CM-at-Risk without Agency CM, Construction Projects, Design-Build, Design-Bid-Build

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2.

Authors: **R.Ramachandran, J. Thomas Joseph Prakash**

Paper Title: **Designing Of Reconfigurable MPNOC On FPGA For Processing The Wireless Sensor Networks**

Abstract: Designing of system on chip with the current algorithm and design methodology cannot meet the requirements of accommodating billion-transistor area in VLSI technology. There is a need of plat form based design and computing system design. It is to implement FPGA based reconfigurable Multiple Processor Network on Chip (MPNOC) which consists of Multiple Processing Units (MPUs),Communication controller (CC) and Memory Units (MU). The processing units are System on Chips; they are communicated each and other or connected with Routers. In this work NoC designed for processing the signals of wireless sensor networks, such as GPS, RF sensor, RFID, and Zigbee outputs. The proposed System was thus designed and simulated in ALTERA IDE's platform. In this work, the SOPC Builder component editor has been used to configure the node elements and to create Custom network interface component. In order to implement the designed Noc in FPGA chip, Altera Quartus II CAD tool was used, which compiles HDL written for configuring NoC , also generates RTL View and timing analyzer for the main components.

Keywords: MPNoC, SoC, reconfigurable Network on Chip, Wireless system, WSN

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3.

Authors: Tushar Gupta, Sonam Sharma, Himja Bhardwaj, Pardeshi Rushikesh

Paper Title: SIM Card Based Smart Banking Using FPGA

Abstract: Automated teller machines (ATMs) are well known devices typically used by individuals to carry out a variety of personal and business financial transactions and/or banking functions. ATMs have become very popular with the general public for their availability and general user friendliness. ATMs are now found in many locations having a regular or high volume of consumer traffic. For example, ATMs are typically found in restaurants, supermarkets, Convenience stores, malls, schools, gas stations, hotels, work locations, banking centers, airports, entertainment establishments, transportation facilities and a myriad of other locations. ATMs are typically available to consumers on a continuous basis such that consumers have the ability to carryout their ATM financial transactions and/or banking functions at any time of the day and on any day of the week..

Keywords: ATMs, ATM.

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4.

Authors: Prijith.M, M.S.P.Subathra, Senraj

Paper Title: Single Stage Switching Power Supply With Half Bridge Toplogy Simulation for LED Lamp Driver

Abstract: Single stage switching power supply with half bridge topology simulation for LED lamp Driver is presented in this paper.LED lamp driver needs only dc supply. In this paper dc supply is obtained as output while giving ac input voltage of 110V. It is formed by combination of ac/dc converter and dc/dc post regulator. Compared

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to other switching power supply this reduces cost ,size and simplifies circuit design. It increases efficiency and output voltage can be controlled. The simulation of single stage switching power supply using half bridge topology using Psim software is done and output voltage and power are verified .by using this get an output voltage of 48 V dc output and power range up to 120 W ,and efficiency is above .89 . It is used in LED lamp drivers and piezoelectric element drivers.

Keywords: stage switching power supply, half bridge topology

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Authors:	**M.Sharanya, B.Basavaraja , M.Sasikala**
Paper Title:	**An Overview of Dynamic Voltage Restorer for Voltage Profile Improvement**

Abstract: The use of sensitive electronic equipment has increased now a days which has lead to power quality problems. The various power quality disturbances are transients, interruptions, voltage sag, voltage swell, voltage collapse, harmonics etc. To solve these power quality problems various custom power devices are used. Dynamic voltage restorer (DVR) is a custom power device used for the Compensation of voltage sag and swell. In this paper an overview of DVR, its components, functions, compensating strategies and control methods are reviewed in detail and the compensating strategies are compared.

Keywords: Power quality, Dynamic voltage restorer, compensating strategies, control methods.

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6.

Authors: **Aashoo Bais, Kavita Deshmukh, Manish Shrivastava**

Paper Title: **Implementation of Decision Tree**

Abstract: Data mining is rich field of algorithms and data structures to arrange negotiate and navigate the information from the different source of data. There are various kind of mining approaches are developed and implemented to get the knowledge from the raw data. The application of this knowledge is used to enhance the research, organizational growth and others.
The data and its complexity is increases day by day in an explosive manner, and due to these complexity there are is a need to discover patterns and knowledge from the large data set. The conventional algorithm that are used to mine the patterns from data are becomes less effective due to the complexity of data. Due to this required to introduce some performance study and improvements over the conventional model to get efficient and effective data modeling technique.
In this paper we introduce a modification over the traditional algorithm ID3 and C4.5 to make capable the algorithms to work with large dataset with higher performance. Here we provide the implementation, performance analysis and conclusion after implementation of the work.

Keywords: data mining, modification, large datasets, performance issues, implementation, performance analysis.

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7.

Authors: **Manaj Dandapathak, Bishnu Charan Sarkar**

Paper Title: **Studies on the Dynamics of a Second Order PLL in the face of Two Input Signals**

Abstract: The Dynamics of a second order Phase locked loop (PLL) has been critically examined in the face of two co-channel input signals. Applying the analytical tool based on Melnikov's technique, a range of design parameters of the Phase locked loop has been obtained which ensures the stable loop dynamics. It is observed that the said range depends on the relative amplitude and frequency of the input signals. The analytical predictions are verified through numerical simulation results of the system equations.

Keywords: Phase locked loop, Melnikov's function, Voltage control oscillator.

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8.

Authors: **K S Jagadeesh, Chandramouli.H, Naveen Ghorpade**

	Paper Title:	**Design of Multimedia Application for Fast and Efficient Text Input from Touch Screen Input Devices using Character Recognition**	
	Abstract: We are wasting a lot of our time texting and typing messages through mobile's and keyboards, so we have come up with software which can recognize the set of character u scribble on the screen and make it visible in the normal times new roman format. This would save lot of our time as we write or scribble faster than typing through other input devices and more efficient user interface is also achieved. Character recognition is a task of determining handwritten characters /digits. This is done by having some of the sample sets of characters written by numerous people. The task entails matching the handwritten characters with characters in the sample set and determining the character in the sample set which best matches the Test Character. The aim of the second step of the recognition structure is to extract discriminant information from an image of a character, as well as to reduce its dimensions of representation. This reduction is required in order to make easier the conception of the classification system, when discriminant feature extraction allows to present competently a character to the classifier. This paper envisages using a number of benchmark datasets to carry out the task. The first step is a feature extraction. Features such as shape, orientation, outline, character frontiers etc, have to be extracted from the character image. The features are then used for the pattern classification task. The output gives the class to which the character belongs. The results obtained using neural networks was compared with other methods of classification for character recognition and classification provides highest accuracy of 96%. **Keywords:** Feature extraction, transducer, Character Recognition, Pattern Recognition. **References:** 1. E.Cohen, J.J.Hull, and S.N.Srihari. "Control Structure for interpreting handwritten Address" IEEE Transactions. 2. E.Cohen, J.J.Hull, and S.N.Srihari. "Understanding Handwritten Text in a Structured Environment" Proceedings of IEEE. 3. J.C.Simon O.Barat and N.Gorski."A System for Recognition of Handwritten" International Conference on Document Analysis System. 4. G.Kim and V.Govindaraju. "Bank check Recognition Using Cross Validation between Legal and Courtesy Amount" Automatic Bank check Processing, World Scientific pages. 5. S.N.Srihari, Y.C.Shin, V.Ramprasad and D.S.Lee. "Name and Address Block Reader" Proceedings of IEEE.	**39-42**
9.	**Authors:**	**Phani Madhav Yannam, P.V.Jayasri, K.Rameshbabu, Suraj Bharath.Chada**	
	Paper Title:	**Estimation of Doppler Centroid Frequency Using SAR Imaging Geometry for RISAT-2**	
	Abstract: Synthetic Aperture Radar (SAR) is an active microwave sensor which uses coherent imaging techniques to produce high-resolution images of the ground. One of the essential part of SAR Data Processing is the estimation of the Doppler parameters of the received data i.e., Doppler centroid frequency, Fdc. The methodology involves sequence of coordinate rotations and translations to get the radar beam's "view vector" into ECI coordinates. With satellite and target positions and velocities expressed in the same coordinate system, the velocities are projected along the beam vector to find the relative velocity, and then calculate Doppler centroid frequency. The orbit of RISAT-2 is low inclination non-polar, non-sun synchronous orbit and the image data format is different. So, in order to implement the procedure for RISAT-2, the satellite attitude i.e., yaw and pitch are derived from squint angle available in Auxiliary file to arrive at the slant range from the target. A module to calculate the satellite hour angle for both ascending and descending pass has been successfully implemented and integrated into the algorithm which is critical in calculating Fdc. **Keywords:** SAR, SAR Geometry, Doppler Centroid Frequency (Fdc), Imaging Range, RISAT-2 **References:** 1. G. Cummings, Frank H. Wong. Details of the Doppler Calculations, Digital Processing of Synthetic Aperture Radar, pp. 553-560. 2. W. L. Nelson and W. J. Cole, Autotrack Control Systems for Antenna Mounts with Non-Orthogonal Axes, The Bell System Technical Journal, September 1965, pp.1394-1397. 3. I. G. Cumming. Model- Based Doppler Estimation for Frame-Based SAR Processing. IN Proc. Int. Geoscience and Remote Sensing Symp., IGARSS'01, Vol. 6, pp. 2645-2647, Sydney Australia, July 2001 4. I. M. Yaglom and A. shields. Geometric Transformations. The Mathematical Association of America, 1962 5. C. Caffario, P. Guccione and A. Monti Gaurnieri. Doppler Centroid Estimation for ScanSAR Data. IEEE Trans. on Geoscience and Remote Sensing, 42(1), pp. 14-23, January 2004. 6. Lozier, J. C., Norton, J. A., and Iwama, M., The Servo System for Antenna Positioning, B.S.T.J. 42, July 1963, pp. 1253-1281 7. G. Cummings, Frank H. Wong. Digital Processing of Synthetic Aperture Radar. 8. http://www.asc-csa.gc.ca.	**43-51**
10.	**Authors:**	**Atul Kamble, Prasad Kadam, Hardik Bhangale**	
	Paper Title:	**A Survey on CIMDS: Adapting Post Processing Techniques of Associative Classification for Malware Detection**	
	Abstract: The Malware is program/software that damages or affects the computer system. Nowadays all the fields are computerized. So the valuable data is stored in computer. If the malware attacks on system then there may be chances of loss of data. Therefore it is very essential to provide security to system from Malware. A file that needs to be analyzed is called as Gray list. Along with Malware writing technique the number of gray list is increasing in large scale. In previous work IMDS (Intelligent Malware Detection System) had develop for malware detection. This system is based on analysis of API (Application Programming Interface) calls. But IMDS faces the two problems 1] Handling large set of generated rules to build classifier. 2] Finding the effective rules for classifying new file samples. In this paper we describe post processing techniques that are 1] Rule Pruning 2] Rule Ranking 3] Rule Selection. Then number of classification rule evaluation measures is considered. Here number of selection technique is used to order classification rule contained in classifier. This system is known as CIDCPF for malware detection. According to our knowledge this is first effort that uses post processing technique. It includes chi square, insignificant rule pruning. Then database coverage based upon chi square measure Rule Ranking mechanism is	**52-54**

applied. Finally Performance Prediction is done by using Best First Rule.
From the experiment it is observed the promising result is obtained on gray list. As compared to other Anti viruses like McAfee, Virus scan, Norton this system gives best result. This indicates that the CIMDS system is more efficient and accurate for Malware detection. This system is data mining base detection system. In particular CIMDS system can greatly reduce the number of generated rules. This makes it easy for virus analyst to identify the useful ones.

Keywords: Malware, Association Classification, Antivirus, Rule Pruning, Rule Ranking, Rule Selection.

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11.

