Volume 1 Issue 5, June 2012

International Journal of Engineering and Advanced Technology

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

Blue Eyes Intelligence Engineering & Sciences Publication Pvt. Ltd.
Exploring Innovation: A Key for Dedicated Services

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1.

Authors: Salil Batra, Chandra Prakash

Paper Title: Commanding Computer Using Gesture Based Patterns

Abstract: Gesture recognition is one of the popular methods for Human computer Interaction. This paper is mainly focused on the applications of this technology in the computing environment. The idea is to construct such a system which can take gesture inputs and on the basis of that controlling and commanding of the computer is performed. In doing so, such a module is presented which is based on the finger tracking through which different types of applications can be started. This module basically performs the finger counting and then on the basis of which actions are performed. Further these actions are used to control various functions of operating systems. Results reveal that the proposed technique works well in the robust conditions

Keywords: Gesture Recognition, Human computer Interaction, Finger Tracking, Convex Hull Algorithm Coefficient of Correlation.

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2.

Authors: Maya Yadav, Pradeep Baniya, Ganesh Wayal

Paper Title: Comparison Between Inheritance & interface UML Design Through the Coupling Metrics

Abstract: In this paper we have applied various coupling metrics for measuring the comparison between object oriented class inheritance and interface. In this we have applied metrics on class design diagram and evaluate the metrics values. The coupling metrics presented identifies complexity between inheritance and interface programming In this paper we want to show which concept is good to use and beneficial for software developer.

Keywords: measurement of metrics, object oriented technology ,CBO, NOC , DIT, C K metrics.

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Authors:	**Vaishali M. Chavan, V.V. Gohokar**
Paper Title:	**Speech Emotion Recognition by using SVM-Classifier**

Abstract: Automatic emotion recognition in speech is a current research area with a wide range of applications in human-machine interactions. This paper uses the support vector machine (SVM), to classify five emotional states: anger, happiness, sadness, surprise and a neutral state. The classification performance of the selected feature subset was done with that of the Mel frequency cepstrum coefficients (MFCC), Periodicity Histogram and Fluctuation Pattern. Within the method based on SVM, a new method by using Multi-class SVM is used as a classifier. Experiments were conducted on the Danish Emotion Speech (DES) Database. The recognition rates by using SVM classifier were 68 %, 60 %, 55.40 % and 60 % for Linear, Polynomial, RBF, and Sigmoid Kernel Function respectively. The recognition rates by Multiclass SVM using Linear, Polynomial, RBF and Sigmoid kernel function for Danish database for Periodicity Histogram are 64.77 %, 78.41 %, 79.55 % and 78.41% respectively.

Keywords: Emotion recognition, Mel frequency cepstrum coefficients (MFCC), Support Vector Machine.

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4.

Authors:	**Nagesh Potdar, Dipak Pawar, Sachin Jain, Bhumil Haria, Seema Shrawne**
Paper Title:	**Indoor Navigation Using Smartphones**

Abstract: This project is for implementation and analysis of the usage of smart phone sensors for indoor navigation, without the use of Global Positioning Systems. This is to extend advantages of outdoor navigation for indoor navigation, by making use of existing technologies and devices to facilitate navigation for achieving this, without the use of extra/expensive hardware.

Keywords: Navigation, local positioning system, motion tracking, smart-phone, GPS alternative

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Authors:	**Mamta Kamath, Disha Punjabi, Tejal Sabnis, Divya Upadhyay, Seema Shrawne**
Paper Title:	**Improving Content Based Image Retrieval using Scale Invariant Feature Transform**

Abstract: Content-Based Image Retrieval (CBIR) is a challenging task. Common approaches use only low-level features. Notwithstanding, such CBIR solutions fail on capturing some local features representing the details and nuances of scenes. Many techniques in image processing and computer vision can capture these scene semantics. Among them, the Scale Invariant Features Transform (SIFT) has been widely used in a lot of applications. This approach relies on the choice of several parameters which directly impact its effectiveness when applied to retrieve images. In this paper, we attempt to evaluate the application of the SIFT to refine CBIR.

Keywords: Content Based Image Retrieval (CBIR), Difference Of Gaussian (DOG), Nearest Neighbour Search (NNS), Scale Invariant Feature Transform (SIFT).

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6.

Authors:	**Preeti Singh, Charu Pujara**
Paper Title:	**Comparative study of various Techniques Employ in Image Steganography**

Abstract: The staggering growth in communication technology and the usage of internet allows the huge transfer of data over it but because of various security threats data can be tampered by the intruders. Various cryptography techniques are developed for secure transmission over the internet, another practical approach of hiding secret information from intruders over the web is Steganography. Steganography is a technique of hiding covert data inside an image. Various techniques are discussed below for hiding data and each of them have some of their own limitations. This paper comprises of four sections. Section 1 gives a brief introduction about Steganography. Section 2 Steganograpy Techniques, Section 3 Analysis of Steganography Techniques, Section 4 Conclusion and future scope.

Keywords: Steganography, Techniques, technology usage of internet.

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7.

Authors: **Modh Jigar S, Shah Brijesh, Shah Satish K**

Paper Title: **A New K-mean Color Image Segmentation with Cosine Distance for Satellite Images**

Abstract: This paper represents unsupervised method of k-means segmentation which is new adaptive technique of color-texture segmentation. With the progress in satellite images, the image segmentation technique for generating and updating geographical information are become more and more important. This algorithm first enhance the image then applying clustering based k-means segmentation technique ,using L*a*b color space and using cosine distance matrices instead of sqeuclidean distance. With this it is possible to reduce computational time and calculation for every pixel in the image .Although colors are not frequently used in image segmentation; it gives high discriminative power to the regions present in image.

Keywords: K-means segmentation, cosine distance ,Euclidean distance,

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8.

Authors: **A.Jeraldine Viji, M Sudhakaran**

Paper Title: **Reduction of THD in Single Phase PAF With PSD Method for Reference Current Generation**

Abstract: In this paper Single phase parallel active filter (PAF) with a control algorithm of power synchronous detection method for reference current generation is proposed .The current waveform injected by the active filter is able to compensate the reactive power and the load current harmonics and to balance asymmetrical loads. The active filter designed in PSIM software and control of active filter is done in Simulink environment. PSIM and MATLAB software is linked by Sim coupler.The capacitor voltage is maintained constant by using PI controller. Simulation results with PSIM software show that the designed active filter is very effective in improvement of quality of power.

Keywords: Active filter, Hysteresis Band controller, Power Synchronous detection (PSD), current harmonics, Pulse Width Modulation, PSIM software

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Authors: **Mayur S. Burange, S. V. Dhopte**

Paper Title: **Neuro Fuzzy Model for Human Face Expression Recognition**

Abstract: This paper present an approach to recognize human face expression and emotions based on some fuzzy pattern rules. Facial features for this specially eye and lips are extracted an approximated into curves which represents the relationship between the motion of features and change of expression. This paper focuses the concepts like face detections, skin color segmentation, face features extractions and approximation and fuzzy rules formation. Conclusion based on fuzzy patterns never been accurate but still our intension is to put more accurate results.

Keywords: Face Detection, Skin Color Segmentation, Face Futures, Curve Formation and Approximation, Fuzzy Patterns.

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Authors: **Priyanka Satish Tekadpande, Ramnivas Giri**

Paper Title: **Recent Developments in Traffic Signs Recognition Techniques**

Abstract: The traffic signs play a vital role for accident free and smooth fast driving. If the recognition of traffic signs done by the accurate and fast automated systems, it provides the extra edge in efficient navigation. Thus automatic traffic signs recognition is an important task, particularly in intelligence transportation system. Automated recognition system collects useful information about traffic signs, helps the driver to make timely decisions, and increases driving safety and comfort. This paper presents an overview of the different methods and techniques used in traffic sign detection and recognition. It describes the physical properties and characteristics of the road signs, potential difficulties and problems that occur during detection of real-time images. The detection and recognition techniques are classified into three stages i.e. Color-based filtering, shape-based analysis and final recognition. Thus, we have chronologically discussed some of the referred previous work theme-wise with respect to the different approaches and techniques used in these stages. In future, new techniques should be involved to increase the robustness, and to get faster systems for real-time applications.

Keywords: Artificial intelligence, Driver assistance system, Thresholding, hough Transform.

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11.

Authors: **Fawzi Elias Bekri, A. Govardhan**

Paper Title: **EMA-QPSO based Feature Selection and Weighted Classification by LS-SVM for Diabetes diagnosis**

Abstract: In accordance to the fast developing technology now a days, every field is gaining it's benefit through machines other than human involvement. Many changes are being made much advancement is possible by this developing technology. Likewise this technology is too gaining its importance in bioinformatics especially to analyse data. As we all know that diabetes is one of the present day deadly diseases prevailing. With the motivation of our earlier model OFW-ITS-LSSVM, here in this paper we introduce weighted classification with LSSVM to diagnose the diabetes in given blood sample datasets. We derived and proposed a swarm intelligence technique called Escalated Mediocre Agent based Quantum Particle Swarm Optimization EMA-QPSO for feature selection. The feature weights will be identified using a technique DFWQ (dynamic feature weight quantization) that derived from HITS algorithm, which uses in web mining. In contrast to our earlier model OFW-ITS-LSSVM the proposed model is not using pre defined ontology. Further, considering the patient's details we can predict where he has a chance to get diabetes, if so measures to cure or stop it.

Keywords: machine learning, SVM, Feature reduction, feature optimization, tabu search, Tabu search.

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12.

Authors: **Vishal B. Padole, D. S. Chaudhari**

Paper Title: **Detection of Brain Tumor in MRI Images Using Mean Shift Algorithm and Normalized Cut Method**

Abstract: This paper introduces an efficient method for detection of brain tumor from Magnetic Resonance Images (MRI). In the process of detection of tumor from MRI, segmentation plays vital role for partitioning an image into different subregion with homogeneous properties. The methodology introduced here consist of combination of two conventional algorithms i.e. Mean shift algorithm and Normalized cut (Ncut) Method which provides automatic detection of exact surface area of brain tumor in MRI. By incorporating the advantages of the mean shift segmentation and Ncut method, Magnetic Resonance image (MRI) will be preprocessed first by using the mean shift algorithm to form segmented regions, then Ncut method will be used for region nodes clustering after this connect component extraction analysis is used to locate the exact tumorous area in MRI Images.

Keywords: Mean shift, Normalized cut (NCut), tumor.

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13.

Authors: **M. J. Pawar, V. S. Jadhav**

Paper Title: **Finite Elemental Analysis of Influence of Shape and Profile of Cutting Edge of Twist Drill on Drilling Process**

Abstract: The aims of the investigations presented in this paper were to measure the tool load under conditions of drilling and to analyze if changes of the cutting edge shape and profile significantly influence the edge stresses. The described methods to analyze the influences of edge shape modifications will contribute to the optimization of drilling tools. Based on a specific cutting edge shape of a drill, systematic changes to the edge were made. Forces and temperatures on the cutting edge were measured as well as the heat flow into the chips and the workpiece. Using a quick-stop device, length and type of chip for the different drills under various machining parameters were observed. It could be shown that the modification of the transition from the chisel to the cutting edge influences the stress developed, heat in chip and chip formation. Machining with a rounded cutting edge shape compared to a sharp edge reduces the mechanical load but slightly increases thermal tool load. The presented experimental and FEA method show the possibility of determining influences of modified cutting edge shapes and to adapt the drill to the needs of the drilling process. The cutting force and stress developed during drilling processes has direct influence on the generation of heat, tool wear, quality of machined surface and accuracy of workpiece. Due to complex tool geometry, cutting conditions and some unknown factors theoretical cutting force and stress calculation failed to produce accurate results. To see the behavior of drill either experimental or Finite Elemental Analysis can be used. By using both the methods validation of results can be possible.

Keywords: Finite Elemental Analysis, Cutting edge, Chip formation

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14.

Authors: **Namrata Rajendra Shah, Aishwarya Vishwakarma**

Paper Title: **Review on Text Document Watermarking**

Abstract: Digital watermarking is the concept of hiding digital signal into digital document such that it cannot be detected and removed easily. That digital signal is called watermark. Text document watermarking is the process of hiding digital data into text document such that it preserves ownership of document. This paper focuses on watermarking process and various techniques including their benefits and limitations.

Keywords: DWTC, Text Document, Watermarking.

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15.

Authors: **Almabrouk W. Ibrahim, Mahdi Alhaji Musa, Nor Zairah Ab.Rahim**

Paper Title: **Application of Computer Supported Cooperative Work in Sebha University in Student Affairs Unit**

Abstract: Computer Supported Cooperative Work (CSCW) is the study of how people use technology, with relation to hardware and software, to work together in shared time and space. The nature of computer-supported cooperative work (CSCW) is to facilitate work using technology in such a way that supports human interaction in cooperative work situations. This study was conducted in order to investigate on application of CSCW in Sebha University, in particular, in students' affairs unit. The proposed application system would be the tools that will facilitate and automate workflow in this organization. This study was also proposed an outline policy for the organization based on the use of the automated system. For this study, the researcher designed a survey and distributed organization to 40 employees of this organization. Besides that, since the study is about current workflow, an observation was conducted to see how process is done. Findings revealed that most of the participants replied positively that they are seriously in need to use up-to date automated technology to ease their interaction in that unit.

Keywords: CSCW, current work flow, new work flow, Sebha University, automated system.

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16.

Authors:	**Ali Hussein Hsan Sabeen, Ahmed Elmugtaba Anwar, Zainura Z. Noor**
Paper Title:	**Sustainable Public Transportation in Malaysia**

Abstract: The sustainable public transportations represent one of the civilization implements in the development countries including Malaysia. The increase of the automobile vehicles in the Malaysian cities represents the civilization challenge in Malaysian Infrastructure development. Depending on the estimations conducted in 2005 for the number of automobile vehicles will increase to 15, 0000 million vehicles by 2020. Furthermore, it has been estimated that the motorcycles number is higher than the other types of the vehicles. The implications of the crucial increasing of street vehicles will disrupt widely the environment and human rather than the other types of the Malaysian infrastructure built. Therefore, the scientists suggest the Malaysian government to encourage the sustainable public transportation by reducing the costs and the ground fuel elimination. In addition, facilitation of manufacturing of the free fuel vehicles may contribute the dilemma reduction.

Keywords: volatile organic compounds vocs , United Nations Environment Program UNEP, global environment monitoring System GEMS

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Authors:	**Pushpalata Verma, K. K. Mehta**
Paper Title:	**Implementation of an Efficient Multiplier based on Vedic Mathematics Using EDA Tool**

Abstract: A high speed processor depends greatly on the multiplier as it is one of the key hardware blocks in most digital signal processing systems as well as in general processors. This paper presents a high speed 8x8 bit Vedic multiplier architecture which is quite different from the Conventional method of multiplication like add and shift. The most significant aspect of the proposed method is that, the developed multiplier architecture is based on Vertical and Crosswise structure of Ancient Indian Vedic Mathematics. It generates all partial products and their

sum in one step. This also gives chances for modular design where smaller block can be used to design the bigger one. So the design complexity gets reduced for inputs of larger no of bits and modularity gets increased. The proposed Vedic multiplier is coded in VHDL (Very High Speed Integrated Circuits Hardware Description Language), synthesized and simulated using EDA (Electronic Design Automation) tool - XilinxISE12.1i. Finally the results are compared with Conventional multipliers to show the significant improvement in its efficiency in terms of path delay (speed). The high speed processor requires high speed multipliers and the Vedic Multiplication technique is very much suitable for this purpose.

Keywords: Architecture, Ripple Carry (RC) Adder, Multiplication, Vedic Mathematics, Vedic Multiplier (VM), Urdhava Tiryakbhyam Sutra

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Authors:	**Anil Kumar Sharma, Anuj Kumar Ojha**
Paper Title:	**A Study on Micro-Electro-Mechanical Systems (MEMS) Sensors & their Applications**

Abstract: Continued demands for better control of the operating conditions of structures and processes have led to the need for better means of measuring temperature (T), pressure (P), and relative humidity (RH). One way to satisfy this need is to use MEMS technology to develop a sensor that will contain, in a single package, capabilities to simultaneously measure T, P, and RH of its environment. Because of the advantages of MEMS technology, which include small size, low power, very high precision, and low cost, it was selected for use in this paper. Although MEMS sensors that individually measure T, P, and RH exist, there are no sensors that combine all three measurements in a single package. In this paper we present overview of microelectromechanical system (MEMS) sensors and its application, is the technology of very small mechanical devices driven by electricity. The critical physical dimensions of MEMS devices can vary from well below one micron on the lower end of the dimensional spectrum, all the way to several millimeters, it merges at the nano-scale into nanoelectromechanical systems (NEMS) and nanotechnology. MEMS are also referred to as micromachines (in Japan), or micro systems technology – MST (in Europe).

Keywords: IMOD, MEMS, MST, NEMS , RH ,SAM

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19.

Authors: **Shobha Sharma**

Paper Title: **22nm Ptm Model Low Power yet High Speed CMOS High K Metal Gate Strained Silicon Technology Inverter**

Abstract: This paper analysis four inverter configuration with low power and high performance PTM models of Arizona State University, USA at 22nm technology with High K metal gate strained silicon technology. The effect of stacked transistor is analysed to show the reduced average and peak power dissipation. This stack effect is utilized in combination with forward biasing of a transistor to have low power but high speed inverter without loosing the maximum and minimum voltage swing at the output. Average power dissipated by low power stacked forward biased inverter is reduced by 4% compared to HP inverter. Peak power reduction is 64% in case of this new inverter compared to traditional High Performance inverter. The propagation delay is more compared to a HP inverter but is reduced by almost 18.2% compared to Low Power stacked inverter.

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

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Authors: **Saurabh P.Bahurupi, D.S.Chaudhari**

Paper Title: **Principal Component Analysis for Face Recognition**

Abstract: Face recognition is a biometric technology with a wide range of potential applications such as access control, banking, information security, human computer interaction, virtual reality, database retrieval etc. This paper addresses the building of face recognition system by using Principal Component Analysis (PCA) method. PCA is a statistical approach used for reducing the number of variables in face recognition. While extracting the most relevant information (feature) contained in the images (face). In PCA, every image in the training set can be represented as a linear combination of weighted eigenvectors called as "Eigenfaces". These eigenvectors are obtained from covariance matrix of a training image set called as basis function. The weights are found out after selecting a set of most relevant Eigenfaces. Recognition is performed by projecting a new image (test image) onto the subspace spanned by the eigenfaces and then classification is done by distance measure methods such as Euclidean distance. A number of experiments were done to evaluate the performance of the face recognition system.

Keywords: Face Recognition, Principle Component Analysis (PCA), Eigenface, Covariance matrix, Face database.

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21.

Authors: **S.Vasanthi, M.Gopila, I.Gnanambal**

Paper Title: **Fuzzy And Pid Excitation control System With AVR In Power System Stability Analysis**

Abstract: This works aims to develop a controller based on PID and Fuzzy Logic Controller to simulate an automatic voltage regulator in transient stability power system analysis. It was simulated a one machine control to check if the Fuzzy and PID controller implementation was possible. After that the controller developed was applied in field excitation system to show its behavior, which results were compared to the results obtained with the AVR itself.

Keywords: Fuzzy and PID controller, system to show its behavior.

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22.

Authors: **Chitra.M, A.R Ashwath, Roopa.M**

Paper Title: **Design and Implementation of Viterbi Encoder and Decoder Using FPGA**

Abstract: In this paper, we present an implementation of the Viterbi algorithm using the Hardware Description Language and Implemented on FPGA. We begin with a description of the algorithm. Included are aspects of design specifications that must be considered when implementing the Viterbi algorithm as well as properties of Verilog HDL that can be used to simplify or optimize the algorithm. Finally, we evaluate the performance of the Viterbi algorithm implemented on FPGA.

Keywords: HDL-Hardware Descriptive Language, FPGA- Field Programmable Gate Array.

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23.

Authors: **K.Sivakumar, N. Krishna Mohan, B. Sivaraman**

Paper Title: **Automation of 10 KW Biomass Gasifier and its effectiveness on saw dust briquettes with binder cow dung.**

Abstract: India is very rich in biomass. It has a potential of 19,500 MW (3,500 MW from bagasse based cogeneration and 16,000 MW from surplus biomass). Currently, India has 537 MW commissioned and 536 MW under construction.(GENI). On the other hand rural biomass gasification projects for power generation are facing lot of practical difficulties on operational effectiveness of gasification due to shortage of man power and knowledge worker for the operation of gasifier. Preparation of briquettes and starting and stopping of gasifier is a difficult task in many rural areas. So many rural power projects are failed to take momentum on implementation. This paper is

	focus on experimental investigation on effectiveness of automation of rural 10 KW biomass gasifier and its effectiveness. PLC based SCADA system was introduced in the programme controlled gasification of bio mass gasifier was experimentally tested. The results reveal that it improved gasification efficiency and less dependent of human man power. This experiment was tested with saw dust briquette with cow dung as binder having 75:25 ratio at 800* C. This ratio is selected because of higher gas composition than any other ratio's. it is investigated in manual mode operation and Automation mode operation for its effectiveness in a 10 KW down draft gasifier The experimental result reveals that, the gasification effectiveness is high due to complete combustion and its efficiency is improved around 10%. Automation leads to complete combustion and it helps to improve the reduction process of gasification. it increases in the production of Methane and CH4 in producer gas.. Quality of product gas produced is comparatively better in automation of gasifier. **Keywords:** Programmable Logic Controller, Combustion. , Manual mode, Auto mode, gasifier efficiency, gas composition, Product gas **References:** 1. Operation manual of Bio mass gasifier by Ankur Scientific Energy Technologies. 2. M.Simone, F.Barontini, C. Nicolella, L. Tognotti (2011). "Experimental characterization of the performance of a downdraft biomass gasifier". Proceedings of the European Combustion Meeting . 3. Felix Fonseca Felfli (2011)." Biomass briquetting and its perspectives in Brazil". Biomass and bio energy 35, 236 -242. 4. David E.Clarke (1989)."Influence of coal/binder interactions on mechanical strength of briquettes".fuel processing Technology, 68, , 1023-1030. 5. Ayhan Demirbas (1998). "Evaluation of biomass residue 1. Briquetting waste paper and wheat strawmixtures". Fuel Processing Technology, 55, 175–183. 6. Harwin Saptoadi(2008)."The best Biobriquette Dimension and its Particle Size".Asian journal of energy Environment 9, 161-175. 7. H.V.Sridhar,G.Sridhar Experience of using various biomass Briquettes in IBG (IISC BIORESIDUE GASIFIER) ,Indian Institute of science,Bangalore. 8. (Prokash C.Roy,Amitava Datta, Niladri chakraborty(2010). "Assessment of cow dung as a supplementary fuel in a downdraft biomass gasifier". Renewable Energy 3,379	
24.	**Authors:** **Roopashree.S, Sachin Saini, Rohan Ranjan Singh** **Paper Title:** **Enhancement and Pre-Processing of Images Using Filtering** **Abstract:** The field of Digital Image Processing refers to processing digital images by means of digital computer. One of the main application areas in Digital Image Processing methods is to improve the pictorial information for human interpretation. Most of the digital images contain noise. This can be removed by many enhancement techniques. Filtering is one of the enhancement techniques which is used to remove unwanted information (noise) from the image. It is also used for image sharpening and smoothening. The aim of this project is to demonstrate the filtering techniques by performing different operations such as smoothening, sharpening, removing the noise etc. This project has been developed using Java language because of its universal acceptance and easy understandability. Interest in digital image processing methods stems from two principal application areas:- improvement of pictorial information for human interpretation; and processing of image data for storage, transformation, and representation for autonomous machine perception **Keywords:** Digital Image processing, Filltering techniques, Image enhancement. **References:** 1. Brinkman B.H., Manteca A and Robb R.A. (2011) journal on Medical imaging, vol.17. 2. Lee International journal on pattern Analysis and ma-chine intelligence, pp. 165 3. Nagao M and Matsuyama T. (1997) Computer Graphics and Image Processing, vol. 9, pp. 394-407. 4. Handley D.A. and Green W.B. (1972) IEEE, vol. 60, no. 7, pp.. 821-8280. 5. Lee J (1983) Graphics and Image Processing, vol. 24, pp. 255- 269. 6. Aghagolzadeh S. and Ersory O.K. (1992) Transform image Enhancement, Optical Engineering, vol.31,pp.614-626. 7. Polesel A (2000) IEEE Transaction on Image Processing, vol.9, pp. 505-510. 8. Buades A., Coll B. and Morel J. 9. M Ozaki, Y. Adachi, Y. Iwahori, and N. Ishii, Application of fuzzy theory to writer recognition of Chinese characters, International Journal of Modelling and Simulation, 18(2), 1998, 112-116.	**111-113**
25.	**Authors:** **Sanjaydeep Singh Lodhi, Ghanshyam Rathore, Premnarayan Arya** **Paper Title:** **Performance based Frequent Itemset Mining Techniques for Data Mining** **Abstract:** Data mining tasks that try to find interesting patterns from databases, such as association rules, correlations, sequences, episodes, classifiers, clusters and many more of which the mining of association rules is one of the most popular problems. There is a large body of research on Frequent Itemset Mining (FIM) but very little work addresses FIM in uncertain databases. Most studies on frequent itemset mining focus on mining precise data. However, there are situations in which the data are uncertain. This leads to the mining of uncertain data. There are also situations in which users are only interested in frequent itemsets that satisfy user-specified aggregate constraints. This leads to constrained mining of uncertain data. Moreover, floods of uncertain data can be produced in many other situations. This leads to stream mining of uncertain data. In this paper, we propose algorithms to deal with all these situations. We first design a tree-based mining algorithm to find all frequent itemsets from databases of uncertain data. We then extend it to mine databases of uncertain data for only those frequent itemsets that satisfy user-specified aggregate constraints and to mine streams of uncertain data for all frequent itemsets. Our experimental results show the more effectiveness than existing methods. **Keywords:** Data Mining, Frequent Itemset Mining, Apriori Algorithm.	**114-121**

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Authors:	**Surendra Kumar Shukla, Romil Rawat, Cns Murthy**
Paper Title:	**Web Attacking Parameters Filtration: A Approach For Attack Signature Verification**

Abstract: Web site is the global needs for business, study and government sectors, but the usage of web application has addicted the peoples. There is no proficiency for the user at several levels such as security, context management, web applications and related information. Attacker has also been activated to steal or destroy the confidential and most secured data. In past various attacks has been notified with severe disastrous result. For stopping and detecting these attacks, various techniques and tools have been manufactured, but they are not 100% result oriented. In this paper we have presented various types of web attack and also different methods and techniques to detect and prevent them, finally we have evaluated these web attacks by different approaches.