Authors: **N.Dhanasekar, Dr.R.Kayalvizhi**

Paper Title: **Performance Evaluation of PI controller for Negative Output Triple Lift Luo Converter**

Abstract:
The object of this paper is to design and analyze a Proportional – Integral (PI) control for negative output triple lift Luo converter (NOTLLC),which is the start- of –art-the DC-DC converter. The negative output triple lift Luo converter performs the voltage conversion from positive source voltage to Negative load voltage. In order to improve the dynamic performances of NOTLLC for both static and dynamic specifications, we propose a PI controller. The simulation model of the negative output triple lift Luo converter with its control circuit is implemented in Matlab/Simulink. The PI control for negative output triple lift Luo converter is tested for transient region, line changes, and load changes.

Keywords: DC-DC converter, Matlab, Negative output triple lift luo converter, Proportional Integral control simulink.

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12.

Authors: **Noha Kamal, Sherine S. Ismail, Hala Abd ElKader and Mohamed Sharaf**

Paper Title: **Telemetry Over SMS-Based GSM Wireless Communication System**

Abstract: this study was performed to implement a modern wireless communication system for data collection and communication by using GSM Communication Network as a platform based on SMS. The system depends on EasyPIC5 microcontroller development board as a modern digital communication system together with a smartg100 (GSM) development boards; both development boards are developed and manufactured by mikroElektronika.
This system is used to measure the water level in a field, and implement telemetry over wireless communication network system which Present a solution for irrigation system as an application. In this research a Pressure Sensor (E-Tape Million Pressure sensor) and handmade sensor are used to measure water level value, and calibrating the results. Water level measurement system includes a control center (Base station), a GSM modems, and a telemetry unit (Sub Station), on the other hand the author developed friendly user interface for the wireless telemetry by means of Visual Basic which connect the base station with substations, and create a data base to save a historical data of measured water level. In this Research the author developed an alarm system by using buzzer and flashing leds to warn if there are any errors at any station. Compared to other telemetry systems, in this system the measured data does not sent continuously but it is only sent when the data value is changed, so it provides a minimum size of data reserved in the room service and reduce the cost, on the other hand the other systems send measured data continuously so it reserve the channel all the time and increase the cost. On the other hand in this system we have two way actions, and alarm system which determine the error, where, and how to fix.

Keywords: Telemetry, GSM Communication Network, Easypic5, SmartG100

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13.

Authors: Prasaanth.N, Parish Vyas, Rahul Tolani, Sandhya Pati

Paper Title: Advanced Aid for Visually Impaired for Reading Text Online

Abstract: The tremendous growth in technology in today's world has made it feasible to provide the visually impaired with means that enable them to use the computer and all associated technologies like the internet for the same functions as others do. The Human Computer Interaction (HCI) aspects involved in making a computing device available to a visually impaired person differ largely from that for a normal person using a computer. This paper provides detailed information about a developed application which would enable and facilitate the visually impaired in connecting to the e-world. Our paper is an advanced and extensive description of this application that allows them to read websites online through the conversion of text to Braille language. This application has a special feature of voice commands through which user can give input in the form of speech as well as obtain the output in the form of speech. A previous paper on the same is the technical description of the previously developed system. This paper is a proposed and advanced model of the developed system highlighting its flaws and deficiencies and suggesting comprehensive changes and how to implement the same in the application design and construction of the original application.

Keywords: Braille, Computer Applications, Human Computer Interaction, Voice Commands.

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14.

Authors: **Shafii Abdullah, Nor Hayati Abdul Hamid**

Paper Title: **Modelling of Turbine-generator and Foundation as Single Degree of Freedom Using Ruaumoko Programme**

Abstract: A rigid-moment frame supporting the turbine-generator was designed according to BS 8110. This structure is subjected to vibrations of turbine-generators and seismic loading. Turbine-generator with its foundation is model as a single degree of freedom (SDOF) using RUAUMOKO program. RUAUMOKO program is employed in this study to analysis non-linear dynamic behaviour of turbine foundation using time-history analysis and Modified Takeda Model. Mode shape, natural period, natural frequency, nodal displacement, member forces and moment of reinforced concrete turbine foundation were obtained by running this program. The result shows that turbine foundation under Imperial Valley earthquakes does not exceed yield drift limit for monolithic connection and remain within the elastic condition. Thus, RC turbine foundation is safe and able to carry gravity load as designed according to BS 8110. Contradictory, turbine foundation experience exceeding yield drift limit but it is not safe and likely to collapse under San Fernando earthquake loading.

Keywords: turbine-generator, turbine foundation,non-linear dynamic analysis, time-history analysis, yield drift limit.

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15.

Authors: **Md. Sadak Ali Khan, A.Suresh, N.Seetha Ramaiah**

Paper Title: **Analysis of Magneto Rheological Fluid Damper with Various Piston Profiles**

Abstract: Control of seismic, medical and automobile vibrations represents a vast area of research that is growing rapidly. Magneto rheological (MR) dampers are a new class of devices that match well with the requirements and constraints of applications, including the necessity of having very low power requirements. The performance of MR

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damper depends on its magnetic and hydraulic circuit design. In this paper a finite element model is used to examine and investigate the 2- D axi-symmetric MR damper. Nine different configurations of piston for MR damper are simulated in order to investigate how the profile of the piston affected the maximum pressure drop that the damper could provide. The piston velocity and the input current to the coil are varied to evaluate the resulting change in magnetic flux density (B) and pressure drop (ΔP). The simulation results of the different configuration of piston show that the performance of single coil with filleted piston ends was better than that of other configurations for the same magnitude of input current and piston velocity.

Keywords: Magneto-rheological (MR) fluid, MR damper, Magnetic flux density, magnetic field intensity.

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16.

Authors:	**Manisha Sharma, Vandana Chouhan**
Paper Title:	**Objective Evaluation Parameters of Image Segmentation Algorithms**

Abstract: Image segmentation is the process of partitioning an image into multiple segments, so as to change the representation of an image into something that is more meaningful and easier to analyze. Several general-purpose algorithms and techniques have been developed for image segmentation. However ,evaluation of segmentation algorithms thus far has been largely subjective , leaving a system designer to judge the effectiveness of a technique based only on intuition and results in the form of few example segmented images .This is largely due to image segmentation being a ill defined problem-there is no unique ground truth segmentation of an image against which the output of an algorithm may be compared .There is a need for researchers to know on what parameters there suggested techniques can be evaluated .In this paper we have surveyed 100 papers to present various evaluation parameters. This paper presents 13 performance evaluation parameters that can be used to perform a quantitative comparison between image segmentation.

Keywords: Segmentation, MRI.

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Authors:	**Manoj Singhal**	
Paper Title:	**Binary Decision Diagram based Reliability Evaluation**	

Abstract: In this paper, I have considered a computer communication network which has perfect vertices and imperfect links. It means communication links may fail with known probability. I have found the reliability of the given network by using an exact method (inclusion-exclusion formula) and with binary decision diagram. I have found that the reliability obtained by both the method is same. Binary decision diagram based reliability evaluation involves three main steps. First ordering the given communication link by applying a heuristic approach. I have proposed a heuristic approach to generate the minimum size binary decision diagram. Second generate the reliability function with the help of min-paths from source to sink. At last apply Shannon's decomposition to compute the reliability of the given network.

Keywords: Binary Decision Diagrams (BDD), Directed Acyclic Graph (DAG), Computer communication Network (CNN), Modified Binary Decision Diagram (MBDD), Ordered Binary Decision Diagram (OBDD), Dual Binary Decision Diagram (DBDD).

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Authors:	**Nikhil Talele, Ajinkya Shukla, Sumant Bhat**
Paper Title:	**Can Quantum Computers Replace the Classical Computer?**

Abstract: The first computer originated as an ordinary calculator in 19th century. Subsequently, the rapid evolution of computers began. The massive amount of processing power generated by computer manufacturers has always failed to quench the thirst for speed and computing capacity. If, as Moore's Law states, the number of transistors on a microprocessor continues to double every 18 months, then soon we will find the circuits on a microprocessor being measured on an atomic scale. Today's advanced lithographic techniques can squeeze fraction of micron wide logic gates and wires onto the surface of silicon chips. Thus it can be seen that very soon we will be facing the need to create quantum computers which can harness the power of atoms and molecules to perform memory and processing tasks. Quantum computers have the potential to perform calculations a billion times faster than any silicon-based computer. Also, theories suggest that every physical object, even the universe, is in some sense a quantum computer. If this is the case, then according to Turing's work which says that all computers are functionally equivalent; computers should be able to model every physical process. Scientists have already built basic quantum computers that can perform certain calculations; but a practical quantum computer is still years away. In this paper, we will be discussing about the history, development and the future scope of quantum computing. The pros and cons of this future technology have also been compared and our analysis has been put forth.

Keywords: Quantum Computing, history, current trends, advantages, disadvantages, applications, future scope.

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15. "Will Computers Take A Quantum Leap?", Seth Lloyd

19.

Authors:	**N. Janardhan, P.Ushasri, M.V.S. Murali Krishna, P.V.K.Murthy**
Paper Title:	**Performance of Biodiesel in Low Heat Rejection Diesel Engine with Catalytic Converter**

Abstract: Investigations were carried out to evaluate the performance of a low heat rejection (LHR) diesel engine consisting of air gap insulated piston with 3-mm air gap, with superni (an alloy of nickel) crown and air gap insulated liner with superni insert with different operating conditions of jatropha oil based bio-diesel with varied injection timing and injection pressure. Performance parameters were determined at various values of brake mean effective pressure (BMEP) of the engine. The effect of void ratio, temperature of catalyst, space velocity on the reduction of oxides of nitrogen (NOx) in the exhaust of the engines was studied. Exhaust emissions of smoke and oxides of nitrogen (NOx) were determined at various values of BMEP. The emission levels of NOx in LHR engine were controlled by means of the selective catalytic reduction technique using lanthanum ion exchanged zeolite (catalyst-A) and urea infused lanthanum ion exchanged zeolite (catalyst-B) with different versions of the engine at peak load operation of the engine. Conventional engine (CE) showed deteriorated performance, while LHR engine showed improved performance with bio-diesel at recommended injection timing of 27obTDC (before top dead centre) and pressure of 190 bar. The performance of both version of the engine improved with advanced injection timing and higher injection pressure when compared with CE with pure diesel operation. Peak brake thermal efficiency

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increased by 10%, smoke levels decreased by 15% and NOx levels increased by 41% with vegetable oil operation on LHR engine at its optimum injection timing, when compared with pure diesel operation on CE at 27obTDC and 190 bar. NOx emissions reduced by 40-50% by this technique with catalyst-A and catalyst-B.

Keywords: Alternate fuels, Brake thermal efficiency, Catalytic reduction, Exhaust gas temperature.

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20.	**Authors:**	**E. Suresh Kumar, Bijan Sarkar**
	Paper Title:	**Proportional Hazards Modeling of Environmental Impacts on Reliability of Photovoltaic Modules**

Abstract: The effect of operational environment on the reliability performance of solar photovoltaic module can be analysed . The first step is to identify which factors have the most significant influence on the reliability performance of photovoltaic modules and systems and how large is the effect. The available information about the

operating conditions of the PV modules can be uniformly formulated based on two alternatives , good/desired (+1) and bad/undesired (-1) conditions. With respect to reliability, the available method PHM (Proportional Hazards Model) can be used for predicting the effect of environment on the system reliability. The reliability characteristics of PV modules can be influenced by environmental conditions such as temperature , snow, wind etc and these influences therefore need to be seriously considered in the prediction of reliability in the design phase. The conventional reliability equation deals with over a time interval and is a measure of the probability for failure-free operation during the given interval, i.e., it is a measure of success for a failure free operation. It is often expressed as $R(t) = \exp(-t/MTBF) = \exp(-\lambda t)$, where MTBF is the Mean Time Between Failure and λ is the failure rate, which is the reciprocal of MTBF. In this paper an attempt is made to modify the time equation of reliability with incorporating environmental impacts like temperature, wind and snow.

Keywords: Mean Time Between Failures, Failure rate, Weibull distribution, Proportional Hazards Model, Time to failure (TTF) Ttime between failures (TBF).

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21.