Keywords: In past various attacks has been notified with severe disastrous result. For stopping and detecting these attacks,

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Authors:	**Kavya Cheraukula, Chowdam Venkata Sudhakar**
Paper Title:	**Design and Implementation of A Memory For Joint Improvement Of Error Tolerance And Access Efficiency**

Abstract: The on-chip memory becomes increasingly exposed to the dual challenges of device-level reliability degradation and architecture-level performance gap. We propose to exploit the inherent memory soft redundancy for on-chip memory design. Due to the mismatch between fixed cache line size and runtime variations in memory spatial locality, many irrelevant data are fetched into the memory thereby wasting memory spaces. The proposed soft-redundancy allocated memory detects and utilizes these memory spaces for jointly achieving efficient memory access and effective error control. We design an CRC & ECC with error correction techniques by making use of

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standard Ethernet (004C11DB7H) polynomial and compare with each other, which will be implemented in FPGA proposed system design which take care of the Cache and memory by re-checking the cache when a miss is identified and help in effective functionality of the system and finally we compare which method will give good results in terms of cost and reliability.

Keywords: cache memory, ECC, soft error, URL.

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Authors:	**K Mahesh Dutt, H.K.Shivanand**	
Paper Title:	**Investigation of Modal parameters of Carbon & Kevlar Fiber composite Laminates using FFT Analyzer**	

28.

Abstract: Composite Materials are known for their excellent combinations of High Structural Stiffness & Low Weight. They allow the Design Engineer to tailor the material in order to achieve the desired performance requirements because of their anisotropic properties. Therefore, it has become very necessary for Engineers to develop tools which allow the Design Engineer to obtain Optimized designs considering the structural requirements. Based on these requirements, this work considers the Dynamic behavior of Components manufactured from Fiber-reinforced Composite Materials. Towards this, Specimens of Carbon & Kevlar fibers were manufactured using the Hand Lay-up process followed by cutting to the required dimension. Experimental Dynamic Tests were carried out using specimens of different thickness. From the results obtained, the influence of the fiber orientations as well as the stacking sequences on the modal parameters like Natural frequency, Damping etc., were investigated. Also, Validation of the results of Theoretical and from the FEA was done. Good Agreement was obtained between the finite – element predictions and experimentalresults

Keywords: Composite Materials, FEA, Modal Analysis, Fibers.

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	Authors:	**Pravin R. Kubade, V. S. Jadhav**
	Paper Title:	**An Experimental Investigation of Electrode Wear Rate (EWR), Material Removal Rate (MRR) and Radial Overcut (ROC) in EDM of High Carbon-High Chromium Steel (AISI D3)**

Abstract: This study investigates the influence of EDM parameters on EWR, MRR and ROC while machining of AISI D3 material. The parameters considered are pulse-on time (Ton), peak current (Ip), duty factor (t) and gap voltage (Vg). The experiments were performed on the die-sinking EDM machine fitted with a copper electrode. The experiments planned, conducted and analyzed using Taguchi method. It is found that the MRR is mainly influenced by (Ip); where as other factors have very less effect on material removal rate. Electrode wear rate is mainly influenced by peak current (Ip) and pulse on time (Ton), duty cycle (t) and gap voltage (Vg) has very less effect on electrode wear rate. Peak current (Ip) has the most influence on radial overcut then followed by duty cycle (t) and pulse on time (Ton) with almost very less influence by gap voltage (Vg).

Keywords: AISI D3; EDM; Radial overcut, duty factor

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	Authors:	**Mohammad Eyni Kangavar**
	Paper Title:	**Seismic Propensity of Knee Braced Frame (KBF) As Weighed Against Concentric Braced Frame (CBF) Utilizing ETABS and OPENSEES**

Abstract: Steel braced frame is one of the structural systems used to resist earthquake loads in structures. Many existing reinforced concrete structures need retrofitting to overcome deficiencies and to resist seismic loads. The use of steel bracing systems for strengthening or retrofitting seismically in adequate reinforced concrete frames is a viable solution for enhancing earthquake resistance. Steel bracing is economical, easy to erect, occupies less space and has flexibility to design for meeting the required strength and stiffness. In the present study, seismic propensity of knee braced frames as weigh against concentric braced frames was investigated. These investigations were based on stiffness and ductility. Single - bay reinforced concrete frames in two levels which are a 1- story and a 10- story with three modes which are reinforced concrete frame without brace and reinforced concrete frame with concentric brace system and reinforced concrete frame with knee brace system were considered. Displacement analysis were performed using the Extended 3D Analysis of Building Systems (ETABS) software for investigating stiffness of these system and pushover analysis were performed through Open System for Earthquake Engineering Simulation (OPENSEES) software for investigating ductility of these system. Finally, analysis of cyclic loading was done by using again the OPENSEES software for the completion of the investigations. The results of these outputs indicated that concentric bracing can provide a stiffer bracing system but reduces the ductility of the reinforced concrete frame. Knee bracing can be employed to provide the desired ductility level for reinforced concrete frame. It is concluded that both concentric bracing and knee bracing systems may be used to design or to retrofit for a damage-level earthquake. However, when designing or retrofitting for a collapse-level earthquake, knee bracing is a more effective system.

Keywords: concentric braced frame, ductility, knee braced frame, stiffness

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Authors: **Nitish Agarwal**

Paper Title: **Fragile Watermarking Scheme for Images in Transform Domain**

Abstract: Watermarking had an explosive amount of work done in the past decade. The field has diverse application areas, and a large number of fields amalgamate to ensure different requirement in different circumstances is being met by watermarking. We will be focusing in this paper mainly on the techniques which come under authenticating an image as to see if the image which is being used as a proof is not tampered in any way. This comes as the subset named as fragile watermarking in the field of watermarking techniques. We propose a novel method which focuses mainly on JPEG format of images and takes the lossy compression into consideration. The method works for both grayscale as well as the color images.

Keywords: Watermarking, Fragile Watermarking, Image Authentication, Transform Domain, JPEG, Hash, MD5, Digital Signature Algorithm, HMAC.

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Authors:	**Rashi Bais, K.K.Mehta**	
Paper Title:	**Biometric Parameter Based Cryptographic Key Generation**	

Abstract: A method is proposed for generation of unique cryptographic key which is generated using biometrics of the user, which are stable throughout person's lifetime. The proposed approach reduces the cost associated with lost keys, addresses non-repudiation issues and provides increased security of digital content. This approach has reduced the complicated sequence of the operation to generate crypto keys as in the traditional cryptography system. The key is derived directly from the biometric data and is not stored in the database, since it creates more complexity to crack or guess the cryptographic keys. We evaluated our technique using 50 different fingerprint samples, and found that an error-free key can be reproduced reliably with a 99.5% success rate. This approach is implemented in MATLAB and can generate variable size cryptographic key, with minimum amount of time complexity, which is aptly suited for any real time cryptography.

Keywords: Cryptography, Biometrics, Minutiae points, Morphological Operation, Histogram Equalization, Crossing Number

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Authors:	**Sowjanya Sunkara, T.Ravi Sekhar**	
Paper Title:	**High Speed Codec Design for Crosstalk Avoidance**	

Abstract: The cross talk is dependent on the data transition patterns on the bus, patterns can be classified based on the severity of the crosstalk they impose on the bus. The general idea behind techniques that improve on-chip bus speed is to remove undesirable patterns that are associated with certain classes of crosstalk. Different schemes incur different area overheads since they requires additional wires, spacing between wires or both. We analyze the properties of the FPF-CAC and show that mathematically, a mapping scheme exists between the data words and code words. Our proposed CODEC design offers a near-optimal area overhead performance. An improved version of the CODEC is then presented, which achieves theoretical optimal performance. We also investigate the implementation details of the CODECs, including design complexity and the speed. Optimization schemes are provided to reduce the size of the CODEC and improve its speed.

Keywords: CODEC, FPF-CAC, pruning,shielding.

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Authors:	**Brajesh Mishra, Sudeep Baudha, Amit Gupta**
Paper Title:	**Data Rate Comparison during Handoff in GSM with Wireless ATM Networks**

Abstract: Wireless GSM has emerged as an important component of the broadband wireless network infrastructure. While GSM supports for different traffic characteristics and QOS requirements, WATM networks provide wireless extension to the ATM-based B-ISDN networks by adding mobility support functions. The implementation of WATM poses several problems like mobility management, radio access to network etc. This paper presents the literature survey of GSM and its handoff related issues. Handoff is basically related with GSM so that we can understand the required bandwidth and data rate. These parameters are compared with traditional and advance data rate bandwidth. The paper reviews ATM fundamentals and its benefits. It deals with GSM features, requirements, protocol architectures and the global activities AS per the requirement of higher access network user needs high speed that will surly increase with GSM network. The focus is made on the handoff related aspects of WATM and GSM. The handoff management operation, requirements, protocols, proposed solutions and open issues for research.

Keywords: GSM, ATM. Hand-Off, Data Rate

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Authors:	**N.P. Zinjad, S. S. More**
Paper Title:	**Energy Efficiency in Data Centers: How to Reduce Power Consumption in Data Centers by Optimum UPS Loading**

Abstract: Computation and data center has a huge value to modern enterprise. This has resulted in the installation of millions of data centers in business around the globe. Historically, the cost to power and cool these facilities was small relative to the investment in servers, storage units and other equipments. Today, however, the annual power and cooling costs of typical data centers are almost equal to the cost of hardware. In the past decade, India has witnessed an exponential increase in the demand for digital storage, from 1 petabyte in 2001 to more than 34 petabytes by 2007. They also continue to grow at a compounded rate of 25-30%. Datacenter growth is basically driven by increasing requirements from the sectors such as financial institutions, telecom operators, manufacturing

	and services. While large financial institutions and telecom companies are likely to build captive Datacenters for hosting their growing data storage needs. Datacenter service providers are expected to invest significantly to multiply their capacities, so as to fulfill the demand arising from small and midsize users. Datacenter is highly energy intensive. With the increasing energy cost, the increase in operational cost is inevitable. Therefore it becomes necessary to reduce the energy consumption to offset the increasing operational cost and to maintain competitiveness. Existing Datacenters need to adopt the best practices in design, operation and maintenance to achieve operational excellence. The increasing IT business process outsource from foreign countries has resulted in phenomenal growth of Datacenters in India. The total datacenter capacity in India is growing at a rapid pace and is expected to exceed 5.1 million square feet by 2012. The primary scope of this paper is to provide a framework in which data centers, large and small, could analyze and reduce their power consumption. This paper provides a quantitative approach to understanding energy efficiency within a server and within a data center. A panorama for power minimization and energy efficiency beginning with the basics of dual in line memory modules (DIMM) selection, configuring processors with reduced power states, options for constantly spinning disks, power management features in operating systems and other internal equipments. **Keywords:** Loading optimization, Harmonics, Flywheel plus converter, Loading, Efficiency, Five "nines", MTTF, MTBR, MTBF. **References:** 1. Datacenter book; Publisher: BEE India 2. Energy Efficiency in Data Centers; Publisher: Intel 3. www.leonardo energy.com 4. APC journals 5. www.schneider electricals.com 6. www.cockvalley.com 7. Configuring your UPS; Publisher: EAMS	
36.	**Authors:** **Deepak Kumar Dakate, Pawan Dubey** **Paper Title:** **Blowfish Encryption: A Comparative Analysis using VHDL** **Abstract:** Data security has always been important in all aspects of life. Data may contain several form of information that we want to secure from any unauthorized access. It can be all the more important as technology continues to control various operations in our day to day life Reprogrammable devices are highly attractive options for hardware implementations of encryption algorithms as they provide cryptographic algorithm agility, physical security, and potentially much higher performance, therefore this paper investigates a hardware design to efficiently implement a special type block ciphers in VHDL and its comparative analysis in different parameter variation . This hardware design is applied to the new secret and variable size key block cipher called Blowfish designed to meet the requirements of the previous known standard and to increase security and to improve performance. The proposed algorithm will be used a variable key size. **Keywords:** VHDL **References:** 1. B. Schneier, Description of a New Variable-Length Key, 64-Bit Block Cipher (Blowfish),Fast Software Encryption, Cambridge Security Workshop Proceedings (December 1993), Springer-Verlag, 1994. 2. M. Thaduri, S.-M. Yoo, An efficient VLSI implementation of IDEA encryption algorithm using VHDL, Sciencedirect ,5 JUNE 2004. 3. Afaf M. Ali Al-Neaimi, New Approach for Modifying Blowfish Algorithm by Using Multiple Keys, IJCSNS, March 2011. 4. Krishnamurthy G.N , V. Ramaswamy , Leela G.H and Ashalatha M.E," Blow-CAST-Fish: A New 64-bit Block Cipher", IJCSNS International Journal of Computer Science and Network Security, VOL.8 No.4, p. 282,April 2008. 5. P. Karthigai Kumar, K. Baskaran , An ASIC implementation of low power and high throughput blowfish crypto algorithm, Sciencedirect, 6 April 2010. 6. Sushanta Kumar Sahu, Manoranjan Pradhan, FPGA Implementation of RSA Encryption System, International Journal of Computer Applications, April 2011.	**177-179**
37.	**Authors:** **Veeraiah Kumbha, N. Sumathi, K. Siva Naga Raju** **Paper Title:** **Power Quality Improvement of Grid Connected Wind Energy System having Balanced and Unbalanced Non-linear Loads** **Abstract:** A Power quality problem is an occurrence manifested as a nonstandard voltage, current or frequency that results in a failure or a mis-operation of end user equipments. Utility distribution networks, sensitive industrial loads and critical commercial operations suffer from various types of outages and service interruptions which can cost significant financial losses. With the restructuring of power systems and with shifting trend towards distributed and dispersed generation, the issue of power quality is going to take newer dimension. Injection of the wind power into an electric grid affects the power quality. The performance of the wind turbine and thereby power quality are determined on the basis of measurements and the norms followed according to the guideline specified in International Electro-technical Commission standard, IEC-61400. The influence of the wind turbine in the grid system concerning the power quality measurements are-the active power, reactive power, variation of voltage, flicker, harmonics, and electrical behavior of switching operation and these are measured according to national/international guidelines. The paper study demonstrates the power quality problem due to installation of wind turbine with the grid. In this proposed scheme STATIC COMPENSATOR (STATCOM) is connected at a point of common coupling with a battery energy storage system (BESS) to mitigate the power quality issues.. The STATCOM control scheme for the grid connected wind energy generation system for power quality improvement is simulated using MATLAB/SIMULINK in power system block set. Finally the proposed scheme is applied for both balanced and unbalanced linear non- linear loads.	**180-186**

Keywords: International electro-technical commission (IEC), power quality, wind generating system (WGS).