Authors:	**K. Vsn Raghu Babu, T. Ravi**
Paper Title:	**Threats and Countermeasures in GSM Networks**

Abstract: Mobile networks not only provide great benefits to their users but they also introduce inherent securityissues. With respect to security, the emerging risks of denialof service (DOS) attacks will evolve into a critical danger asthe availability of mobile networks becomes more and moreimportant for the modern information society. This paperoutlines a critical flaw in GSM networks which opens theavenue for distributed denial of service attacks. We proposea way to mitigate the attacks by adding minimalauthentication to the GSM channel assignment protocol.

Keywords: security, denial of service, attack, wireless networks, GSM, GPRS, 2G, DREAD

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22.

Authors:	**S.Ashwin, S.Aravind Kumar, S.Arun Kumar**
Paper Title:	**Soft Computing Techniques Based Computer Aided System for Efficient Lung Nodule Detection – A Survey**

Abstract: Early detection and treatment of lung cancer can significantly advance the survival rate of patient. However, this is a challenging problem due to structure of cancer cells. Lung cancer detection, classification, scoring and grading of histopathological images is the standard clinical practice for the diagnosis and prognosis of lung cancer. It is a very complex and time-consuming duty for a pathologist to manually perform these tasks. Robust and

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efficient computer aided systems are therefore indispensible for automatic lung cancer detection. The delineation of anatomical structures and other regions of interest is a key component in CAD systems. This is achieved through soft computing techniques which automatically and accurately highlight potential actionable lung nodules and rapidly compute measurements of detected regions. Soft computing systems like neural networks and fuzzy systems are valuable in lung cancer screening to improve sensitivity of pulmonary nodule detection beyond double reading, at a low false-positive rate when excluding small nodules. Several pilot studies have shown that these CAD modules can successfully locate overlooked pulmonary nodules and serve as a powerful tool for diagnostic quality assurance. This paper reviews the literature pertaining to the different types of novel neural network and fuzzy based automated CAD systems for robust lung nodule detection. Furthermore, prevailing research trends and challenges are acknowledged and guidelines for future research are discussed.

Keywords: Computer Aided Detection (CAD), fuzzy, Lung Nodule, neural network, sensitivity

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23.

Authors: Sachin Jadhav, Shrikant Ganmukhe, Sanket Badwe, Bhushan Bhavsar

Paper Title: Automation of Screen-Shot Analysis for Anti-Virus Toaster Windows

Abstract: There are many antivirus products available in market. They provide different type of security levels to the user's data. For their own improvement they need to compare their product with their competitors to know the difference of security levels detected for the same type malware. To do such comparisons, the companies need to analyse the actions taken by the antivirus with toaster window displayed on desktop and hence they need to compare a large number of screen-shots of those actions. This project is used for automation of all these process to provide effective and better way of screen shot analysis by extracting text from them. Hence, the purpose of this project is to analyse and classify the actions taken by an antivirus for particular malware with the help of screen shots of those actions. It reduces the manual efforts and provides an automated way recognizing the activities done by an antivirus.

Keywords: This project is used for automation of all these process to provide effective and better way of screen shot analysis by extracting text from them.

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24.	**Authors:** Pradip P.Patel,Sameena Zafar **Paper Title:** Miniaturized Compact Monopole Antenna for Multiband Applications **Abstract:** Modern telecommunication system require antenna with wider bandwidth and smaller dimensions. Various antennas for wide band operation have been studied for communication and radar system. The fractal antenna is preferred due to small size, light weight and easy installation. A fractal micro strip antenna is used for multiband application in this project provides a simple and efficient method for obtaining the compactness. A sierpinski carpet based fractal antenna is designed for multiband applications. It should be in compactness and less weight is the major point for designing an antenna. This antenna is providing better efficiency. **Keywords:** component; Sierpinski gasket, fractal, multiband antenna **References:** 1. Pramendra Tilanthe and P. C. Sharma, "Design of a single layer multiband microstrip square ring antenna" IEEE explore-www.ieee.org, Applied Electromagnetic Conference (AEMC), year: 2009, PP: 1– 4. 2. Duixian Liu and Brian Gaucher, "A New multiband Antenna for WLAN/Cellular Applications", Vehicular Technology Conference, 2004;VTC2004-Fall; IEEE 60th, Year: 2004, Vol: 1, PP: 243 – 246. 3. C. Puente, J. Romeu, R. Pous, A. Cardama, "On the behavior of the Sierpinski multiband antenna,"IEEE Trans. Antennas Propagat., vol. 46, pp. 517-524, Apr. 1998 4. D. H. Werner, S. Ganguly, "An overview of Fractal Antenna Engineering Research", IEEEAntennas and Propagation Magazine, vol. 45, pp.38-57, 2003. 5. Philip Tang and Parveen Wahid, "Hexagonal Fractal Multiband Antenna," Antennas and Propagation Society International Symposium, IEEE, vol. 4, pp. 554-557, June 2002. 6. Asit K.Panda, Manoj K.Panda, Sudhansu S.Patra "A Compact Multiband Gasket Enable Rectangular Fractal Antenna"IEEE2011 International Conference on Computational Intelligence and Communication Systems. Page(s):11-13 7. B.R.Franciscatto,T.P.Voung and G.Fontgalland "High gain sierpinski gasket fractal shape antenna design for RFID"IEEE2011. 8. J. Anguera; C. Borja; C. Puente, "Microstrip Fractal-Shaped Antennas," A Review, Antennas and Propagation, 2007, EuCAP 2007, The second European Conference on 11-16 Nov. 2007 Page(s):1 – 7	**132-135**
25.	**Authors:** **Vineesh V, A. Immanuel Selvakumar** **Paper Title:** **Design of Micro Hydel Power Plant** **Abstract:** The asynchronous condition of hydro power plant depends upon the speed variation in turbine generator set which is effected by the gate states of hydraulic turbine. This paper deals with the technical feasibility of a small hydropower plant for domestic use (micro-hydro), how it can be implemented in Valara waterfall, Kerala, India. Included within this document is an introduction to micro hydro system, design and simulation of hydraulic turbine and generator and how they apply specifically to power generation. The proposed site has a very large potential for power generation, yet the source of micro hydro energy remain untapped. **Keywords:** Micro hydro power, hydraulic turbine, alternator, rural electrification. **References:** 1. Sakurai.T, Fuanto.H 'Fundamental Characteristics of Test Facility For Micro Hydro electric Power Generation System' IPEMC 2009. 2. Okonkwo, G N, Ezeonu S O "Design and Installation of Mini Hydro Electric Power Plant", Scholar Journal of Engineering Research Vol 1(1), April 2012 3. Chauhan D S, Gagan Singh "Simulation and Modelling of Hydro Power Plant to study Time Response during Different Gate States" International Journal of Advanced Sciences and Technologies Vol 10 Issue No. 1, 42-47 2007 4. Priyano Sutikno, Ibrahim Khalil " Design, Simulation Simulation and Experimental of the Very Low Head Turbine with Minimum Pressure and Free Vortex Criterions', International Journal of Mechanical and Mechatronics Engg IJMME – IJENS Vol 11, 2011 5. Yin Chin Choo, Kashern M Muttaqi, Negnevitsky M 'Modelling of hydraulic governor – turbine for control Stabilization', ANZIAM J 49 (EMAC2007) pp C681-C698, 2009 6. Angus Simpson, Michael Gibbard, John Pheat " Development of an integrated Hydraulic Electrical Model for Hydro Power Plant", Water Power pp1150-1159, 1997 7. Yu, Yao-nan 'Electric Power System Dynamics' Academic Press, New York, 1983 8. Oliver Paish, "Small Hydro Power- Technology and Current Status: Elseiver Journal Renewable and Sustainable Energy Reviews 9. Fraenkal P Paish, O Bokalders V, Harvey A, Brown A, Edward R," Micro Hydel Electric Power Plant- a guide for development workers" IT Publications Ltd. London, 1991 10. Arun Kumar, Verma H K "Performance Testing of Small Hydropower Plant" International Conference on Small Hydro power- Hydro Srilanka 22-24 2007 11. Renata Archetti , 'Microhydro electric power: Feasibility of domestic plant', International Conference on Green Buildings and Sustainable Cities, Elseiver journal Procedia Engineering 21 pp 8-15 2011. 12. Wazed M A, Shamsuddin Ahmed,'Micro Hydro Energy Resources in Bangladesh - A Review', Australian Journal of Basic and Applied Sciences2(4):11209-1222, 2009. 13. CWRDM, "Micro Hydel Scheme at Kakkadampoil- Project report by Centre For Water Resource Development and Management, Calicut.	**136-140**
26.	**Authors:** Deepshikha Kushwaha, Ravikant, Kirandeep Singh, Monika Aggarwal **Paper Title:** Fabrication and Characterization of Pulsed Laser Deposited Lead Free Thin Film Capacitors **Abstract:** The current study explores the dielectric and ferroelectric properties of pulsed laser deposited (Ba1-x,Srx)TiO3, Ba(Zrx,Ti1-x)O3 and [(Ba1-x,Srx), (Zry,Ti1-y)] O3 thin films deposited on LaNiO3 bottom electrode. The crystallographic study of these films done using XRD reveals that these films were crystalline in nature having	**141-144**

(110) preferred orientation. An improved crystallite structure with intense (110) reflection was observed for BSZT/LNO/Si thin film. The atomic force micrographs indicate that BST, BZT and BSZT thin films have different grain distributions and grain sizes and is in consistence with XRD results. The high value of remnant polarization (Pr) and low value of coercive field (Ec) of BSZT thin film shows that it can be used in memory devices. In addition, excellent dielectric properties with high dielectric constant were observed for the BSZT capacitor. A highest tunability of 68% was measured at a frequency of 1 MHz could be achieved for BZST thin film, showing that BSZT would be suitable candidate for tunable devices.

Keywords: Dielectric properties, Pulsed laser deposition, Tunability X-ray diffraction

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27.

Authors: **Pushpendra Kumar, Priyanka Tyagi, Smriti Joshi**

Paper Title: **Introducing Direct Mapping Sorters For Parallel Sorting Algorithms**

Abstract: Sorting is one of the most basic problems of computer science and has been discussed continuously since the evolution of computer science. Several algorithms have been devised and applied and the work is still unfinished. For the parallel computing sorting is of same relevance as for sequential and very primitive problem domain too. Grain size is very important aspect of any parallel algorithm and is decisive in term of complexity. For the sorting problems minimum unit for sorting is two elements, since we apply a swap operation if required, and the two elements are sorted. This is considered to be the single step operation. In this paper we will increase primitive unit to four elements and four elements will be sorted in a single step. By applying this technique we can improve the performance of many parallel algorithms.

Keywords: Parallel sorting; Bitonic; shear sort; Direct mapping.

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28.

Authors:	**K.Krishna Bhavani Siram**
Paper Title:	**Cellular Light-Weight Concrete Blocks as a Replacement of Burnt Clay Bricks**

Abstract: Burnt Clay Brick is the predominant construction material in the country. The CO2 emissions in the brick manufacture process have been acknowledged as a significant factor to global warming. The focus is now more on seeking environmental solutions for greener environment. The usage of Cellular Light-weight Concrete (CLC) blocks gives a prospective solution to building construction industry along with environmental preservation. In this paper, an attempt is made to compare CLC Blocks and Clay Bricks, and recommend a replacement material to red brick in construction industry.

Keywords: CLC Technology, Foam Concrete, CLC Blocks, Cellular Light weight Concrete, Light Weight Bricks.

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29.

Authors:	**Md. Rabiul Islam, T. H. M. Sumon Rashid**
Paper Title:	**Prospects and Potential Analysis of Solar and Biomass Energy at Pabna District, Bangladesh: A Realistic Way to Mitigate District Energy Demand**

Abstract: Energy is one of the major concerns for the developing future of any nation and electricity is the most useful form of energy. Due to facing serious energy shortage, Bangladesh Government tried to give a temporary solution such as quick rental power plant to alleviate the present critical situation which costs more unit price than usual. Currently, Bangladesh power production based on Natural gas (75.99%) suffered by inadequate storage and supply. To make the energy system of the country sustainable, Government and other developing partners of Bangladesh searching alternating source of energy which is mandatory. By Inherently suitable geographic location and as an agricultural country, solar and biogas definitely be the promising renewable energy source of Bangladesh. This paper focuses on the fact that how proper district based investigation on these resources and its proper utilization can help to give an easy realistic solution on the way of sustainable energy security of Bangladesh.

Keywords: Biomass Energy, Bangladesh, Cattle Dung, Rice Husk, Sustainable Energy, Solar Energy.

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30.

Authors:	**Manchineni Vijay Kumar, Suresh Angadi**
Paper Title:	**Study of Uart Transimitter in Microcontroler**

Abstract: UART- Universal Asynchronous Receiver Transmitter, generally it is used for better transmission of serial data that is it either transmit or receives data serially with the help of shift register. It consist frame format, one

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start bit (usually low), 5-8 data bit, one optional parity bit and one stop bit (opposite polarity of start bit). Asynchronous means by using start and stop bit we transmit data, there is no need of sending (PAD) that is ASCII (SYN) for synchronizing transmitter and receiver. It transmits 9600 to 38400bps for transmitting data bit. Whole process of serial transmission is based upon the principle of shift register.

Keywords: UART, RDR, USART, DTE, DCE

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31.

Authors:	Amit.S. Ufade, B.K.Khadse, S.R.Suralkar
Paper Title:	Restoration of Blur Image Using wavelet Based Image Fusion

Abstract: In this paper we describe Transformation domain fusion technique to restore images taken from any camera. Here first comparison of image restoration method is carried out, for this wiener filter and blind de convolution methods are selected ,then to improve the result of restoration image fusion using transformation domain technique i.e. wavelet based image fusion are suggested. The effectiveness of every stage is tabulated and compared using Spatial Frequency Root mean square error and Peak signal to noise ratio.

Keywords: Image restoration; Image fusion; point spread fusion; wavelet ;RMSE;PSNR;SF

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14. Image denoising by supervised adaptive fusion of decomposed images restored using wave atom, curvelet and wavelet transform by Preety D. Swami • Alok Jain Springer-Verlag London Limited 2012, Received: 6 March 2012 / Revised: 23 May 2012 / Accepted: 24 May 2012.

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32.

Authors:	**Preeti, Sandeep Dogra, Rashmi Jain**
Paper Title:	**DC Drives: Microcontroller Based Control**

Abstract: This paper is to present a microcontroller based control for DC drives to effectively control the output when there is sudden change in the input parameters. An assembly language program has been built for the programmable microcontroller which controls the various functions of DC drive. The main objective of control is to get the desired output and keep the motor or drive safe in case of any fault occurred. An eight bit microcontroller has been used for the controller purpose. Introducing a microcontroller based scheme facilitates the new DC drive system to deal with the various changes in the system and helps in maintaining the safe operation of the system.

Keywords: Assembly Language, DC drive, Microcontroller, Speed Control.

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33.

Authors: **Deepika Tewari, Sanjay Kumar Srivastava**

Paper Title: **A Visual Recognition of Static Hand Gestures in Indian Sign Language based on Kohonen Self-Organizing Map Algorithm**

Abstract: Indian Sign Language (ISL) or Indo-Pakistani Sign Language is possibly the prevalent sign language variety in South Asia used by at least several hundred deaf signers. It is different in the phonetics, grammar and syntax from other country's sign languages. Since ISL got standardized only recently, there is very little research work that has happened in ISL recognition. Considering the challenges in ISL gesture recognition, a novel method for recognition of static signs of Indian sign language alphabets and numerals for Human Computer Interaction (HCI) has been proposed in this thesis work. The developed algorithm for the hand gesture recognition system in ISL formulates a vision-based approach, using the Two-Dimensional Discrete Cosine Transform (2D-DCT) for image compression and the Self-Organizing Map (SOM) or Kohonen Self Organizing Feature Map (SOFM) Neural Network for pattern recognition purpose, simulated in MATLAB. To design an efficient and user friendly hand gesture recognition system, a GUI model has been implemented. The main advantage of this algorithm is its high-speed processing capability and low computational requirements, in terms of both speed and memory utilization.

Keywords: Artificial Neural Network, Hand Gesture Recognition, Human Computer Interaction (HCI), Indian Sign Language (ISL), Kohonen Self Organizing Feature Map (SOFM), Two-Dimensional Discrete Cosine Transform (2D-DCT).

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Authors: V.Thiyagarajan, V.Sekar

Paper Title: Modelling Of Photovoltaic Systems for Power Grid Equipped Houses as Partial Lighting System

Abstract: This paper is proposed as a guide for PV programme planners during the process of planning and implementing their projects to make sure that they continue on a sustained basis. This paper details four phases of PV programme planning: the preparation of PV programme, programme design, implementation and monitoring/ evaluation. This should also be used once the programme developer has a clear concept for a feasible plans and should be useful to all the decision-makers in the process of developing programme, may be they are host governments in developing countries, PV programme developers and sponsors, PV producers and suppliers, entrepreneurs, or NGOs. This Paper is deals with preparation for PV programmes, including needs assessment, stakeholder consultation, social context analysis, supply options and national policy considerations and Design of PV programmes, including establishment of goals, delivery modes, timelines, and logistics and quality assurance. A number of methodologies have been developed over the years with the aim of improving programme design and implementation. This paper is intended to highlight the issues related to a rural energy programmes in developing countries rather than providing an in-depth step by step methodology to standard programmed design, planning and implementation. Though the focus of this paper is on PV technologies, much of the discussion will apply to other rural decentralized energy systems. Solar-based electricity for our houses is essential nowadays as the monthly power bills are escalating regularly. Also, the whole world is now facing the challenge 'global warming'. By using eco friendly and green technologies, we would help reduce global warming and help climate change mitigation. Integrated LED modules and other DC operated Electrical equipment conserve energy as they are energy-efficient, possess long-life and require less maintenance. Mini PV powered structure has been designed, analysed and tested in power grid equipped house as a partial lighting system with cost analysis.

Keywords: Developing countries, PV, Solar Home Systems [SHS], programme design, planning, implementation, deployment.

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Authors: Roop Singh Takur, E.Ramkumar

Paper Title: Bandwidth Calculation in IEEE 802.16 Networks

Abstract: IEEE 802.16 standard was designed to support the bandwidth demanding applications with quality of service (QoS).Bandwidth is reserved for each application to ensure the QoS. For variable bit rate (VBR) applications, however, it is difficult for the subscriber station (SS) to predict the amount of incoming data. To ensure the QoS guaranteed services, the SS may calculate more bandwidth. In this paper, we propose a scheme, named Bandwidth Calculation, to calculate the bandwidth without changing the existing unused calculates bandwidth. The idea of the proposed scheme is to allow other SSs to calculate the bandwidth when it is available. Thus, the system through put can be improved while maintaining the same QoS guaranteed services. Mathematical analysis and simulation are used to evaluate the proposed scheme..Simulation and analysis results confirm that the proposed scheme can calculate on average. By analyzing factors affecting the calculating performance, scheduling algorithms are proposed to improve the overall throughput. The simulation results show that our proposed algorithm improves the overall throughput by 40% in a steady network.

Keywords: WiMAX, IEEE 802.16, Bandwidth Calculation.

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36.

Authors: **Bhrugu Sevak**

Paper Title: **Security against Side Channel Attack in Cloud Computing**

Abstract: Cloud computing is a word that delivering hosted service over the internet. Cloud computing has been ideate as the next generation architecture of IT enterprise because of it's provides ubiquitous network, cost reducing, flexibility and scalability to users. Now days with the fast growing of cloud computing technology introduces new more vulnerabilities so security is considered to be one of the most critical aspect in clod computing environment due to the confidential and important information stored in the cloud. As per AMAZONE EC2 service case study it is

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possible to identify the particular target VM(virtual machine) in internal cloud infrastructure and then placed new VM with targeted VM and extract confidential information from targeted VM on same physical machine called as simple side channel attack. This paper introduces how to avert the side channel attack in cloud computing. This is accomplished by using combination of Virtual firewall appliance and randomly encryption decryption (using concept of confusion diffusion) and provide RAS (Reliability, Availability, and Security) of client's data or information.

Keywords: Cloud computing, side channel attack, Amazon EC2 service case study, virtual firewall appliance, randomly encryption decryption.

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Authors: **Raghavendra Joshi, Subba Rao M, Ravikiran Kadoli**

Paper Title: **Design Procedure for Optimum Efficacy of Magnetostrictive Material (Tb0.3Dy0.7Fe1.95) in Actuator Applications**

Abstract: Magnetostrictive materials are attracting increasing research attention due to inherent advantages such as outstanding magnetostriction, high energy density, high Curie temperature and quick response compared to PZT materials. Actuators using magnetostrictive materials show great potential due to their high forces and short reaction times for applications on heavy and stiff structures such as in aeronautics, civil structures and machine tools. This paper discusses the layout and design of magnetostrictive actuator to decide the suitable number of coil turns based on required magnetic field. In addition the systematic design procedure mainly focusing on electric, magnetic, thermal and mechanical aspects is being discussed. Analytical expressions such as equivalent magnetic circuit equation, flux, magnetic field intensity, shape factor of coils, peak to peak expression for magnetic field intensity and as well as for driving current, different losses in a actuator for the optimal usage of magnetostrictive material in the applications of actuator are being outlined. Significance of leakage inductance of the actuator and choice of feeding amplifiers affecting actuator drive coils dimensioning are illustrated.

Keywords: magnetostriction, Curie temperature, magnetostrictive actuator, shape factor, leakage inductance.

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Authors: **S.Ravi Teja, L.Krishna Kanth, G.Ravi Teja, T.Ravi**

Paper Title: **Comb Line Generation Using Gain Flattened Ring Mode Locked Laser**

Abstract: we briefly demonstrate combinational line generation from an integrated multiple quantum well in GaAs/InP passively mode-locked laser (MLL) with a gain flattening filter based on an mach-zehnder interferometer. The intracavity filter flattens the non-uniform gain profile of the semiconductor material providing a more uniform net cavity gain. The GFF MLL has a gain of -10dB comb span of 15nm (1.88THz), the widest spectral width yet demonstrated for an integrated qw MLL at 1.55(micro meters). The measured optical linewidth at the center of the comb is 29 MHz, the -20dB RF gain line width of 500 KHz, while the output spectrum is phase-locked to produce 900 fs pulses at a repetition rate of 30 GHz with 4.6 (pico second) integrated jitter from 100Hertz to 30 (MegaHz)

Keywords: comb-line generation, integrated optics, mode-locked lasers, optical communications, photonics integrated circuits.

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Authors: **Sarath Chand.L, D.A.R.Nikhilesh, Suresh Angadi**

Paper Title: **Test Escape Study IN IC Manufacturing**

Abstract: The invention of IC technology has paved way for modern application and has miniaturized devices with low power consumption and high operational capabilities. India though is a developing country it has very few industries in the field of integrated circuits. SPEL semiconductor is the only organization in India with facilities of IC assembly and testing. The steps involved in the organization make sure that high yield is produced. The raw material passes through a series of steps like assembly and testing before being dispatched to the customer. There are many other supporting facilities which help the main operations of SPEL. Quality of the material is maintained high with "RIGHT THE FIRST TIME" as the motive. SPEL aims to become a natural destination for assembly processes. The hierarchy in SPEL is arranged so as the processes happens in a time effective manner. OJET, which is the main motive of this program aims at making a student highly salable finished product equivalent to that of an IC assembled in SPEL.

Improving efficiency of existing material can be obtained only if the existing workforce spends their time on value added services. For this the concept of motion study is utilized by whichwe can determine the operator efficiency and can use the data to produce rational and reasonable results. The status of machines are obtained to find out the amount of production and the wastage in resources.TR in pocket fail check has also been done to verify the procedure employed by operators in case of TR in pocket fail error. LOT PROCESSING involves following a lot from the time of entry to testing to the stage of getting reeled. For gravity handlers the times taken for each steps in processing of a lot are calculated and time periods of each are compared and top errors are tackled. For SRM HANDLERS the frequencies of errors are measured and the errors with high frequencies are minimized. SETUP STUDY has also been done as part of the program in which the time taken for different steps in setup is calculated and the non-value adding time is reduced.By doing setup study and lot processing the production rate can be improved by diminishing time wasters and reducing high frequency errors. However all said it would a futile attempt not to provide any solutions to the data analyzed by the above method. Withrespect to the company's functioning, feasibility and resources available solutions have been provided to the problems that were identified. The production is expected to raise with implementation of these solutions. There is also a great deal of experience and wisdom that has been culminated during these four months.