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38.

Authors: **S. Drishya, I. Nancy Jeba Jingle**

Paper Title: **Efficient Method for De-Duplication and Periodicity Mining In Time Series Databases**

Abstract: Periodic pattern mining or periodicity detection has a number of applications, such as prediction, forecasting, detection of unusual activities, etc. The problem is not trivial because the data to be analyzed are mostly noisy and differentperiodicity types(namely symbol, sequence, and segment) are to be investigated. Noise is the duplication of data from differentdatabases when they are used for same purpose in different places. So it should be removed. Time series is a collection of data values gathered generally at uniform interval of time to reflect certain behavior of an entity. Real life has several examples of time series such as weather conditions of a particular location, transactions in a superstore, network delays, power consumption, earthquake prediction. A time series is mostly characterized by being composed of repeating cycles. Identifying repeating (periodic) patterns could reveal important observations about the behavior and future trends of the case represented by the time series, and hence would lead to more effective decision making. The goal of analyzing a time series is to find whether and how frequent a periodic pattern (full or partial) is repeated within the series. There is a need for a comprehensive approach capable of analyzing the whole time series or in a subsection of it to effectively handle different types of noise (to a certain degree) and at the same time is able to detect different types of periodic patterns; combining these under one umbrella is by itself a challenge. In this paper, we present an algorithm which can detect symbol, sequence (partial), and segment (full cycle) periodicity in time series. The algorithm is noise resilient; it has been successfully demonstrated to work with replacement, insertion, deletion, or a mixture of these types of noise.

Keywords: Time series, periodicity detection, suffix tree, symbol periodicity, segment periodicity, sequence periodicity, noise resilient.

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39.

Authors: **Ashish P. Waghmare, S. S. Pimplikar**

Paper Title: **Financial Analysis of Infrastructure Project - A Case Study on Built-Operate-Transfer Project in India**

Abstract: The build operate transfer scheme can be advantageously adopted by administrations in India for implementing transport infrastructure projects, such as the construction of bridges, road without undue strain on their declining budgetary resources relating to the toll structure, toll revision schedule, extent of the grant, and duration of the concession period.

Feasibility report is prepared during the initial phase or definition phase of the project. Updating and validation of the feasibility report is required for implementation of the project. the project can be implemented as per techno economics stipulation made in the feasibility report. A feasibility report is prepared to present an in-depth techno economic analysis carried out on the project and contain result of technical as well as economic evaluation of the project so that the owner can take investment decision and the project can be properly planned and implemented .

The viability of any project mainly depend on the technical analysis, financial analysis, economic analysis, ecological analysis. Hence it can be very well understood that feasibility study is the base for the success of a project and the major part of this success lies in proper financial analysis.

Financial analysis is useful for every business entity to enhance their performance, competitive strength and access

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their financial stability and profitability of the firm. This paper investigates the financial analysis of the BOT project

Keywords: BOT Infrastructure projects, profitability statement, cash flow statement, DSCR, payback period.

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40.

Authors: **Amrita Chakraborty, Avinash Gaur**

Paper Title: **Signaling Technique for Free Space Optics**

Abstract: A new efficient method to implement orthogonal frequency division multiplexing (OFDM) on intensity modulated direct detection (IM/DD) channels is presented and termed auto-correlated optical OFDM. It is shown that a necessary and sufficient condition for a band limited periodic signal to be positive for all time is that the frequency coefficients form an autocorrelation sequence. Instead of sending data directly on the subcarriers, the autocorrelation of the complex data sequence is performed before transmission to guarantee non-negativity. In contrast to previous approaches, auto-correlated optical OFDM is able to use the entire bandwidth for data transmission and does not require reserved subcarriers. Using a sub-optimal design technique with 1024 subcarriers, auto-correlated optical OFDM has a better BER than the existing techniques.

Keywords: Auto-correlation, IM/DD,OFDM.

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41.

Authors: **A. Bhogayata, K. D. Shah, B. A.vyas, N. K. Arora**

Paper Title: **Feasibility of Waste Metallised Polythene Used As Concrete Constituent**

Abstract: Utilising fibres in concrete was introduced in early 1900s. Since then large variety of fibres are experimented and being practiced effectively around the world. The prime concern was the improvisation of concrete properties. With time, the scenario gets diverted towards utilisation of wastes and by products from industry and municipal wastes especially the plastic wastes were in concern. The most stable form of plastic wastes made them non biodegradable and somewhat difficult to recycle. In last ten years, large range of various wastes are added to concrete as dual solution towards mitigation of waste management problems and reducing natural material use as concrete constituent. This paper presents the experimental investigation of feasibility of polyethylene post consumer waste used for food packaging along with fly ash as another by product of thermal power stations. The ample numbers of samples were prepared in M10 concrete mix with two different water/ cement ratio. Plastic waste was converted in fibre form and added from 0% to 1.5% of volume along with variation of fly ash from 0% to 30% of volume. Different curing conditions were used to note the effect of chemical attack and corresponding change in the compressive strength of the concrete mix.

Keywords: metallised polyethylene, land filling, compressive strength, acid curing, sulphate curing, water/cement ratio.

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42.

Authors: **B.Rajani, P.Sangameswara Raju**

Paper Title: **Pi & Fuzzy Logic Controller Based Multi Converter Unified Power Quality Conditioner**

Abstract: A new unified power-quality conditioning system (MC-UPQC) , is proposed in this paper as a new custom power device for a two-bus/two-feeder distribution system. The response of the Multi converter unified power quality conditioner, for different types of controllers are studied. This paper capable of simultaneous compensation for voltage and current in multibus/multifeeder systems. In this configuration, one shunt voltage-source converter (shunt VSC) and two or more series VSCs exist. The system can be applied to adjacent feeders to compensate for supply-voltage and load current imperfections on the main feeder and full compensation of supply voltage imperfections on the other feeders. In the proposed configuration, all converters are connected back to back on the dc side and share a common dc-link capacitor. Therefore, power can be transferred from one feeder to adjacent feeders to compensate for sag/swell and interruption. In order to regulate the dc-link capacitor voltage, Conventionally, a proportional controller (PI) is used to maintain the dc-link voltage at the reference value. The transient response of the PI dc-link voltage controller is slow. So, a fast acting dc-link voltage controller based on the energy of a dc-link capacitor is proposed. The transient response of this controller is very fast when compared to that of the conventional dc-link voltage controller. By using fuzzy logic controller instead of the PI controller the transient response is improved. The detailed simulation studies are carried out to validate the proposed controller. The performance of the proposed configuration has been verified through simulation studies using MATLAB/SIMULATION on a two-bus/two-feeder system.

Keywords: Power quality (PQ),MATLAB/SIMULATION unified power-quality conditioner (UPQC), voltage-source converter (VSC), fuzzy logic controller.

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43.

Authors: **Aditya Goyal, Akhilesh Bijalwan, Pradeep Kumar, Kuntal Chowdhury**

Paper Title: **Image Enhancement using Guided Image Filter Technique**

Abstract: In this paper we study and implement image enhancement aspect of guided image filtering. Principle objective of Image enhancement is to process an image so that result is more suitable than original image for specific application. Digital image enhancement techniques provide a multitude of choices for improving the visual quality of images. Guided image filter is an explicit image filter, derived from a local linear model; it generates the filtering output by considering the content of a guidance image, which can be the input image itself or another different image. Moreover, the guided filter has a fast and non-approximate linear-time algorithm, whose computational complexity is independent of the filtering kernel size. This paper will provide an overview of underlying concepts, along with algorithms commonly used for image enhancement.

Keywords: Digital Image Processing, Explicit image filter, Guided Image Filtering, Image Enhancement, Kernel.

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44.

Authors: **Akhilesh Bijalwan, Aditya Goyal, Nidhi Sethi**

Paper Title: **Wavelet Transform Based Image Denoise Using Threshold Approaches**

Abstract: This paper deals with the threshold estimation method for image denoising in the wavelet transform

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domain. The proposed technique is based upon the discrete wavelet transform analysis where the algorithm of wavelet threshold is used to calculate the value of threshold. The proposed method is more efficient and adaptive because the parameter required for calculating the threshold based on sub band data. The threshold value is computed by xσ2w0 /σ where x is the scale parameter which depends upon the sub band size and number of decomposition and σw0 is the noise variance estimation. σ are the wavelet coefficient variance estimation in various sub bands. Experimental results on several test images are compared with popular denoise technique from three aspects (PSNR, RMSE and CoC).

Keywords: Wavelet Thresholding, Image Denoising, Discrete Wavelet Transform.

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	Authors:	**Ashish Jaiswal , Santhosha Rao, Kumara Shama**
	Paper Title:	**Application Aware Energy Efficient Geographic Greedy Forwarding in Wireless Multimedia Sensor Networks**

45.

Abstract: Finding maximum number of node-disjoint paths for transmission has always been a prime aim to achieve reliability, security, load balancing and improved performance. Finding paths that lead to maximum network lifetime is the other extreme that is desired. Algorithm that aims at one of the requirements tends to oppose the other. In this paper, we propose an Application Aware Energy Efficient Geographic Greedy Forwarding (AAEEGF) routing algorithm for Wireless Multimedia Sensor Networks (WMSNs) that is a trade- off between finding maximum number of node disjoint paths and finding paths with maximum network lifetime. AAEEGF takes into account both the requirements of real time multimedia transmission and the realistic characteristics of WMSNs. It finds list of node-disjoint routing paths with improved lifetime with path delays less than time constraint of the application. AAEEGF supports three features: (1) hole-bypassing, (2) explore maximum number of node disjoint path, and (3) lifetime improvement of paths, at the same time. AAEEGF is a pure geographic greedy forwarding routing algorithm and is an extension to Two-Phase geographic Greedy Forwarding (TPGF) [1]. Exploring paths in AAEEGF is time constraint dependent. All the paths obtained as a result have path delay less than time constraint of application. Unnecessary paths, whose end-to-end delays may exceed time constraint, are not formed, thereby making such nodes to be available for other useful path formation. This point allows more nodes to be available for AAEEGF to explore more routing paths, and enables AAEEGF to be different from many existing geographic routing algorithms like TPGF. AAEEGF improves lifetime of the found paths within the time constraint. Both theoretical analysis and simulation comparison in this paper indicate that AAEEGF is highly suitable for multimedia transmission in WMSNs.

Keywords: node-disjoint path, NetTopo, TPGF, Wireless Mutimedia Sensor Networks

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46.

Authors:	**R.Lokesh Kumar, T.Gopalakrishnan, P.Sengottuvelan**
Paper Title:	**A Relational Based Fuzzy Clustering To Mine User Profiles for Web Directory Personalization**

Abstract: The log data at a search engine can be used to analyze users' search behavior and to develop search technologies to improve users' search experiences. Web usage mining performs mining on web usage data or web logs. A web log is a listing of page reference data/clickstream data. The behavior of the web page readers is imprint in the web server log files. By using the sequence of pages a user accesses, a user profile could be developed thus used in personalization. With personalization, web access or the contents of web page are modified to better fit the desires of the user and also to identify the browsing behavior of the user can improve system performance, enhance the quality and delivery of Internet Information services to the end user, and identify the population of potential customers. For this purpose a new clustering based approach is used, The proposed algorithm finds the meaningful behavior patterns extracted by applying efficient clustering algorithm, to log data. It is proved that performance of the proposed system is better than that of the existing algorithm. The proposed algorithm can provide popular information from web page visitors for web personalization.

Keywords: User profiles, web log data, clustering, Web Personalization.

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47.

Authors:	**Reena Dadhich, Bhavesh Mathur**
Paper Title:	**Measuring Reliability of an Aspect Oriented Software Using Fuzzy Logic Approach**

Abstract: Aspect Oriented Programming (AOP) refers to the programming approach which isolates secondary and supporting functions from the main program's business logic. The application's modularity increased in that way and its maintenance becomes significantly easier. Apart from the functional requirements while developing any software, we should also consider some non functional requirements like Reliability, Adaptability, and Suitability etc. In this paper an attempt has been made to quantifying the reliability of aspect oriented software using ISO/IEC 9126 Model. Due to the unpredictable nature of software quality attributes, the fuzzy multi criteria approach has been used to evolve the quality of the software.

Keywords: Aspect Oriented Programming (AOP), Cross Cutting Concerns, ISO/IEC9126 Model, Reliability

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Authors:	**Pushpaja V. Saudagare, D. S. Chaudhari**
Paper Title:	**Human Facial Expression Recognition using Eigen Face and Neural Network**

Abstract: In many face recognition systems the important part is face detection. The task of detecting face is complex due to its variability present across human faces including color, pose, expression, position and orientation. A face detection system based on principal component analysis algorithm and neural network techniques. Facial expression as a natural and efficient way of communication, it can also be considered as a special case of pattern recognition and also many techniques are available. In principal component analysis algorithm, eigenvector and Eigenfaces are identified the initial face image set and these faces are projected onto the Eigenfaces for calculating the weights. These weights created a face database to recognize the face by using neural network. Classification of face detection and token matching can be carried out any neural network for recognizing the facial expression.

Keywords: Eigen face, Eigenvector, face recognition, facial expression recognition and neural network

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Authors:	**Ravi Jon, Charlie Eapen, A.Ashhok, Nishita Sahoo, Anil Kumar**
Paper Title:	**Performance Analysis of Wireless Power Transfer to the Implantable Drug Delivery System using Helical Antenna with Inductive Coupling**

Abstract: In this paper, we explore the feasibility of wireless power transfer(WPT) to the drug delivery system(DDS) using helical antenna .We investigated the efficiency through different parameters of helical antenna. Helical Antenna (HA) is used here as a primary and secondary coil which works based on the inductive coupling. Through this technology we can reduce the wires or we eliminate the complications and infections caused by the wires. The aim of the system is transfer the power efficiently to the drug delivery system implanted in human body.

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	We studied the inductive coupling and coupling coefficient of the primary and secondary coil and we studied the electrical characteristics of the antenna with equivalent circuit. Inductive power transfer is the most common method of wireless power transfer to the implantable drug delivery system. For good inductive coupling and better efficiency the inductors should have high inductance. **Keywords:** Wireless power transfer, Helical antenna, Inductive coupling. **References:** 1. Andre Kurs, Aristeidis Karalis, Robert Mofatt, J.D. Joannopoulos, Peter Fisher, Marin Soljacic, "Wireless Power Transfer via Strongly Coupled Magnetic Resonance", Science Express, 7 June 2007, Vol. 3.17 no.5834,pp.83-86 2. Takehiro Imura, Hiroyuki Okabe, Yoichi Hori, "Basic Experimental Study on Helical Antennas of Wireless Power Transfer for Electric Vehicles by using Magnetic Resonant Couplings", Vehicle Power and Propulsion Conference, 2009. IEEE Pages 936-940 3. Edelman E.R. et al Journal of Biomedical Materials Research 1985, 67-83. 4. Amer S. & Badawy W. Current Pharmaceutical Biotechnology 2005, 57-64. 5. R. Puers and G. Vandevoorde, "Recent progress on transcutaneous energy transfer for total artificial heart systems," Artificial Organs, Vol. 25, Issue 5, pp. 400-405, May 2001. 6. P. Si, A. P. Hu, D. Budgett, S. Malpas, J. Yang and J. Gao, "Stabilizing the operating frequency of a resonant converter for wireless power transfer to implantable biomedical sensors," in Proc. 1st International Conference on Sensing Technology, Palmerston North, New Zealand, 2005. 7. S. I. Babic, C. Akyel, "Calculating Mutual Inductance Between Circular Coils with Inclined Axes in Air," IEEE Trans. Magnetics, vol. 44, no. 7, pp. 1745, July 2008 . 8. P. Si, A. P. HuJ. W. HsuM. Chiang, Y. Wang, S. Malpas, and D. Budgett, "Wireless Power Supply for Implantable Biomedical Device Based on Primary Input Voltage Regulation".	
50.	**Authors:**	**Sophia Comaneci.J, K.John Peter**
	Paper Title:	**Optimal Denoising Of an Image Using Anscombe Transformation Based Image Stabilization**
	Abstract: This paper proposes an effective inversing of the anscombe transformation with the help of adaptive bilateral image denoising algorithm. The Poisson noise removal is carried out into three steps. They are First, Image pre-processin,. Second, image denoising and Third, Image retrieval. In image pre-processing the images of any format can be got as input they are then converted into gray scale images for ease of functions and this paper uses anscombe transform to stabilize the image to a constant intensity level. This is very helpful in determining the noise at low counts. For image denoising, Multiscale variance stabilizing transform is the technique that is proposed to denoise the image. Now the noisy pixels in the images are removed. This paper also proposes a similar neighborhood function that is essential for filling the noisy pixels with the help of non-local means of similar neighbors. This is suitable for overall adjustment of the image. But in the case of texture images this technique is not applicable and in that condition the technique proposed is bilateral transformation of texture images. For this we use Bilateral image denoising and PCA analysis. This paper also proposes an approach to determine the best among the two processes in terms of performance and efficiency. Next step is very crucial because the application of inverse transformation is an critical factor. The inverse transform that is proposed in this paper is minimum mean square error method. This results in retrieval of an image with efficient filtering and inversing functions. **Keywords:** Anscombe transform, MS-VST, Bilateral denoising, PCA analysis, MMSE **References:** 1. B.Zhang, J.M.Fadili, and J.-L.Starck, "Wavelets, ridgelets, and curvelets for Poisson noise removal," IEEE Trans. Image Process., vol. 17, no.7, pp.1093–1108, Jul.2008. 2. S.Lefkimmiatis, P.Maragos, and G.Papandreou, "Bayesian inference on multiscale models for Poisson intensity estimation: Applications top hot on limited image denoising,"IEEE Trans. Image Process., vol.18, no.8, pp.1724–1741, Aug. 2009. 3. S.Ramani, T.Blu, and M.Unser, "Monte-Carlo SURE: A black- box optimization of regularization parameters for general denoising algorithms,"IEEE Trans. Image Process., vol.17, no.9, pp.1540–1554, Sep.2008. 4. M.Mäkitaloand A. Foi,"On the inversion of the Anscombe transformation in low count Poisson image denoising,"in Proc.Int. Workshop Local and Non –Local Approx. Image Process, Tuusula, Finland, Aug. 2009, pp.26–32. 5. K.Dabov, A.Foi, V.Katkovnik, and K. Egiazarian, "Color image denoising via sparse 3D collaborative filtering with grouping constraint in luminance chrominance space," presented at the IEEE Int. Conf. Image Process., SanAntonio, TX,Sep. 2007. 6. V.Katkovnik, K.Egiazarian, and J.Astola, "Local Approximation Techniques in Signal and Image Process." Bellingham, WA: SPIE, 2006, vol.PM157. 7. M.Jansen, "Multiscale Poisson data smoothing," J.Roy Statist.Soc.B, vol. 68, no.1, pp.27–48, 2006.	**246-250**
51.	**Authors:**	**S. Shiny, Agnes Anto**
	Paper Title:	**Proximal Interpolation in Image Zooming Using Advanced Neighborhood Algorithm**
	Abstract: Image zooming, the process of enlarging the image is a direct application of image interpolation procedures. Image interpolation is the process of determining the unknown values of an image at positions lying between some known values. The existing system used the PDE-based curvature interpolation method for image zooming by edge-detection. The proposed work also includes the neighborhood regions. The basic interpolation technique i.e. Proximal or nearest-neighbor interpolation is applied. In this technique, the output pixel is assigned the value of the pixel that the point falls within and no other pixels are considered. This is achieved using the advanced neighborhood algorithm for image zooming. Here the input image can be a grayscale, RGB, or binary image. This algorithm computes each output pixel by taking the value of each input pixel and distributes it to the corresponding output pixel's 3-by-3 neighborhood. The proposed algorithm performs median filtering for the image matrix using the 3-by-3 neighborhood as a smoothing procedure to reduce the artifacts like blurring, jagging and ghosting. The proposed zooming algorithm works with different image types.	**251-254**

Keywords: Curvature interpolation method, Edge-detection, Image zooming, Median filtering, Proximal interpolation.

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52.

Authors: **Varsha Karambelkar, A.A.Shinde**

Paper Title: **Testing Digital Signals by Low Cost ARM Based Logic Analyzer**

Abstract: Due to the fast development of electronic devices, the digital circuit designing takes up more and more percentage in total electronic developments thus in the process of debugging and doing validation in a digital system, one of the common task a designer need to do is the acquisition of digital waveforms. The waveforms can be captured by the device Logic Analyzer.
As digital circuit is too fast to be observed by a human being, the basic idea to capture waveforms at higher speed is to implement the design using ARM controller which internally uses RISC Machine unlike simple processors. ARM based embedded systems, providing a low-cost solution to meet the request of flexibility and testability
Logic analyzer is a dedicated application The main objective is to use module as powerful Lab equipment to check and verify the design under test (digital circuit) for design and verification engineers with smaller size and less expensive.

Keywords: Logic analyzer, ARM, RISC.

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53.

Authors: **Vishnu Vardhan**

Paper Title: **Formation of Virtual Lenses with the Help of Puissance Radio Telescopic Satellites around the Planets**

Abstract: The technological development of humans has successfully faced all the brutal difficulties it came across. Today's world has almost nothing which it cannot achieve, yet the thirst for innovation has not decreased. We have the most puissance telescopes located at different parts of the world which can track pretty much information regarding the changes that occur in the celestial bodies in the outer space with in no time, but the changes that occur in them is much faster than the captivity speed of the telescopes . This is the point where we need to throw some light, to build something which is capable of capturing the fastest changes that happen in outer space. This paper deals with launching of radio telescopic satellites in orbits around the planets of our solar system. By launching radio telescopic satellites around some of the worthy planets in our solar system, the view of the multiverse will be improved beyond our imagination. This kind of placement of radio telescopic satellites around the planets will aid in taking a dynamic look at the changes that occur in the outer space and leaves us enough time to be on safe side before the actual disaster happens, more over this arrangement of telescopic satellites will help us to predict the change of path of celestial object in due course of time and also to track the most distant celestial bodies in the outer space.

Keywords: RTS, LEO, MEO, GEO, RT

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54.

Authors: **Chandu Kumari, T. Ravi Sekhar**

Paper Title: **SOC Implementation of Soft-Error Tolerance in Asynchronous Burst Mode Circuits**

Abstract: The problem of soft errors in asynchronous burst-mode machines (ABMMs), and we propose the solution is an error tolerance approach, which leverages the inherent functionality of Muller C- elements, along with a variant of duplication, to suppress all transient errors. The proposed method is more robust and less expensive than the typical triple modular redundancy error tolerance method and often even less expensive than previously proposed concurrent error detection methods, which only provide detection but no correction The solution is an error tolerance approach, which leverages the inherent functionality of Muller C-elements, along with a variant of duplication, to suppress all transient errors, which leverages a newly devised soft- error susceptibility assessment method for ABMMs, along with partial duplication, to suppress a carefully chosen subset of transient errors. Progressively more powerful options for partial duplication select among individual gates, complete state/output logic cones or partial state/output logic cones and enable efficient exploration of the tradeoff between the achieved soft- error susceptibility reduction and the incurred area overhead. Furthermore, a gate-decomposition method is developed to leverage the additional soft-error susceptibility reduction opportunities arising during conversion of a two-level ABMM implementation into a multilevel one. Extensive experimental results on benchmark ABMMs assess the effectiveness of the proposed methods reducing soft-error susceptibility, and their impact on area, performance, and offline testability.

Keywords: Asynchronous burst-mode circuits, soft errors,soft-error mitigation, soft-error susceptibility, soft-error tolerance.

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Authors: **Gagandeep, Aashima, Pawan Kumar**

Paper Title: **Analysis of Different Security Attacks in MANETs on Protocol Stack A-Review**

Abstract: A MANET is an infrastructure-less type network, which consists of number of mobile nodes with wireless network interfaces In order to make communication among nodes, the nodes dynamically establish paths among one another. The nature and structure of such networks makes it attractive to various types of attackers. In this paper we discuss various types of attacks on various layers under protocol stack. Different types of attacker attempts different approaches to decrease the network performance, throughput. In this paper the principal focus is on routing and security issues associated with mobile ad hoc networks which are required in order to provide secure communication. On the basis of the nature of attack interaction, the attacks against MANET may be classified into active and passive attacks. Attackers against a network can be classified into two groups: insider and outsider. Whereas an outsider attacker is not a legitimate user of the network, an insider attacker is an authorized node and a part of the routing mechanism on MANETs.

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Keywords: MANET, DoS, DSR, AODV

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56.

Authors: **Sukhdeep Kaur**

Paper Title: **Document Categorization Using Reinforcement Learning**

Abstract: Automatic categorization of documents has become an important research issue since the explosion of digital and online text information. The text information is stored in the form of files and documents and to extract this particular information, a well-defined process is followed. The organization of documents is not so easy task. So there is need to present these documents in a categorized form. A particular text document is categorized, on the basis of high frequency words. So, the main idea is to convert the unstructured documents into structured form. The final goal is to achieve high accuracy in the formation of categories by following particular steps.

Keywords: Document Categorization, Data Mining, Pre-processing.

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Authors: **Chhaya Dalela**

Paper Title: **Radio Measurements in the WiMAX Band of 2.3 GHz, in Coastal Zone for Different Transmitting Antenna Heights**

Abstract: In this paper, comparison of propagation prediction models for WiMAX at 2.3 GHz for different transmitting antenna height is presented and path loss for different models such as COST-231 Hata model, SUI model, the ECC model, ITU-R(NLOS) model for different transmitting antenna height is computed. The obtained path losses are graphically plotted for the better conclusion using the MATLAB. The paper studies the path loss models of the wideband channels at 2.3GHz for WiMAX.

Keywords: Pathloss; path loss exponent; propagation model; WiMAX, propagation.