Keywords: LOT PROCESSING, SETUP STUDY, SPEL, IC, SRM HANDLERS.

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Authors: **Darshan Singh, Dalveer Kaur, Yaduvir Singh**

Paper Title: **Condition Monitoring Leading to Control by Using Fuzzy and Hybrid Fuzzy Models: A Review**

Abstract: Plant wide control is a major area of research in current days and application of artificial intelligence techniques provide better results from conventional methods in control applications. In majority of the cases, researchers got much better results when they applied artificial intelligence algorithms in various engineering problems. Engineering problems have shown remarkable enhancement in performance and also efficiency when different artificial intelligence techniques were applied in comparison to conventional techniques. There are three basic domains in artificial intelligence viz. fuzzy logic, artificial neural network and optimization techniques. This paper reports the various research contributions made into condition monitoring aspects of induction motor using fuzzy logic and neuro-fuzzy logic (hybrid fuzzy).

Keywords: Artificial Intelligence, Condition monitoring, Fuzzy logic, Neuro-fuzzy logic.

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41.

Authors: **Karol Vasilko**

Paper Title: **Special Deformation Structures During Machining Plastic Metals, Their Activation And Use**

Abstract: The contribution analyses the possibilities of modification of cutting geometry in order to preserve a protective plastic zone of a material upon a cutting key. Based on the results of model experiment as well as practical verification, considerable increase in tool life has been achieved. The tools durability is dependent on the size of the shortened front face. Optimation of the face size enables to achieve a multiple durability when compared to a classical cutting key. The peculiarity of the processes is the creation of the two chips, one of which is an expelled plastic layer along the edge of the cutting tool. The application of the tool is possible only with the plastic materials cutting. Experimental tests have been carried out with frequently used steels. cutting tool, plastic deformation, wear, hips

Keywords: Optimation of the face size enables to achieve a multiple durability when compared to a classical cutting key.

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42.

Authors: **Chaudhari Chaitali G.**

Paper Title: **Optimizing Clustering Technique based on Partitioning DBSCAN and Ant Clustering Algorithm**

Abstract: Clustering is the process of organizing similar objects into the same clusters and dissimilar objects in to different cluster. Similarities between objects are evaluated by using the attribute value of object, a distance metric is used for evaluating dissimilarity. DBSCAN algorithm is attractive because it can find arbitrary shaped clusters with noisy outlier and require only two input parameters. DBSCAN algorithm is very effective for analyzing large and complex spatial databases. DBSCAN need large volume of memory support and has difficulty with high dimensional data. Partitioning-based DBSCAN was proposed to overcome these problems. But both DBSCAN and PDBSCAN algorithms are sensitive to the initial parameters.

Keywords: Clustering, DBSCAN, PDBSCAN, Ant clustering algorithm

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43.

Authors: **Pawan Kumar Saini, Kapil Bhagchandani, Yatendra Mohan Sharma**

Paper Title: **Modern Investigation of Issues and Ad-Hoc Routing Protocols Applied To VANET**

Abstract: During the last decade, with the advancement in network technologies and wireless communications, researchers inspired from a new type of network called vehicular ad hoc network (VANET). The Vehicular ad hoc network (VANET) is a new model of Mobile ad hoc network for wireless communication between vehicles on road or in between the vehicle to road side unit to provide the safety and comfort to vehicles in transportation system. Recent research work in VANET emphasis on particular areas like routing, security and quality of service but due to high dynamic nature of this network, designing an efficient routing protocol for all VANET applications is very hard, still there are scope of reconstruction or creation of new design of protocol, services for VANET architectures. The modification in existing approach or proposed a novel way of routing is milestone but a survey of routing protocols based on various parameters of VANET is a necessary issue in vehicle-to- vehicle (V2V) and infrastructure-to-vehicle (IVC) communication for smart ITS. This paper presents modern investigation of ad hoc routing protocols and the approaches that are proposed recently specially for vehicular ad hoc network with their advantages and shortcomings, which can be helpful for researchers to understand the routing protocols of VANET and can be used to enhance of existing protocol or proposed a new approach.

Keywords: VANET, MANET, Ad hoc Routing Protocols

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44.

Authors:	**K. Suvarna Latha, M V Seshagiri Rao, Srinivasa Reddy. V**
Paper Title:	**Estimation of GGBS and HVFA Strength Efficiencies in Concrete with Age**

Abstract: The utilization of supplementary cementitious materials is well accepted because of the several improvements possible in the concrete composites, and due to the overall economy. The present paper is an effort to quantify the strength of ground granulated blast furnace slag (GGBS) and high volume fly ash (HVFA) at the various replacement levels and evaluate their efficiencies in concrete. In recent years GGBS when replaced with cement has emerged as a major alternative to conventional concrete and has rapidly drawn the concrete industry attention due to its cement savings, energy savings, and cost savings, environmental and socio-economic benefits. The present study reports the results of an experimental study, conducted to evaluate the strengths and strength efficiency factors of hardened concrete, by partially replacing the cement by various percentages of ground granulated blast furnace slag and high volume fly ash for M20, M40 and M60 grades of concrete at different ages. The overall strength efficiency was found to be a combination of general efficiency factor, depending on the age and a percentage efficiency factor, depending upon the percentage of replacement. Here an effort is made towards a specific understanding of the efficiency of GGBS and HVFA in concrete, considering the strength to water cement ratio relations, age and percentage of replacement. The optimum GGBS and HVFA replacement as cementitious material is characterized by high compressive strength, low heat of hydration, resistance to chemical attack, better workability, and good durability and cost-effective. From this study it can be concluded that, since the grain size of GGBS is less than ordinary Portland cement, its strength at early ages is less but continues to gain strength over a long period.

Keywords: Bolomey's strength relation, Cementing efficiency, Ground granulated blast furnace slag (GGBS), High volume fly ash (HVFA), strength efficiency factor,

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45.

Authors:	**Surekha Manoj, Puttaswamy Palahalli Srinivasaiah**
Paper Title:	**Improvement of Power Quality of Grid Integrated Wind Distributed Generation by STATCOM**

Abstract: Worldwide fast depletion of conventional energy resources necessitates the implementation of renewable energy sources for generation to satisfy the growing demand. Since last decade, technological innovations and a changing economic and regulatory environment have resulted considerable revival of interest in connecting wind generation to the grid. Utilities are seeking to understand possible impacts on system operations when a large amount of wind power is introduced into the electric power system. Producers of renewable energy must condition the power produced in order to interconnect with the power grid and not interface with the grid's overall performance. In these aspects Flexible AC Transmission Systems (FACTS) Technology plays a vital role in enhancing the power system performance and improving the power quality of the system. This paper concentrates on power quality issues when wind power integrates with grid and the solution with the usage of STATCOM. An attempt is made with IEEE 16 Bus, 3 feeder test system and modeled for simulation study using MATLAB/SIMULINK simulation. Scopes obtained from the simulation results are proven for the improvement of voltage profile which in turn improves the overall power quality issues.

Keywords: FACTS, Wind Energy, Power Quality, Grid Integration.

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46.

Authors: **Janita S. Patel, G.B.Jethava**

Paper Title: **Providing Authorization by Using Face Recognization for Private Cloud Computing**

Abstract: Cloud computing technology is a new concept of providing dramatically scalable and virtualized resources, bandwidth, software and hardware on demand to consumers. Consumers can typically requests cloud services via a web browser or web service. The main concern is security privacy and trust.This paper include authorization based security for cloud server.In this paper we introduce face recognization to provide authorization for cloud security.

Keywords: Consumers can typically requests cloud services via a web browser or web service.

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47.

Authors: **Jyoti R. Rajput, Kalyankar Pravin P.**

Paper Title: **Secure Message Authentication**

Abstract:
Digital watermarks have recently been proposed for authentication of both video data and still images and for integrity verification of visual multimedia. In such applications, the watermark has to depend on the original image. It is important that the dependence on the key be sensitive, while the dependence on the image be continuous (robust). The proposed system basically uses authentication and encryption mechanism that are two intertwined technologies that help to insure that your data remains secure. Authentication is the process of insuring that both ends of the connection are in fact who they say they are. This applies not only to the entity trying to access a service (such as an end user) but to the entity providing the service, as well (such as a file server or Web site). Encryption helps to insure that the information within a session is not compromised. This includes not only reading the information within a data stream, but altering it, as well. While authentication and encryption each has its own responsibilities in securing a communication session, maximum protection can only be achieved when the two are combined. For this reason, many security protocols contain both authentication and encryption specifications.

Keywords: Encryption, Authentication, DCT cryptographic security, Hash Function.

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48.

Authors: **Rahul H.Naravade, U.N.Gujar, R.R.Kharde**

Paper Title: **Optimization of Cryogenic Treatment on Wear Behaviour of D6 Tool Steel by Using DOE/RSM**

Abstract: In this work, the effects of cryogenic treatment on the wear behavior of D6 tool steel were studied. For this purpose, two temperatures were used: -63 oC as shallow cryogenic temperature and -185 oC as deep cryogenic temperature. The effects of cryogenic temperature (Shallow and deep), cryogenic time (kept at cryogenic temperature for 20 and 40 h) on the wear behavior of D6 tool steel were studied. Wear tests were performed using a pin-on-disk wear tester to which different loads and different velocities were applied. The findings showed that the cryogenic treatment decreases the retained austenite and hence improves the wear resistance and hardness. Due to more homogenized carbide distribution as well as the elimination of the retained austenite, the deep cryogenic treatment

demonstrated more improvement in wear resistance and hardness compared with the shallow cryogenic treatment. By increasing the keeping time at cryogenic temperatures, more retained austenite was transformed into martensite; thus, the wear resistance was improved and further hardness were observed. The combination of heat treatment would have to be optimised. For that purpose Design of Experiment (DOE) is performed. The DOE is done with help of statistical tool i.e. minitab 16. Produced optimum runs with help of Response surface methodology (RSM) by Box-Behnken design.

Keywords: AISI D6 tool steel, cryogenic treatment (CT), wear behaviour, Design of Experiment (DOE), Response Surface Methodology (RSM), retained austenite (_R).

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	Authors:	**Ashok M. Kanthe, Dina Simunic, Ramjee Prasad**
	Paper Title:	**The Impact of Packet Drop Attack and Solution on Overall Performance of AODV in Mobile Ad–hoc Networks**

Abstract: Mobile ad-hoc network has features like self organization, adaptation in changing environment, nodes in ad hoc network works as router for routing packets. Each nodes have limited resources like bandwidth, battery power and storage capacity. MANETs are vulnerable to Denial of Service (DoS) attacks like black hole attack, gray hole attack and packet drop attack. Packet drop attack is a kind of denial of service (DoS) attack in mobile ad hoc networks. Due to the bandwidth and memory buffer limitation, queue manager of some nodes by default may drop some packets. So differentiating between normal node to attacker node is critical one. In this paper, it is proposed the reputation and trust based mechanism against packet drop attack and improves the network performance interms of throughput, packet drop rate, packet delivery ratio, normalized routing overhead and end-to-end delay.

Keywords: AODV, mobile ad-hoc networks, protocol, packet drop attack, Security.

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50.	**Authors:**	Balamurugan Adhithan, A.Syed bava bakrudeen, Hari Prasada Rao Pydi

	Paper Title:	Contemplation of Mechanical and Thermal Properties of Aluminum (1100) with Silicon Carbide	
	Abstract: Aluminum (1100) is found wide application for rail coaches, aircraft industry, bearing materials, piston material, transmission lines etc. But due to their low melting point and low hardness they will wear and deformed easily. The metal Aluminum cannot meet all the required properties suitable for various engineering applications. So it is necessary to develop the Aluminum based materials that could have all combinational properties satisfying all our engineering requirements. SiC can be considered as ideal reinforcements, due to their high strength, high aspect ratio and thermo-mechanic properties. However, until now, the main obstacle is to obtain a homogenous dispersion of the SiCs in the desired matrix. Quite a few methods have studied to help improving the dispersion of SiCs in a polymer matrix. The objective of this work is to reinforce light Aluminum with SiC by melt stirring method. Different wt% of SiC was added to Aluminum [1100] separately to make Aluminum composites and its mechanical and thermal properties have been investigated using test like tensile, hardness, coefficient of thermal expansion. The improvement of mechanical and thermal properties for both the cases has been compared with pure Aluminum [1100]. **Keywords:** Aluminum, Rockwell Hardness, Silicon Carbide, coefficients of thermal expansion. **References:** 1. Andreas Viereckl., Goh,C. S., Wei,J., Lee, L. C., Gupta, M.,and Qianqian Li, (2009)"Improved processing of carbon nanotubes/ magnesium alloy composites",Vol.69, pp.1193-1199. 2. Bhatnagar, M.,Baliga, B.J., (March 1993)"Comparison of 6H-SiC, 3C-SiC, and Si for power devices",Vol.40 (3), pp. 645–655. 3. Carreno-Morelli,E.,Yang,J.,and Couteau,E.,(2004)"Carbon nanotube/magnesium composite", Vol.8, pp.53-55. 4. Esawi, A., Morsi, K.,(2010) "Effect of carbon nanotube content on the mechanical properties of CNT- reinforced Aluminum composites", Vol.70, pp.500-507. 5. Esawi, A., Morsi, K., (2006) "Dispersion of carbon nanotubes (CNTs) in aluminum powder", Vol.38, pp.646-650. 6. Flahaut, E., Bacsa, R., Peigney, A., Laurent, C., (2003). "Gram-Scale CCVD Synthesis of Double-Walled Carbon Nanotubes".Vol.12, pp. 1442–1443. 7. Goh, C.,Wei, J.,Lee,L., and Gupta, M.,(2008)"Development of novel carbon nanotubes reinforced magnesium nanocomposites using powder metallurgy technique", Vol.9, pp. 130-135. 8. Hansang kwon, Peigney, A., (2009) "Investigation of carbon nanotube reinforced aluminum matrix composite materials", Vol.70, pp.546-550. 9. Jensen, J., Mickelson,W., Kis, A., and Zettl,A.,(2007)"Buckling and kinking force measurements on individual multiwalled carbon nanotubes",Vol.76, pp. 230-240. 10. Liu,Q., Ren,W., and Chen,Z., Yin, L.,(2009). "SemiconductingpropertiesofcupstackedCNT", Vol.47, pp.340-345. 11. Mintmire, J.W., Dunlap, B.I.,and White, CT., (1992). "Are Fullerene Tubules Metallic", Vol.68, pp. 631-634. 12. Muranaka, T., (2008). "Superconductivity in carrier-doped silicon carbide", Vol.9, pp.35-45. 13. Park.,Yoon-Soo.,(1998). "SiC materials and devices",Vol.65, pp. 20–60. 14. Qianqian Li ., Christian, A., Rottmair., Robert, F., (2010) "CNT reinforced light metal composites produced by melt stirring and by high pressure die casting", Vol.500, pp.200-210. 15. Shen, Y.L., Williams, J.J., Piotrowski, G., Chawla, N. and Guo, Y.L., (2001), "Correlation between tensile and indentation behavior of particle reinforced metal matrix composites: a numerical and experimental study," Vol. 49 (16), pp. 3219-3229.	**252-259**
51.	**Authors:**	Sachin A. Murab, Vaishali. M.Deshmukh	
	Paper Title:	An Empirical Study of Signature Recognition &Verification System Using Various Approaches	
	Abstract: Signature used as a biometric is implemented in various systems as well as every signature signed by each person is distinct at the same time. So, it is very important to have a computerized signature verification system. In offline signature verification system dynamic features are not available obviously, but one can use a signature as an image and apply image processing techniques to make an effective offline signature verification system. In this paper, we present implementation of off-line signature recognition and verification system, which is based on moment invariant method, ANFIS, Pairwise distance (pdist) and Kmeans. The user introduces the scanned images into the computer, modifies their quality by image preprocessing followed by feature extraction, ANFIS training, pdist and kmeans. **Keywords:** component: Image preprocessing, Feature extraction, Moment Invariant method, ANFIS training, pdist & kmeans. **References:** 1. K. Han, and I.K. Sethi, "Handwritten Signature Retrieval and Identification", Pattern Recognition 17, 1996, pp. 83-90. 2. S. Chen, and S. Srihari, "Use of Exterior Contour and Shape Features in Off-line Signature Verification", 8th International Conference on DocumentAnalysis and Recognition (ICDAR '05), 2005, pp. 1280-1284. 3. Cemil OZ, Fikret Ercal, Zafer Demir "Signature Recognition and Verification with ANN ",Skarya University Computer Eng. Department Sakarya,Turkey,UMR Computer Science Department Rolla,MO65401. 4. Ms. Vibha Pandey Ms. Sanjivani Shantaiya. "Signature Verification Using Morphological Features Based on Artificial Neural Network", 2012 pp. 288-292 5. Erdem, U.M., "2D Object Recognition In Manufacturing Environment Using Implicit Polynomials and Algebraic Invariants",Master Thesis, Bogazici University, 1997. 6. Fu, K.S., Mui, J.K., "A survey On Image Segmentation", Pattern Recognition, Vol. 13, pp.3-16, Pergoman Press, 1981. 7. M.Babu Rao, Dr.B.Prabhakara Rao and Dr.A.Govardhan," Content Based Image Retrieval using Dominant Color and Texture features", February 2011, pp. 118-123. 8. MING-KUEI HU," Visual Pattern Recognition by Moment Invariants", February 4, 2010,pp. 179-187.Henry José Block Saldana And Carlos Silva Cardenas," Design and Implementation of an Adaptive Neuro- Fuzzy Inference System on an FPGA used forNonlinear Function Generation",IEEE 2010. 9. Mu-Chun Su, Chien-Hsing Chou," A Modified Version of the K-Means Algorithm with a Distance Based on Cluster Symmetry", JUNE 2001,pp 674- 680. 10. Yiu-Ming Cheung, k*-Means: "A new generalized k-means clustering algorithm", Pattern Recognition Letters 24, 2003. 11. Tapas Kanungo, David M. Mount, Nathan S. Netanyahu, Christine D. Piatko, Ruth Silverman, and Angela Y. Wu, "Efficient Algorithms for K Means Clustering".	**260-263**

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52.	**Authors:**	**Aneesha Jose, P.Swaminathan**
	Paper Title:	**Modeling and Simulation of High Efficient Symmetric Half-BridgeConverter (SHBC) for Server Switched Mode Power Supplies**

Abstract: Asymmetric control scheme is an approach to achieve zero-voltage switching (ZVS) for half-bridge isolated dc–dc converters. But, it is not suited for wide range of input voltage due to the uneven voltage and current components stresses. Modeling and simulation of a new high-efficient symmetric half-bridge dc to dc converter is proposed in this paper. The proposed dc to dc converter regulates the output voltage by adjusting applied voltage on the main transformer with an auxiliary circuit while main switches are operated at both fixed duty ratio and switching frequency. So that, voltage stress on rectifier diodes and current stress on switches can be reduced.

Keywords: Symmetric Half-Bridge Converter (SHBC), Asymmetric Converter, Zero Voltage Switching (ZVS).

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53.	**Authors:**	Aswathy.P.S,M.S.P.Subathra
	Paper Title:	Series-Connected Forward–Flyback Converter for High Step-Up Power Conversion

Abstract: Global energy consumption tends to grow continuously. To satisfy the demand for electric power against a background of the depletion of conventional, fossil resources the renewable energy sources are becoming more popular.According to the researches despite its fluctuating nature and weather dependency the capacity of renewable resources can satisfy overall global demand for energy. High gain DC/DC converters are the key part of renewable energy systems .The designing of high gain DC/DC converters is imposed by severe demands. The power conditioning systems for the photovoltaic power sources needs high step-up voltage gain due to the low output of the generating sources. This paper presents a high step-up topology employing a Series-connected Forward-FlyBack converter, which has a series-connected output for high boosting voltage-transfer gain. Series-connected Forward-FlyBack converter is a hybrid type of forward and flyback converter. By stacking the outputs of them extremely high voltage gain can be obtained with small volume and high efficiency with a galvanic isolation. The separated secondary windings reduce the voltage stress of the secondary rectifiers and results in high efficiency.

Keywords: DC-DC power converters, forward converter, flybackconverter, power conditioning.

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Authors: **Arunkumar. P. Chavan, Rekha. G, P. Narashimaraja**

Paper Title: **Design of a 1.5-V, 4-bit Flash ADC using 90nm Technology**

Abstract: In this paper, a 4bit analog to digital converter is designed for low power CMOS. It requires 2N-1 comparators, an encoder to convert thermometer code to binary code. The design is simulated in cadence environment using spectre simulator under 90nm technology. The pre simulation results for the design shows a low power dissipation of 1.984mW for the designed ADC. The circuit operates with an input frequency of 25MHz and 1.5V supply with a conversion time of 6.182ns.

Keywords: CMOS comparator, Thermometer encoder, Flash ADC, Low-power.

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55.

Authors: **V Bram Armunanto, Yudit Cahyantoro NS, Kaleb Priyanto**

Paper Title: **A Circularity Analysis of Different Clearances in the Sheet Metal Punching Process**

Abstract: Nowadays, technological development demands efficiency of time and energy in all fields in order to create a product that can compete in the global market. Breakthroughs and innovations are needed merely to survive in manufacturing industry. Punching is the common process of using a cutting punch and die in the manufacturing process. A variety of physical phenomena occur in the metal cutting process such as metal flow, friction between the material and tools, process heat and changes in the microstructure of the material. Much research conerning dimensions, tolerances, cutting angles and cutting force has been carried out. This article discusses and examines the relationship between clearance, punch and dies circularity and circularity of the product of the punching process. Testing has been conducted using various punches with different diameters and different circularity conditions. The Coordinate Measuring Machine (CMM) which has an accuracy of 1 micron was used to measure the diameter of the punch and the dies, the clearance and circularity of the punch and dies, and the resulting product. The question is: is the circularity of the product of punching affected by the clearance or by the circularity of such tools?

Keywords: CMM.

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56.

Authors: Jithesh M V, Prawin Angel Michael

Paper Title: Design and Analysis of a Single Phase Unipolar Inverter Using Sliding Mode Control

Abstract: This project is about modeling and simulation of single phase unipolar Pulse Width Modulation (PWM) inverter using sliding mode control. The model was implemented using MATLAB/Simulink with the Sim Power Systems Block Set. In this model Metal Oxide Field Effect Transistor(MOSFET) model was used as switching device. The software used to design, analysis and evaluation of single phase inverter and their controllers in this project is MATLAB/Simulink.In inverter circuit, an AC output is obtained from a DC input by appropriate sequence of switching scheme. For that,in this model Pulse Width Modulation technique is used in control the operation of switches. The switching scheme applied is unipolar. Sliding mode control (SMC) is a robust controller with a high stability in a wide range of operating conditions .It is not possible to apply directly to multi switches power converters. In this paper, a fixed switching frequency sliding mode controller is used for control a single-phase unipolar inverter. The PWM signal is used to control switching states of the MOSFETs will functions in inverter model that create the control scheme. Then, simulation is made from the inverter model in Simulink.

Keywords: Pulse width modulator,sliding mode control, uinpolar single phase inverter.

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Authors: **Ragi R Menon, S. Jebarani Evangeline, Anish Gopinath**

Paper Title: **Modified Direct Torque Control of Permanent Magnet Synchronous Motor by using voltage vectors of variable amplitude and angle**

Abstract: In conventional direct torque controlled (DTC) permanent magnet synchronous motor drive (PMSM), there is usually unwanted torque and flux ripple. A modified direct torque control (DTC) for permanent-magnet synchronous machines, which enables important torque- ripple reduction by using voltage vectors with variable amplitude and angle, is proposed in this paper. In the proposed DTC, the magnitude of torque and flux errors are differentiated and employed to regulate the amplitude and angle of the output voltage vectors, which are finally synthesized by space vector modulation (SVM). The proposed DTC method is comparatively investigated with conventional DTC based on theory analysis and computer simulation. Simulations results validate the effectiveness of the proposed schemes in this paper.