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58.

Authors: **Pradeep Kumar, Rajat Chaudhary, Ambika Aggarwal, Prem Singh, Ravi Tomar**

Paper Title: **Improving Medical Image Segmentation Techniques Using Multiphase Level Set Approach Via Bias Correction**

Abstract: In this paper, we present a new variational formulation for geometric active contours that forces the level set function to be close to a signed distance function, and therefore completely eliminates the need of the costly re-initialization procedure. Our variational formulation consists of an internal energy term that penalizes the deviation of the levelset function from a signed distance function, and an external energy term that drives the motion of the zero level set toward the desired image features, such as object boundaries. The resulting evolution of the level set function is the gradient flow that minimizes the overall energy functional.

Keywords: image segmentation, level set formulation, Gradient, bias field and MRI

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59.

Authors: **Manoj. B, Manjula N Harihar**

Paper Title: **Image Encryption and Decryption using AES**

Abstract: In today's world most of the communication is done using electronic media. Data Security is widely used to ensure security in communication, data storage and transmission. We have Advanced Encryption Standard (AES) which is accepted as a symmetric cryptography standard for transferring block of data securely. The available AES algorithm is used for text data and it is also suitable for image encryption and decryption to protect the confidential image data from an unauthorized access. This project proposes a method in which the image data is an input to AES Encryption to obtain the encrypted image, and the encrypted image is the input to AES Decryption to get the original image. In this paper, we implement the 128 bit AES for image encryption and decryption which is synthesized and simulated on FPGA family of Spartan-6 (XC6SLX25) using Xilinx ISE 12.4 tool in Very high speed integrated circuit Hardware Description Language (VHDL) and shall be verified with the help of its simulation result.

Keywords: Cryptography, AES, Image Encryption, Decryption, FPGA, S-box, Cipher Text, NIST, FIPS.

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60.

Authors:	**Raghuwar Sharan Soni, Deepak Asati**
Paper Title:	**Development of Embedded Web Server Configured on FPGA Using Soft-core Processor and Web Client on PC**

Abstract: A soft processor is an Intellectual Property (IP) core that is implemented using the logic primitives of the FPGA. Key benefits of having a soft FPGA-based processing system are re programmability and re-configurability. There are various soft-core processors provided by different vendors such as Microblaze (Xilinx), NiosII (Altera), OpenRISC (developed by OpenCores) etc. Microblaze processor is one of those soft-core processor developed by Xilinx which models specific processor using HDL and can be customized (and synthesized) for any application. The Microblaze soft processor is a soft 32-bit RISC processor. FPGA with soft core processor has wide variety of applications mainly in automobiles, medical field, entertainment electronics and industrial control system. In this project, a soft processor (Microblaze) based embedded system is developed with RS-232 serial interface, Ethernet interface, 32MB SDRAM, 4MB PROM (platform flash), 16x2 LCD interface, 8 digital inputs and 8 digital outputs. The embedded systems is connected to the internet and remotely controlled and monitored.
The TCP/IP stack is ported on Microblaze and Embedded Webserver is developed on FPGA board using HTTP communication protocol. A Web browser based interface (client) is developed in VB.NET (with HTML and AJAX Controls) on Personal Computer (PC) to communicate with the FPGA board using HTTP through TCP/IP protocol. Ethernet connectivity is tested between Embedded Web server on Microblaze and Web client on PC. Messages sent from the client side can be displayed over LCD on Webserver. Client can send commands to board for controlling IO's, for reading from RAM and for writing on RAM. Status check command sent by the client computer to Webserver updates the browser on PC to show status of IO's. It can also be used as slave processor to provide Ethernet connectivity to any 8- bit, 16-bit and 32- bit processors.
TFTP server is also deployed in the Embedded Webserver Card so as to provide file transfer access to/from the client (Computer / Other Processor)

Keywords: Embedded Webserver, Ethernet, FPGA, Intellectual Property (IP), Microblaze, Soft-core Processor and TFTP Server.

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61.

Authors:	**Amit Gupta, Sudeep Baudha, Brajesh Mishra**
Paper Title:	**RFID (NFC) Antenna Design for Dedicated Mobile Applications at 88 MHz Frequency**

Abstract: Near field communication (NFC) is a set of standards for smart phones and similar devices to establish radio communication with each other by touching them together or bringing them into close proximity, usually no more than a few centimeters. Present and anticipated applications include contactless transactions, data exchange, and simplified setup of more complex communications such as Wi-Fi Communication is also possible between an NFC device and an unpowered NFC chip, called a "tag" Later part of paper discuss about the RFID antenna which is tuned on 88 MHz frequency, this frequency is not yet allotted for any mobile application, so if allotted on such frequency the communication might become revolutionary. New designs with new results and all other parameters to describe the antenna design in detail.

Keywords: Wi-Fi Communication is also possible between an NFC device and an unpowered NFC chip, called a "tag"

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62.

Authors:	**Priti Trivedi, Sudeep Baudha**
Paper Title:	**Development, Integration and Verification of VHDL code for FPGA based Beam Position Measurement Board**

Abstract: Continuous increase in FPGA capacity, architectural features and performance, along with decrease in cost, results in an ideal solution to hardware system designers. The embedded designer who is serious about

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increasing performance must consider the FPGAs ability to accelerate the processor performance with dedicated hardware. Although this technique consumes FPGA resources, the performance improvements can be extraordinary. Thus FPGA based VME Bus compatible four channels ADC card is used to acquire the Beam Position Indicator (BPI) electrode data, and calculate the beam position using an intelligence device (FPGA) on board. This card is having on-board 4-channel ADC (with signal conditioning electronics) and 8-channel Opto-coupler inputs. Additionally there is a memory available on-board to save calculated beam position. In all, the system is VME based so this card is a VME slave board where VME CPU card will be able to control the card and read the calculated beam position whenever it is available in memory.

Keywords: FPGA, VME, 4-channel ADC, e-beam position and BPI.

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Authors:	**Chitra M, Roopa M**
Paper Title:	**A High Performance Binary Data Compression Technique Using Low Puncturing Turbo Codes**

Abstract: In this paper, we present a distributed coding technique for binary data compression. The performance of the proposed architecture is higher when compared with the existing techniques. The complexity of the traditional encoder is distributed to the decoder. Thus the proposed architecture can be used for the applications where the complexity of decoder can be more than that of an encoder.

Keywords: Distributed coding, Binary compression, side information, encoder.

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Authors:	**Parvez Mahmud, Shahjadi Hisan Farjana**
Paper Title:	**Design and Construction of Refrigerant Charge Level Detecting Device in HVAC/R System with Microcontroller**

Abstract: A charge level detecting device in residential and light commercial heating, ventilation, and air-conditioning (HVAC) systems and in refrigeration systems is used to detect the sufficiency of refrigerant or charge level whether it is proper or not. The most common problems affecting residential and commercial HVAC/R systems are slow refrigerant leaks, improper refrigerant charge and charging device. The usual methods for charge level detection are sight glass method and system high side and low side pressure measurement method. The limitation of sight glass method is it works only if a predictable amount of refrigerant remains in one part of system or constant flow of refrigerant is maintained throughout the system. Pressure of any HVAC/R system cannot be measured in a running system, and charge leaks occur in case of pressure method. Refrigerant charge level detecting device employs a method of determining if the refrigerant charge is within an acceptable range, including the steps of measuring the superheat and subcool temperatures at compressor inlet and condenser outlet. Actual superheat and actual subcooling values are calculated and these values are thus compared with target superheat and target subcool values in microcontroller device, thus obtained from manufacturers chart for particular type of refrigerant, which values depends on outdoor dry bulb temperature and indoor wet bulb temperature on system operating situation and shows the charge status result. The refrigerant charge indicator is based on the fact that when refrigerant starts to leak, the evaporator coil temperature starts to drop and the level of liquid sub cooling drops. An over charge in this system results in compressor flooding, damaging to the motor and mechanical components. Inadequate refrigerant charge can lead to increased power consumption, thus reducing system capacity and efficiency.

Keywords: Superheat, subcooling, refrigerant charge level, microcontroller.

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Authors: **M. A. Parvez Mahmud, Shahjadi Hisan Farjana**

Paper Title: **Wind Power Technology Schemes as Renewable Energy in Bangladesh**

Abstract: Wind energy is one of the renewable means of electricity generation that is a part of the worldwide discussion on the future of energy generation and use. Usage of wind energy has been increased in recent times especially because it is a running demand to use alternative energy sources and reduce fossil fuels consumption. This paper presents the schemes to use this technology in Bangladesh because it has a 724 km long coastline and many small islands in the Bay of Bengal, where strong southwesterly wind and sea breeze blow in the summer season and there is gentle northeasterly wind and breeze in winter months. It could produce 2,000 MW of power in the coastal belt installing 30 windmills per square km. The windmills that can be installed in the coastal belts can sustain 250 km per hour cyclonic storm. The scope of setting large scale power plant in coastal areas will be discussed in this paper.

Keywords: Wind Power, Renewable Energy, Wind Turbines, Pressure Difference, Alternative Energy Sources, Cost Analysis, Wind Farm

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Authors: **Pooja Kannadas, S.Joshua Daniel**

Paper Title: **Energy Efficient Conflict Free Query Scheduling For Wireless Sensor Networks**

Abstract: There is an increase in demand of high performance query services, with the emergence of high data rate applications. To meet this challenge we propose Dynamic Conflict-free Query Scheduling (DCQS), a novel scheduling technique for queries in wireless sensor networks. In contrast to earlier Time Division Multiple Access (TDMA) designed for query services in wireless sensor networks. DCQS has several unique features. First, it optimizes the query performance through conflict-free transmission scheduling based on the temporal properties of queries in wireless sensor networks. Second, it can adapt to workload changes without explicitly reconstructing the transmission schedule. Furthermore, DCQS also provides predictable performance in terms of the maximum achievable query rate. The nodes operate over the time-varying wireless channel whose quality significantly fluctuates over time due to fading and interference. Such time-varying nature of wireless channel imposes many constraints in designing an energy-efficient transmission scheme. In this work, we derive a tight bound on the maximum query rate achieved under DCQS. Such a bound is of practical importance since it can be used to prevent network overload. NS2 simulations demonstrate that energy efficient DCQS significantly outperforms 802.11 in terms of energy efficiency, over head, query latency, and throughput, thereby increasing the network life time.

Keywords: DCQS, TDMA, NS2

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67.	**Authors:**	**K. P. Shashikala, K. B. Raja**
	Paper Title:	**Palmprint Identification Based On DWT, DCT And QPCA**

Abstract: An individual can be identified effectively using palmprints. In this paper we propose palmprint identification based on DWT, DCT and QPCA (PIDDQ). Histogram equalization is used on palmprint to enhance contrast of an image. The DWT is applied on Histogram equalized image to generate LL, LH, HL and HH bands. The LL band is converted into DCT coefficients using DCT. QPCA is applied on DCT coefficients to generate features. The test and database palmprint features are compared using Euclidean Distance (ED). It is observed that the proposed method gives better performance compared to existing method.

Keywords: Palmprint Identification, DWT, DCT, QPCA, ED.

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68.	**Authors:**	**Priyanka Pitale, Asha Ambhaikar**
	Paper Title:	**Sensitive Region Prediction using Data Mining Technique**

Abstract: Surveys provide huge amounts of healthcare data which, unfortunately, are not used to discover hidden information for effective decision making. Discovery of hidden patterns and relationships can provide a powerful prediction technique for predicting regions which are sensitive for several diseases. Advanced data mining techniques can help to predict future number of cases of a disease.
This research has developed a prototype, Sensitive Region Prediction System (SRPS), using data mining technique, called Linear Regression. Using historical data from various sources such as regional surveys and health reports, it can predict the number of cases of malaria disease. SRPS is user-friendly, platform independent, scalable, portable and expandable. It is implemented on the Java platform.

Keywords: Decision Making, Hidden Patterns, Java, Linear Regression, SRPS

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69.

Authors: **Tripti Sharma, Sarang Pitale**

Paper Title: **Chapter extraction from research documents using Meta-Content Framework**

Abstract: Automatic chapter extraction from electronic documents has always been an interesting task for researchers who are continuously engaged in subjective answering systems. Researchers are agreed on the fact that chapter extraction is one of the key processes to generate the model answers. The proposed paper presents a framework to extract the chapter contents from the research documents. The framework is implemented using Java technology and iText library , It takes research document of PDF format as an input and extracts the chapter contents in simple HTML format so that it can be easily rendered in web browser.

Keywords: PDF, Java, iText, Html.

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70.

Authors: **Shruti Wadalkar, S.S. Pimplikar**

Paper Title: **Role of Project Manager from the Client's Side on the Performance of a Construction Project**

Abstract: In the developing Country like India there are various small construction companies involved in building and real estate sector. In such company project management team plays a very important role in success of the project from Preformulation to the completion stage of the project. Such project management team mainly consists of project manager and project engineer or supervisor. As the project manager is the leader of this team, it is required by him to acquire all the skills required for the better performance of his role. In the present work, the correlation coefficient between delay in the work, project manager and contractor is determined. On the basis of value of the coefficient of correlation, required project manager skills and classification of skills are stated.

Keywords: Coefficient, competency, Correlation, Project lifecycle.