Keywords: Direct Torque Control(DTC), Maximum torque per ampere(MTPA), Permanent Magnet Synchronous Motor(PMSM),Space Vector Modulation(SVM).

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Authors: **Gargi Amrujkar, Pramila Adavi**

Paper Title: **Software Based Partnering Process Model for Construction Sector**

Abstract: Effective inter-firm collaboration i.e. partnering in construction sector can lead to successful projects reflecting reduction in costs, timely completion as per schedule, improved safety, total quality management and reduced claims/conflicts or disputes. This paper describes a partnering process model which is completely a web based computer application 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 for achieving successful and strategic partnering relationships. The Partnering process includes 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: Partnering, Stakeholders, Dashboard, Online system.

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Authors: **Sandeep G. Sawant, A. B. Sawant, M. B. Kumthekar, V. V. Diwan**

Paper Title: **Construction Techniques of Retrofitting for R.C.C. Members Using Different Glass Fiber**

Abstract: Worldwide, a great deal of research is currently being conducted concerning the use of fiber reinforced polymer wraps, laminates and sheets in the repair and strengthening of reinforced concrete members. Fiber-reinforced polymer (FRP) application is a very effective way to repair and strengthen structures that have become structurally weak over their life span. FRP repair systems provide an economically viable alternative to traditional repair systems and materials. Experimental data on load, deflection and failure modes of each of the beams were obtained. The detail procedure and application of GFRP sheets for strengthening of RC beams is also included. The effect of number of GFRP layers and its orientation on ultimate load carrying capacity and failure mode of the beams are investigated.

Keywords: FRP, GFRP, Retrofitting.

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Authors: **Shaik Gowsuddin, Dr V B S Srilatha Indira Dutt**

Paper Title: **Ionospheric Parameters Estimation for Accurate GPS Navigation Solution**

Abstract: Satellite navigation system plays an increasing role in modern society. Various satellite navigation systems are in operation and being currently developed including global positioning system (GPS), global navigation satellite system (GLONASS), and Galileo. Thus, there is an increasing need for the research and development in various areas such as signal generation, signal reception, precise positioning, high-precision geodesy and survey. The satellite system transmits the navigation message signal to the earth station (or) directly to GPS users .The errors due to transmitter end, receiver end and due to atmosphere, the signal is degraded and sometimes it may be lost in space ,which in turn causes errors in accuracy of navigation solution. The errors that effect the navigation solution accuracy are: Atmospheric errors, Satellite clock errors, Ephemeris errors, Receiver noise error and error due to Multipath.
Among various kinds of error factors, the GNSS signal delay by the ionosphere is the greatest after the elimination of selective availability. The total electron content present in the ionosphere causes refraction to the GPS signal, due to this delay occurs in the GPS signal during its journey to the ground receivers which results in range delay and This delay can be estimated using single frequency receivers and as well as using dual frequency receivers. This delay due to the Ionospheric refraction is estimated around 14m-20m in range, Hence to obtain the precise navigation solution, it is necessary to estimate the ionospheric parameters such as TEC and delay. With available different modeling methods we can reduce the error in range. Hence in this paper, TEC as well as ionospheric delay are estimated for precise computation of the navigation solution.

Keywords: Total Electron Content, Pseudo Random Codes, Global Positioning System

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61.

Authors: **Dillip Kumar Mahapatra, Tanmaya Kumar Das, Gopakrishna Pradhan**

Paper Title: **An Integration of JSD, GSS and CASE Tools towards the Improvement of Software Quality**

Abstract: The increasing demand of software products for different business organization and individuals day-by-day enforces the developers to use policy, technology in a planned manner for the development of quality software products. It is important to entertain all different phases of software development life cycle (SDLC) i.e. from requirements to implementation, maintenance to re-engineering with the use of integrated computer-aided software engineering (CASE) tools and the use of group support systems (GSS) and joint application development (JAD) in the context of CASE environments to facilitate the entire development process. An integrated framework is proposed that facilitates the developers to build up confidence for the improvement of quality for software products.

Keywords: Software process, Joint Application Development, Group Support System, CASE, Software Quality

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62.

Authors:	**Lenisha Vincent Chirayath,R.NarcissStarbell**
Paper Title:	**A PV Micro-Inverter System Using Repetitive Current Control**

Abstract: Thisproject work proposes a grid-connected photovoltaic (PV) micro-inverter system and its control implementations. A dc-dc converter is used to interface the low-voltage PV module with load. A full-bridge pulse width-modulated inverter is cascaded and injects synchronized sinusoidal current to the grid. A plug-in repetitive current controller is proposed to regulate the grid current. Repetitive controller (RC) is suitable to eliminate periodic errors in a nonlinear dynamical system. In order to achieve high accuracy in the presence of periodic uncertainties, RC can be employed to remove the line side current harmonics in this work. High power factor and very low total harmonic distortions are guaranteed under varying load conditions. The model of the proposed scheme employing a repetitive current control in PV micro-inverter has been built using MATLAB/Simulink.

Keywords: Boost Converter, grid-connected photovoltaic (PV) system, photovoltaic micro-inverter, repetitive current control.

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63.

Authors:	Koushik Majumder, Malay Kumar Pandit, Asim Kumar Jana
Paper Title:	Design of a Novel Economic Multiplier in VLSI using Reversible Logic Gates

Abstract: In this paper, we present a new architecture for multiplication in VLSI (Very Large Scale Integration) with the advantage of less quantum cost as well as less transistor count as a result of reduction in number of gates to improve power consumption. Classical Logic Gates such as AND, OR, NAND (Except NOT) gates are not reversible that is inputs cannot be recovered from the output. On the other hand, in Reversible Logic Gates inputs can be recovered completely from the output that is there is one to one mapping between inputs and outputs. Reversible logic gates use less power compared to classical gates and under ideal condition, they consume zero power. So we have designed a new architecture for multiplication using some reversible logic gates - BVF gate and Peres Gate. This helped us to achieve 24% less quantum cost, 15% less garbage output, and 23% less no. of gates, which effectively reduces no. of transistors, and hence power consumption is minimum.

Keywords: Adder, Garbage Output, Multiplier, Quantum Cost, Reversible Logic, VLSI.

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64.

Authors: **Ekta Desai, Mary Grace Shajan**

Paper Title: **A Review on the Operating Modes of Near Field Communication**

Abstract: Near Field Communication is based on inductive coupling, where loosely coupled inductive circuits share power and data over a distance of a few centimeters. An NFC-enabled device can operate in three different modes. They are reader/writer mode, peer-to-peer mode, and card emulation mode. NFC allows two way interactions between electronic gadgets with more security and simplicity.

Keywords: Card emulation mode, Inductive coupling, NFC, Peer to peer mode, Reader/writer mode

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65.

Authors: **Mehnaz Khan, S.M.K. Quadri**

Paper Title: **Evaluating Various Learning Techniques for Efficiency**

Abstract: Machine learning is a vast field and has a broad range of applications including natural language processing, medical diagnosis, search engines, speech recognition, game playing and a lot more. A number of machine learning algorithms have been developed for different applications. However no single machine learning algorithm can be used appropriately for all learning problems. It is not possible to create a general learner for all problems because there are varied types of real world datasets that cannot be handled by a single learner. In this paper we present an evaluation of various state-of-the-art machine learning algorithms using WEKA (Waikato Environment for Knowledge Analysis) for a real world learning problem- credit approval used in banks. First we provide a brief description about WEKA. After that we describe the learning problem and the dataset that we have used in our experiments. Later we explain the machine learning methods that we have evaluated. Finally we provide description about our experimental setup and procedure and discuss the conclusion and the result.

Keywords: credit approval, machine learning, test sets and training sets.

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66.

Authors: S.Nithya, S.K.Deepika, G.Sindhu

Paper Title: A Review of Energy Aware Routing Protocols in MANET

Abstract: A Mobile Ad hoc Network (MANET) is a network consisting of a set of mobile hosts capable of communicating with each other without the assistance of base stations. This type of network having tiny light weighted nodes, with no clock synchronization mechanisms. In a MANET there are no dedicated routers and all network nodes must contribute to routing. Classification of routing protocols for MANET is based on how routing information is acquired and maintained by mobile nodes and/or on roles of network nodes in a routing. The wireless and distributed nature of MANETs poses a great challenge to system energy and the security.Mobile Ad hoc Networks (MANET) is a set of wireless mobile nodes dynamically form spontaneous network which works without centralized administration. Due to this characteristic, there are some challenges that protocol designers and network developers are faced with. These challenges include routing, service and frequently topology changes. Generally, in this type of network the exhaustion of energy will be more and as well, the security is missing due to its infrastructure less nature. There are also limited battery power and low bandwidth available in each node. Security attacks against MANET routing can be passive and or active. An overview of active attacks based on modification, impersonation/spoofing, fabrication, wormhole, and selfish behaviour is presented. A comparison of existing secure routing protocols form the main contribution in this paper, while some future research challenges in secure MANET routing are discussed

Keywords: Limited Battery Power, MANET, Routing Protocol, Routing Security

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Authors: **M.Sathya, K.Kalaiarasi**

Paper Title: **Improved QoS for Fixed WiMAX Network**

Abstract: Applications such as video and audio streaming, online gaming, video conferencing, Voice over IP (VoIP) and File Transfer Protocol (FTP) demand a wide range of QOS requirements such as bandwidth and delay. IEEE 802.16 standard called WIMAX provides broadband wireless access with QOS requirements.
The proposed work consists of a new uplink scheduling and Call Admission Control (CAC) algorithm for preferential treatment of service flows depending on QOS requirements. Using this scheduling and Call Admission Control algorithm fairness enhancement, with more connection acceptance

Keywords: Call Admission Control (CAC), File Transfer Protocol (FTP) , scheduling, Voice over IP (VoIP)

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Authors: V V Rajesh Parvathala, T Venkateswarareddy, N V G Prasad

Paper Title: Arm Based Wireless Energy Meter Reading System ALONG with POWER on/off CIRCUIT

Abstract: In this paper we discuss about wireless energy meter reading system along with power on/off circuit. It is a simple system which is used for measuring electrical bills through wireless communication and sends the information regarding consumed power & also send the dead line for paying of electrical bill and the system also having the power on/off circuit used to disconnect the power supply to energy meter by using wireless technology when the consumer fail to pay the electrical bill. Disconnecting the power supply through proper selection of switch located at the control unit. System also sends an acknowledgement to consumer regarding status of the system. Wireless energy meter reading system developed with ARM7 Processor, wireless communication network and other peripheral circuits.

Keywords: wireless meter reading system, zig-bee, GSM, ARM7 processor.

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Authors: **Maninder Kaur, Parminder Singh**

Paper Title: **A Mathematical Approach to Avoid Congestion and To Analyize Snoop Behaviour In Wired Cum Wireless Network**

Abstract: Performance of the TCP (Transmission Control Protocol) has been promising in wired networks. In wired network the packet loss is due to congestion. But the performance of TCP has degraded in wireless network where packet loss is not only due to congestion but to be also due to high bit error rates and hand offs. Also improving its performance in wired-cum-wireless networks preserving the end-to-end nature of TCP is a difficult task. To address this issue, several new protocols and TCP modifications have been proposed. Snoop is one such modification. In this paper we have surveyed some of the proposed solutions to improve TCP performance on wired-cum-wireless medium.

Keywords: Snoop Protocol, TCP, Snoop Module, wired-cum-wireless networks, Congestion.

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Authors: **B.Sravan Kumar, Rajeshwara Mahidhar.P, N.V.G.Prasad**

Paper Title: **Energy Efficient Adiabatic Full Adders for Future SOC's**

Abstract: In this paper we are going to compare the adiabatic logic designs & designing a new full adder using ECRL & PFAL logics after that the simulations were done using Micro wind & DSCH. Thus the efficiency of the circuits is shown & compared using different nano meter technologies.

Keywords: Adiabatic, ECRL, Adder, PFAL adder, Full adder, Low Power Adders.