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Authors:	**Shalem Raj Meduri, P. S. Bramhanandam**
Paper Title:	**Comparison of Dilution of Precision (DOP) in Multipath and Error free Environment using Single Frequency Global Positioning System**

Abstract: Global Positioning System (GPS) is a satellite based radio navigation system intended to provide highly accurate three dimensional positions and precise time on a continuous global basis. Usually, GPS accuracy is limited by several factors such as atmospheric, receiver and satellite based errors. Among them, Dilution of Precision (DOP) and multipath errors are very important to investigate the error for improving positional accuracy. In this paper, single frequency receiver data analysis in static mode is carried out. Using the GPS data, Horizontal Dilution of Precision (HDOP) results were presented. The presented preliminary results would be useful for developing suitable techniques for improving single frequency GPS positional accuracy by taking the HDOP errors into the consideration.

Keywords: GPS, NMEA and HDOP.

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72.

Authors:	**Rahul Singh Rathore, Sudeep Baudha, Neha Shrivastave**
Paper Title:	**Design and Simulation of Triangular Arm Antenna for WLAN Application**

Abstract: In this paper, A newly design technique for enhancing Bandwidth that improves the performance of a conventional microstrip patch antenna is proposed. This paper presents a novel wideband triangular arm antenna. The design adopts contemporary techniques; A triangular arm patch antenna structure. The effect of these techniques and by introducing the novel single shaped patch, offer a low profile, broadband, high gain, and compact antenna element. The result showed satisfactory performance with maximum achievable return loss –19db and a fractional impedance bandwidth of 2.32GHZ-2.72GHZ. The design is suitable for WLAN, mobile communication, satellite communication & WPAN.

Keywords: 2.32GHZ-2.72GHZ. The design is suitable for WLAN, mobile communication, satellite communication & WPAN.

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Authors:	**Kaushik Sanganabhatla**	
Paper Title:	**Comparison of Security Algorithms in a Distributed Monitoring Environment**	

Abstract: In a Real time wireless environment like WIFI, we send the data in the form of packets from one location to other. While sending the data to destination safely, we maintain some security algorithms for the confidentiality of the data. We use the knowledge of many pre- existing algorithm mechanisms for the smooth flow of the data packets in a timely & secured manner. Here, the main objective is to compare the various security algorithms in ganglia distributed monitoring system. The research stimulates that comparing the constant algorithms (1-point/minimal & 10-point/maximal) with the variable (optimal) algorithms. From these it can be concluded that the CPU memory usage is less in optimal algorithm in terms of against high load, bytes- in, bytes-out characteristics.

Keywords: 1-point or minimal, 10point or maximal, optimal algorithms and ganglia.

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Authors:	**Penchalababu.V, Chandrakala.B, Gopal Krishna**	
Paper Title:	**A Survey on Modified PWM Techniques for Z-Source Inverter**	

Abstract: The proposed work presents a Z-source inverter which can be proposed as an alternative power conversion concept for variable speed AC drives. It has both buck and boost capabilities as they allow operation of the inverter in the shoot through state. It uses an exclusive Z-source network (LC component) to DC-link in between inverter and the DC source. By controlling the shoot-through duty cycle of IGBTs in inverter system, reduces the line harmonics, improves power factor, and extends output voltage range..This Paper presents different switching techniques such as Simple boost pwm, Constant boost pwm, Maximum boost pwm, Sine carrier pwm and Modified SVPWM.

Keywords: pulse width modulation, Modified SVPWM, z-source inverter

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75.	**Authors:**	**D.Preethi, A.M Vijaya Prakash**
	Paper Title:	**A Low Power VLSI Architecture for Image Compression System Using DCT and IDCT**

Abstract: Image compression is an important topic in digital world. It is the art of representing the information in a compact form. This paper deals with the implementation of low power VLSI architecture for image compression system using DCT. Discrete Cosine Transform (DCT) is the most widely used technique for image compression of JPEG images[5] and is a lossy compression method.. The architecture of DCT is based on Lo-effler method[1] which is a fast and low complexity algorithm. In the proposed architecture of DCT multipliers are replaced with adders and shifters. Low power approaches like Canonic signed digit representation for constant coefficients and sub-expression elimination methods has been used. The 2D DCT is performed on 8x8 image matrix using two 1D DCT blocks and a transposition block. Similar to DCT, the IDCT is also implemented using the Lo.effler algorithm for IDCT. Verilog HDL is used to implement the design. ISIM of XILINX is used for the simulation of the design. CADENCE RTL compiler is used to synthesize and obtain the detailed power and area reports of the design. MATLAB is used as the support tool to obtain the input pixel values of the image and the results from both ISIM and MATLAB are compared.

Keywords: Discrete Cosine Transform (DCT), Low Power, Canonic Signed Digit (CSD), Common Sub expression Elimination (CSE), JPEG, VLSI.

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76.	**Authors:**	**Sandeep Kaur**
	Paper Title:	**Mouse Movement using Speech and Non-Speech Characteristics of Human Voice**

Abstract: In the modern era, mouse control has become an important part of human computer interaction which is difficult for physically disabled people. This research paper presents a system called as Vocal Mouse (VM). This device will allow users to continuously control the mouse pointer using words as well as sounds by varying vocal parameters such as vowel quality, loudness and pitch. Traditional method of using only standard spoken words was inefficient for performing continuous tasks and they are often recognized poorly by automatic speech recognizers. Now, VM will allow users to work on both continuous and discrete motion control. This includes commands given as words or regular sounds consisting of vowels and consonants. Low-level acoustic features are extracted in real time using LPC (Linear Predictive Coding). Pattern recognition is performed using a new proposed technique called "minimum feature distance technique". This proposed technique is based on calculating distances between the spoken word and each stored word in the library during training process. Features from pattern recognition module are processed to produce output in the form of cursor's 2-D movement. VM can be used by novice users without extensive training and it presents a viable alternative to existing speech-based cursor control methods.

Keywords: acoustic features, continuous speech recognition, minimum feature distance, motor impairment, vocal sounds.

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77.

Authors: **Ketki Ram Bhakare, R.K.Krishna, Samiksha Bhakare**

Paper Title: **Distance Distribution Approach of Minimizing Energy Consumption in Grid Wireless Sensor Network**

Abstract: A wireless Sensor Network (WSN) is a wireless network consisting of several tiny sensing nodes.Wireless Sensor Network (WSN) is an emerging technology. It is predicted that in future, WSN will change the human life totally. Energy minimization in Wireless Sensor Network (WSN)is one of the challenging issue. The sensor nodes are continuously sense and transmit the data. WSN have a wireless nature, due to this has a limited lifetime. So increase the lifetime of Wireless Sensor Network and Minimize energy cost in wireless sensor network are an important problem. To solve this problem clustering technique are always used, among the entire clustering technique grid based clustering is more efficient. Most of the work uses the average distance within the grid & between neighboring grids for calculating the average energy consumption; by using this average distance model we found that it underestimate the actual value of average energy consumption. So we propose a better model for energy consumption i.e. Distance distribution model, this model gives the accurate estimation of energy consumption. Distance distribution model can be used to optimize grid size and minimize energy consumption.

Keywords: Average Energy Consumption, Clustering, Distance Distribution Sensor,Grid based Clustering, power consumption, WSN

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Authors: **Rajeswar Lal Dua, Anjali Nigam, Pooja Yadav**

Paper Title: **A Method for Fine Tuning Of Resonance Frequency of Patch Antenna**

Abstract: When a patch antenna is fabricated, size of the as-fabricated resonant patch may be slightly different from its designed value due to tolerances in the fabrication operations. This will alter the resonance frequency. To overcome this problem this paper presents a new method for fine tuning the resonance frequency by dielectric engineering. This approach is especially suited to LTCC and similar processes where the antenna dielectric is composed of several layers. Composite dielectric constant of this multilayer structure is altered in such away that the resonant frequency is set back to the designed value. A cavity is cut below the patch in one or more dielectric layers. This paper investigates the effect of cavity size on shift in resonance frequency. HFSS software has been used for simulations. Three different dielectric materials were investigated for several resonant frequencies. f/f0 was plotted against Area Ratio (AR) to generalize the findings. Area Ratio is the ratio of area of cavity to the area of the patch, f is the resonance frequency for a given cavity area and f0 is its value without any cavity. Depth of the cavity may be equal to either one or two dielectric layer thickness in a four layered dielectric structure. Very interesting results have been obtained. For all ε and all f/f0 the curve can be described by the equation of the form f/f0 = □R2+□R+1 where R is the area ratio. This mathematical model is true up to R=1.27. After this saturation effects set in and the curve changes to a straight line f/f0 = mR+□. Further work is being carried out.

Keywords: LTCC ,Composite Dielectric Constant,area ratio, multilayer structure.

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Authors: **Nikunj V. Patel, R. K. Patel, U. J. Patel, B. P. Patel**

Paper Title: **A Novel Approach for Selection of Tool Insert in CNC Turning Process Using MADM Methods**

Abstract: In modern decision science the Multiple attribute decision making (MADM) is playing an important role for selection of best from number of alternative. It has been applicable in various areas such as society, economics, military, management, manufacturing, etc., and has been receiving more and more attention over the last decades.

To date, however, most research has focused on single-period multi-attribute decision-making in which all the original decision information is given at the same period, and a number of methods have been proposed to solve this kind of problems.

In this research work we have considered a novel approach for optimum cutting tool insert selection strategy. In this approach, two well-known Multiple Attribute Decision- Making (MADM) methods such as Simple Additive Weighting (SAW) and Weighted Product Method (WPM) use for a case study of tool insert selection for better surface finish in CNC (Computer Numerical Control) turning operation. In these methods their relative performance are compared with respect to ranking of alternative and from ranking we have selected best tool insert for better surface quality during turning operation on alloy steel using CNC turning centre.

Keywords: MADM, SAW, WPM, Surface roughness

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Authors: **Alaknanda Mane, S.S.Pimplikar**

Paper Title: **Dispute – A Case Study**

Abstract: One of the greatest challenge facing the construction industry during the last couple of decades has been how to resolve disputes arising in construction contracts' in a timely and efficient manner with minimal financial costs, without hindering the pre-planned end results on a construction project.

Wide scale adoption of Dispute Review Boards (DRBs), sometimes also called Dispute Adjudication Boards (DABs), in large size engineering projects construction contracts is just more than a decade old in the advanced world. During this period, DRBs have been found ideally suited to dispute resolution process in large size projects involving sophisticated technology and Intricate construction techniques such as in tunnels & underground construction, heavy industrial & process buildings, hydro engineering power projects, bridges & highways and marine works.

Keywords: Wide scale adoption of Dispute Review Boards (DRBs), sometimes also called Dispute Adjudication Boards (DABs),

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Authors: **V.Radhika, K.Baskaran, N.Krithika**

Paper Title: **A Survey - Power Management in Multicore System On-a-Chip (SOC)**

Abstract: Multi core systems running multiple process, needs a power management technique which is able to

provide tradeoff between power and performance. Power management refers to the generation and control of regulated voltages required to operate an electronic system. With growing power management concern there is necessity to develop an efficient voltage regulation technique to improve the performance of any system. In the present scenario power supply design must be integrated within the system to improve the efficiency. Integrated components like switching regulator, linear regulators, and voltage reference are typical elements of power management.

Keywords: Linear regulator, power management, power converters, switching regulator.

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Authors: **Padmini Sahu, Anurag Singh Tomer**

Paper Title: **Speed control of PMBLDCM drive using Power Factor Correction (PFC) Convertor**

Abstract: This paper aims at an improve speed quality employing buck half-bridge DC-DC converter is used as a single-stage power factor correction (PFC) converter for feeding a voltage source inverter (VSI) based permanent magnet brushless DC motor (PMBLDCM) driven air condition. This PFC converter is front end diode bridge rectifier (DBR) fed from single-phase AC mains and connected to a three phase voltage source (VSI) feeding the permanent magnet brushless DC motor (PMBLDCM). The PMBLDCM is used to drive a compressor load of an air conditioner through a three-phase VSI fed from a controlled DC link voltage. The speed of the compressor is controlled to achieve energy conservation using a concept of the voltage control at DC link proportional to the desired speed of the PMBLDCM. Therefore the VSI is operated only as an electronic commutator of the PMBLDCM. The stator current of the PMBLDCM during step change of reference speed is controlled by a rate limiter for the reference voltage at DC link. The proposed PMBLDCM drive with voltage control based PFC converter is designed, modeled and its performance is simulated in Matlab- Simulink environment for an air conditioner compressor driven PMBLDC motor.

Keywords: PFC, PMBLDCM, Air Conditioner, Buck Half Bridge Converter, Voltage Control, VSI.

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Authors: **I.Diana Jeba Jingle, Elijah Blessing Rajsingh, P.Mano Paul**

Paper Title: **Distributed Detection of DoS Using Clock Values in Wireless Broadband Networks**

Abstract: Wireless broadband networks are most vulnerable to denial-of-service attacks where attackers can disrupt legitimate communication between hosts in a network by flooding unwanted traffic between legitimate hosts. Flooding attack at the transport layer affects the TCP's 3-way handshake process, thereby denying the services of TCP. It also denies the services of UDP. This paper proposes a novel flooding attack, the most severe denial-of-service attack that occurs at the transport layer of the internet. The main objective of this approach is to install local and global monitoring agents at various points in order to monitor and filter real-time TCP traffic and UDP traffic thereby allowing legitimate traffic to flow in the network during attack traffic filtration process and to avoid buffer overflow at the monitoring agents. Also, a novel algorithm has been proposed by taking the clock values of each node into account for effective detection of the attack. This distributed defense mechanism reduces the burden on a single global monitoring agent thereby introducing local monitoring agents at various points in the network. The performance results show that this approach effectively and accurately detects and filters DOS attacks within a short period.