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Authors: **Voore Subba Rao, Vinay Chavan**

Paper Title: **A User Friendly Window Based Application for Calculation of Query Execution Time for Relational Databases**

Abstract: In order to managing and calculating query execution time for Relational Database Management System (RDBMS), one must be fluent in Structured Query Language(SQL). The important concept considered in SQL are (entities, relationships, attributes) and the data schema while using SQL. The user has to remember the syntax of Query to maintain database management which is very difficult. However, normal users are not familiar with query languages and database structures, but would like to know the execution time of queries of various RDBMS languages and access data in a more user friendly way.

Keywords: Execution time, Query execution, User friendly query, Time estimation, Window based application.

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Authors: **Shabia Shabir Khan, Mushtaq Ahmed Peer, S.M.K Quadri**

Paper Title: **Scaling Up for the Streaming Data**

Abstract: Knowledge has always been the success factor for any organization (business / technical). Survey 2012 shows that every day about 2.5 quintillion (2.5×1018) bytes of data were created. As a result we are facing a challenge of handling such voluminous, potentially infinite, fast changing, temporally ordered data streams in a proper and timely manner so as to extract useful knowledge from that. However, due to its tremendous volume, we cannot store the whole of the streaming data in our limited or finite storage and due to its continuous flow we have to process it in a single pass, in contrast to the warehoused data where we could go through the data in multiple passes.

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In addition to this, we have to work in a limited amount of time. So, time and space are the important aspects that are taken into consideration while handling the streams of data. This paper discusses and compares those issues in the light of some sketching and counting algorithms and provides application oriented data-flow architecture for processing the streaming data along with the Granularity based approach that takes into consideration the resource awareness and adaptation for data stream mining algorithms. Further, since Analysts are mostly interested either in the recent data or in the broader view of the data, so this paper discusses a dynamic H-cube to facilitate multi-resolution analysis of streaming data wherein the Partial materialization is performed and computations are done on the fly using a tilted time frame.

Keywords: Frequency as an Interestingness Criteria, Partial Materialization, Streaming Data, Time Granularity.

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Authors: **Ayman Elnaggar, Mokhtar Aboelaze**

Paper Title: **An Efficient Methodology for Mapping Algorithms to Scalable Embedded Architectures**

Abstract: This paper presents a general approach for generating higher order (longer size) multidimensional (m-d) architectures from lower order (shorter sizes) architectures. The objective of our work is to derive a unified framework and a design methodology that allows direct mapping of the proposed algorithms into embedded reconfigurable architectures such as FPGAs. Our methodology is based on manipulating tensor product forms so that they can be mapped directly into modular parallel architectures. The resulting circuits have very simple modular structure and regular topology.

Keywords: Reconfigurable Architectures, Recursive algorithms, multidimensional transforms, tensor products, permutation matrices.

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Authors: **V. B. Jagdale, R. J. Vaidya**

Paper Title: **High Definition Surveillance System Using Motion Detection Method based on FPGA DE-II 70 Board**

Abstract: The low cost High Definition (HD) Surveillance system using Field-programmable Gate Array (FPGA) DE-II 70 Development Education Board is proposed in this paper. The proposed solution can be applied not only to various security systems, but also to environmental surveillance. Firstly, the basic principles of HD CMOS Camera Module & motion detection algorithm are given. The HD CMOS Camera Module is used to capture the surveillance video and send the video data i.e. RAW format data to FPGA DE-II 70 board. The motion detection algorithm is used to minimize the recorded data storing capacity. The Automatic motion detection system which can effectively attract operator attention and trigger recording is therefore the key to successful HD surveillance in dynamic scenes. The proposed methods can be well-suited for HD surveillance architectures, where limited computing power is available near the camera for communication. In the proposed system, HD camera is linked with Altera FPGA platform (DE-II 70 Board) where a motion detection algorithm is implemented and recorded video is stored on SD card. FPGA on an Altera DE-II 70 board was used to develop the custom hardware required to perform the motion detection algorithm. The Altera NIOS II embedded processor system was used to perform all hardware interaction tasks necessary on the DE-II 70 board and the custom hardware was constructed as modules inside the NIOS II system.

Keywords: HD CMOS Camera Module, Motion Detection Algorithm, Surveillance System.

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Authors: **Lameck Mugwagwa, Lungile Nyanga, Samson Mhlanga**

Paper Title: **Neural Network Breakout Prediction Model for Continuous Casting**

Abstract: Continuous casting is a process in which liquid steel is cooled in a bottomless mould into semi-finished steel products called billets, blooms or slabs depending on their cross section. In the process of continuous casting, two of the major problems encountered are cracks and breakouts. Breakouts usually result in temporary shutdown of the caster and huge amounts of downtime. Primary cracks which form before the solidifying strand exits the mould, are invariably linked to breakouts. Controlling primary cracks results in reduced chances of breakouts. This work

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aims at designing a breakout prediction neural network model. In this paper, a two-layer feed forward backpropagation neural network model is developed for predicting the existence of primary cracks that might lead to a breakout. The network obtains its inputs in form of temperature values from rows of thermocouples attached to the mould tube. Based on solidification characteristics of steel, the neural network is supplied with various inputs (of temperature values) and targets and is trained to predict the crack status in the mould. Training is performed using the Levernberg-Marquardt (trainlm) training algorithm, and the log sigmoid transfer function was used for both the hidden and output layer. The output from this neural network was a logical 1 (if a primary crack is present) and a logical 0 (if no primary crack is present). The neural network model is validated by simulating in MatLab/Simulink.

Keywords: continuous casting, breakout prediction, neural network.

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Authors: M.Prakash, M.S. Jayakumar, S.Ajayan

Paper Title: Control of Three-Phase PWM Rectifiers Using a Single DC Current Sensor

Abstract: This paper presents a new current control method for three-phase pulse width modulation rectifiers with active power factor correction. Conventional three-phase PFC control requires sensing of at least two input phase currents. Since the input line should be isolated from the control circuitry, current transformer or Hall effects current sensors can be used for sensing the phase currents, these are bulkier and more expensive than resistive current sensors. That type of electromagnetic current sensors are also difficult to integrate with the rest of the control circuitry, it is a major barrier for low-cost integrated PFC control development. The new current control method solves these problems by using only the dc-rail current as the feedback signal .The dc-rail current can be easily sensed by a shunt resistor, and the output signal can be directly used by the control circuitry without isolation .The control method is developed based on a nonlinear average current control principle and avoids the steady-state phase error of conventional linear PI control.

Keywords: Current sensing, nonlinear current control, power factor correction, PWM rectifiers.

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Authors: **Vikas Gupta, Chanderkant Verma**

Paper Title: **My Viterbi vs MATLAB Viterbi**

Abstract: The importance of convolutional codes is well established. They are widely used to encode digital data before transmission through noisy or error-prone communication channels to reduce occurrence of errors. To decode these convolutional code viterbi decoder is best choice. In this paper selection of viterbi decoder over conventional decoder is justified and a viterbi decoder is developed in MATLAB. This decoder is named My Viterbi and compared and analysed with the MATLAB viterbi decoder.

Keywords: Convolutional Encoder, My Viterbi, Viterbi Encoder, Packet Loss.

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Authors: **Islam M. Ezz El-Arab**

Paper Title: **Analytical methodology of Seismic Fragility Curve for Reinforcement Concrete Pier Bridges in Egypt**

Abstract: A seismic vulnerability evaluation method based on structural analysis for RC bridges with simple pier bents is proposed in the paper. The proposed method is based on the hypothesis of the flexible pier-rigid deck behavior of the structure subjected to transversal seismic loads. A flexible pier-rigid deck simplified model was therefore developed. This model has been chosen after verifying the correlation between the responses of the proposed model and of the real structure which was presented by Egyptian General Authority of Roads and Bridges. The damage produced by the earthquake load is centered on the piers of the bridge, while the dynamic study of the deck can be performed after the structural analysis of the piers in an uncoupled way. The maximum damage of the piers under seismic actions is the principal aim of the proposed structural evaluation methodology. A damage index is used for this purpose, which describes the state of the material at each point of the structure. The study success to present the fragility curves which show that the peak ground acceleration for 50% probability of exceeding slight, moderate and sever damage ranges from approximately 0.15 to 0.4 g for this typical and repeated RC bridge in Egypt.

Keywords: Analytical methodology, Fragility curve, Egypt, RC bridges, Seismic analysis.

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	Authors:	Shujaat Hussain Buch, Javed Ahmad Bhat
	Paper Title:	In-Plane Behavior of Masonry Infilled Reinforced Concrete Frames with Wooden Choh-kat Openings

Abstract: Determination of the behavior of infilled framed structures with openings has been a matter of study lately. However, analysis of infilled structures have of yet ignored the vital effect of opening frameworks, which in Kashmir valley is a wooden assembly called 'Choh-kats'. This study focuses on study of the behavior of the infilled frames with wooden 'Choh-kats' under in-plane lateral loads and is based on determination of initial lateral stiffness of infilled frame with wooden choh-kat under control parameters of opening location, opening area, opening aspect ratio and model of choh-kat framework. The finite elements are used to illustrate the behavior, and linear stiffness of the frames is determined at 10% lateral strength of a fully infilled frame. This work illustrates that the in-plane lateral stiffness of the frame increases with the addition of choh-kat and also gives a better understanding of illustrating infill with choh-kat openings as multiple compressive struts.

Keywords: Brick infills,finite element method, lateral stiffness, wooden choh-kat.

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	Authors:	**Sharana Reddy, B.Basavaraja**
	Paper Title:	**Simulation and Analysis of Common Mode Voltage in 2-level and Multilevel Inverter Fed Induction Motor Drive with Long Cable**

Abstract: The development of high frequency, Pulse Width Modulation (PWM), based Adjustable Speed Drives (ASDs) has increased the energy efficiency, performance and controllability in the induction motor applications. But high speed switching device such as Insulated Gate Bipolar Transistors (IGBTs) used in ASDs having rise time of 0.1µSec.,that generate fast switching transients (high dv/dt) about 6000V/µSec for 400V system and common mode voltage. This common mode voltage causes unwanted shaft voltage and resulting bearing currents. Parasitic capacitive couplings create a path to discharge current in the rotor and bearings results in premature bearing failure. In many new and retrofit industrial applications the PWM inverters and motors must be at separate locations thus requiring long motor cable, which contributes over voltage at the motor terminal due to voltage reflection phenomenon. In 480V application, inverter output common mode dv/dt can be as high as 7000V/µsec. and at motor terminals in the presence of long cable (20ft) can reach11000V/µSec. Higher common mode dv/dt (nearly double) at the motor terminals results in higher induced shaft voltage and bearing currents. Multilevel inverter generates smaller Common-Mode (CM) voltage, thus reducing the stress in the motor bearings. In addition, using sophisticated modulation methods, common mode voltage can be eliminated.

Keywords: Common mode voltage, induction motor drive, multilevel inverter, voltage reflection.

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Paper Title: **Importance of Shape and Weight towards the Recital of Simple Adaptive Median Filter in Plummeting Impulse Noise Level from Digital Images**

Abstract: Noise is impulse on images due to several aspects like malfunctioning in pixels due to camera sensor, transmission of images in noisy channel, hardware problem etc. This study reviews various techniques for removal of impulse noise. To reduce the impulse noise level in Digital images various filters were introduced amongst which Simple Adaptive Median (SAM) is one of the method which uses Hybrid Technique of Adaptive Median Filter And Switching Median Filter. SAM filter which uses Square Filter as its basis has an ability to change the size of the filter spatially based on the approximated local noise level. Based on Local Noise Level on digital images size of filter is changed i.e. Square Filter Technique is used basically in SAM. SAM was compared with three derivatives namely Weighted SAM (WSAM), Circular SAM (CSAM) and Weighted CSAM (WCSAM) and images were restored maximum of Impulse Noise, but as Circular Filter has complicated implementation that resulted in increase of execution time. This study investigates the effect of shape and weight on digital images using SAM filter and restore all the digital images impulse with noise with reducing execution time for all three derivatives

Keywords: Impulse, Noise Level, Digital Image, SAM

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