Keywords: DOS, Flooding, Handshake, Spoofing.

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Authors: **V.Shanmugasundaram, A.R Rajkumar, T.Jayabarathi**

Paper Title: **Load Frequency Control Using Optimal PID Controller for Non-Reheat Thermal Power System with Tcps Unit**

Abstract: The main objective of Load Frequency Control (LFC) is to regulate the power output of electric generator within an area, in response to the changes in system frequency and tie-line loading. Thus, LFC helps in maintaining the scheduled system frequency and tie-line power interchange with other areas within the prescribed limits. Most LFCs are primarily composed of an integral and PID controller. The integrator gain is set to a level that compromises between fast transient recovery and low overshoot in the dynamic response of the overall system. This type of controller is slow and does not allow the controller designer to consider the possible changes in operating condition and non-linearity in the generator unit. Moreover, it lacks in robustness. FACTS are designed to overcome the limitations of present non-reheat thermal-thermal power systems and enhance the power system stability. One of the promising FACTS devices is the Thyristor controlled phase shifter (TCPS) to alleviate this difficulty. TCPS is connected in the tie-line to self-tune the parameters of integral and PID controller. Two area system, have been considered for simulation of the proposed TCPS connected integral and PID controller .The performance of the Conventional controller, TCPS connected Integral and PID controller have beenCompared through MATLAB Simulation. The qualitative and quantitative comparisons have been carried out for Integral, PID controllers. The dynamic of performanceresponses of Integral and PID controller with TCPS shows that in terms of settling Time, peak overshoot and steady state error are greatly improved than that of without TCPS.

Keywords: Load Frequency Control, Power system, PID controller, Thyristor controlled Phase Shifter.

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85.

Authors: **Shobha Sharma**

Paper Title: **Ring Oscillator Comparative Analysis at 22nm with bulk And High-K Metal Gate CMOS Technology and frequency impact**

Abstract: As we progress toward higher technology nodes there are improvement in density, frequency of operation and low power dissipation along with increase in leakage current and power. This paper examines a CMOS 11 stage ring oscillator implemented at 22nm node with bulk technology and High K metal Gate technology. Supply voltage increase results in increase in oscillation frequency in both the technology as expected. The simulation result shows the average power dissipated is more in High K Metal Gate technology compared to Bulk technology but the output frequency is more in High K metal gate technology. This results in lower energy/cycle in High K metal gate technology Ring Oscillator comparatively and hence shows that for advanced technology nodes this technology is a better option with reduced leakage due to High K material used. The experimental set up uses Predictive Technology models of Arizona State University at the two technology node and HSPICE simulator is used to carry out simulations

Keywords: bulk CMOS,, high K, Ring Oscillator, PTM.

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86.	**Authors:**	**Charlie Eapen, A.K Jaiswal, Mukesh Kumar, Ravi Jon, A.Ashok**
	Paper Title:	**Improving the Efficiency of Wireless Sensor Networks through Signal Processing Techniques**

Abstract: The minimization of energy consumption in modern technology has become a crucial element of research in engineering it is not only advantageous to realizing versatile, robust designs, but also the demand of an environmentally-awakened society. In the case of wireless networking, discovering energy-efficient solutions is just as important to the practicality and success of the technology as it is to commercialization and public reception. In this paper we show that a large portion of the beamforming gains can be realized even with imperfect synchronization corresponding to phase errors with reasonably large variance. We present a master-slave architecture where a designated master transmitter coordinates the synchronization of other (slave) transmitters for beamforming. We observe that the transmitters can achieve distributed beamforming with minimal coordination with the Base Station using channel reciprocity. Thus, inexpensive local coordination with a master transmitter makes the expensive communication with a distant Base Station receiver more efficient.

Keywords: Wireless Sensor Network (WSN), Master-Slave Architecture, Signal Processing.

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87.	**Authors:**	**Deepthi chamkur .V , Vijayakumar.T**
	Paper Title:	**Reliable Routing & Deadlock free massive NoC Design with Fault Tolerance based on combinatorial application.**

Abstract: Technological evolution enables the integration of billions of transistors on a chip. As VLSI technology scales, and processing power continues to improve, inter-processor communication becomes a performance bottleneck. On-chip networks have been widely proposed as the interconnect fabric for high performance SoCs. Recently, NoC architectures are emerging as the candidate for highly scalable, reliable, and modular on-chip communication infrastructure platform. This paper proposes the generalized binary de Bruijn (GBDB) graph based on combinatorial application as a reliable and efficient network topology for a large NoC. We propose a deadlock free & reliable routing algorithm to detour a faulty channel between two adjacent switches. In this implementation, using just two-layer VLSI layout, we can implement a NoC with any desired number of nodes. Note that current VLSI technology allows more than two wiring layers and the number is expected to rise in the future. Our experimental results show that the latency and energy consumption of the generalized de Bruijn graph are much less than those of Mesh and Torus. The low energy consumption of a de Bruijn graph-based NoC makes it suitable for portable devices which have to operate on limited batteries. Also, the gate level implementation of the proposed reliable routing shows small area, power, and timing overheads due to the proposed reliable routing algorithm.

Keywords: Network on chip (NoC), combinatorial application, energy consumption.

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Authors:	**Shashiraj Teotia, Sohan Garg**
Paper Title:	**A Characteristic Study of Mobility Models Prediction Methods for MANETs**

Abstract: A Mobile Ad hoc Network (MANET) is a collection of wireless mobile nodes forming a network without using any existing infrastructure. All mobile nodes function as mobile routers that discover and maintain routes to other mobile nodes of the network and therefore, can be connected dynamically in an arbitrary manner. The mobility attribute of MANETs is a very significant one. The mobile nodes may follow different mobility patterns that may affect connectivity, and in turn protocol mechanisms and performance. Mobility prediction may positively affect the service- oriented aspects as well as the application-oriented aspects of ad hoc networking. At the network level, accurate node mobility prediction may be critical to tasks such as call admission control, reservation of network resources, pre-configuration of services and QoS provisioning. At the application level, user mobility prediction in combination with user's profile may provide the user with enhanced location-based wireless services, such as route guidance, local traffic information and on-line advertising. In this chapter we present the most important mobility prediction schemes for MANETs in the literature, focusing on their main design principles and characteristics.

Keywords: MANETs, Cluster, Clustering, Global Positioning System (GPS), Mobility Prediction, Network Scalability, Signal attenuationIntroduction

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Authors:	**Sohrab Mirsaeidi, Mohammad Reza Miveh, Majid Gandomkar**
Paper Title:	**Evaluation of Dynamic Stability During a Symmetrical Three-Phase Short Circuit at Machine Terminals of Siah Bishe Pumped Storage Power Plant**

Abstract: This paper presents a survey on the research and applications of the pumped storage plants based on the published papers in trying to provide a suitable picture of the development of this electric load regulation approach. Moreover, the paper summaries two separate pumped storage power plants projects, one in America (Seneca) and another in Iran (Siah Bishe) from the following point of view:

- The operation of power plant generator/motor during day and night
- Introduction of starting system in motors state
- Technical, economic and environmental aspects of such power plant
- Determination of system efficiency

Since there are some experiences with Siah Bishe power plant project, the performances of the plant in dynamic stability improvement of the network following a symmetrical short circuit is analyzed. Based on the obtained results, it becomes clear that the plant can have great effect on the recovery of the network dynamic and transmitted energy between the synchronous machines installed in the plant and the network. High speed response is the most important factor which enhances the small signal stability of the system. This function of the plant can be critical in the fault events.

Keywords: Pumped Storage, Dynamic Stability, load regulation, Siah Bishe power plant.

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Authors:	**Mohammad Reza Miveh , Sohrab Mirsaeidi**
Paper Title:	**Introduction and Evaluation of Teleprotection Systems in Micro-Grids**

Abstract: A micro-grid is an aggregation of electrical and heat loads and small capacity micro-sources operating as a single controllable unit at the low or medium voltage level. Nowadays, digital telecommunications have been used in many industrial applications which micro-grid protection has also been benefited. Occurred challenges in distribution network caused by micro-grids presence, telecommunication and distribution engineers failure in recognizing the protection schema requirements and telecommunication networks restrictions always have made problems in implementation and utilization of the protection schema. In this paper, in addition to introducing types of telecommunication technology and protection system, problems existed in applying the digital telecommunication network is also evaluated for protection purpose in micro-grids and some points which a schema should consider for teleprotection system to make improvement and dependability is also explained.

Keywords: Micro-grid, Protection, Teleprotection, Telecommunication.

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Authors: **N.P. Zinjad, S. S. More**

Paper Title: **Energy Efficiency in Data Centers: How to Reduce Power Consumption in Data Centers by Optimum UPS Loading**

Abstract: Computation and data center has a huge value to modern enterprise. This has resulted in the installation of millions of data centers in business around the globe. Historically, the cost to power and cool these facilities was small relative to the investment in servers, storage units and other equipments. Today, however, the annual power and cooling costs of typical data centers are almost equal to the cost of hardware. In the past decade, India has witnessed an exponential increase in the demand for digital storage, from 1 petabyte in 2001 to more than 34 petabytes by 2007. They also continue to grow at a compounded rate of 25-30%. Datacenter growth is basically driven by increasing requirements from the sectors such as financial institutions, telecom operators, manufacturing and services. While large financial institutions and telecom companies are likely to build captive Datacenters for hosting their growing data storage needs. Datacenter service providers are expected to invest significantly to multiply their capacities, so as to fulfill the demand arising from small and midsize users. Datacenter is highly energy intensive. With the increasing energy cost, the increase in operational cost is inevitable. Therefore it becomes necessary to reduce the energy consumption to offset the increasing operational cost and to maintain competitiveness. Existing Datacenters need to adopt the best practices in design, operation and maintenance to achieve operational excellence. The increasing IT business process outsource from foreign countries has resulted in phenomenal growth of Datacenters in India. The total datacenter capacity in India is growing at a rapid pace and is expected to exceed 5.1 million square feet by 2012. The primary scope of this paper is to provide a framework in which data centers, large and small, could analyze and reduce their power consumption. This paper provides a quantitative approach to understanding energy efficiency within a server and within a data center. A panorama for power minimization and energy efficiency beginning with the basics of dual in line memory modules (DIMM) selection, configuring processors with reduced power states, options for constantly spinning disks, power management features in operating systems and other internal equipments.

Keywords: Loading optimization, Harmonics, Flywheel plus converter, Loading, Efficiency, Five "nines", MTTF, MTBR, MTBF.

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7. Configuring your UPS; Publisher: EAMS

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Authors: **M.Siva Sathyanarayana, J.Amarnath**

Paper Title: **Modelling and Analysis of Trajectories of A Wire Like Particle in A Three Phase Common Enclosure Gas Insulated Busduct (GIB) With Image Charges**

Abstract: Metallic particle contamination in a compressed Gas Insulated Busduct (GIB) system may substantially lower the corona onset and breakdown voltages of the system. The random movement of metallic particles in a GIB system plays a crucial role in determining the insulation performance of the system. In this study a statistical approach has been used to evaluate the probability of SF6 insulation breakdown due to the presence of contaminating metallic particles. Under 50-Hz AC voltage, the particle motion is complex, and under appropriate conditions, the particle may cross the gaseous gap from the low-field region near the outer enclosure to the high-field region near the central conductor. For the commonly encountered size of metallic particles in practical Gas Insulated systems, such a crossing of the gaseous gap takes several cycles of the 50-Hz voltage. In order to determine the particle trajectories in a three-phase common enclosure Gas Insulated Bus duct (GIB) an outer

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enclosure of diameter 500 mm and inner conductors of diameters 64 mm spaced equilaterally are considered. Wire like particles of aluminum and copper has been considered to be present on enclosure surface of a three-phase bus duct. A method based on particle movement is proposed to determine the particle trajectory in Gas Insulated Substation (GIS) or Gas Insulated Busduct (GIB) for a three phase common enclosure while the image charge effects of the conductors are considered. The motion of the wire particle was simulated using the charge acquired by the particles, the macroscopic field at the particle site, the drag coefficient, Reynold's number and coefficient of restitution. The computation of particle movement has been carried out on bare electrode system for different voltages. The results have been presented and analyzed.

Keywords: GIS, GIB

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Authors: **C.A. Chidolue, C.H. Aginam**

Paper Title: **Effect of Shape Factor on the Flexural-Torsional-Distortional Behaviour of Thin- Walled Box Girder Structures**

Abstract: The governing differential equations of equilibrium for flexural-torsional-distortional analysis of thin-walled box girder structures with various shapes were derived in this work using V. Z. Vlasov's theory. The obtained equations were used to evaluate the cross sectional deformations of some box girder structures having rectangular (doubly symmetric) and trapezoidal (mono symmetric) shapes. Evaluation of Vlasov's coefficients for the obtained differential equations of equilibrium formed a major part of this work. This was accomplished by examining the strain modes interaction diagrams for the various cross sections and by using Morh's integral chart for displacement computations. Cross sectional deformations of the box girder structures were obtained by integration of the differential equations of equilibrium using method of trigonometric series with accelerated convergence. For irregular (asymmetric) box girder shapes, complex differential equations of equilibrium were obtained as a result of the interaction between all the strain modes of flexure, torsion and distortion. Application of these set of equations for the analysis of irregular shaped box girder structures is presented in another work.

Keywords: Box structure, distortion, flexure, shape factor, thin-walled, torsion

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94.	**Authors:**	**Sudhanshu Shekhar**	
	Paper Title:	**Online Non Destructive Evaluation of Large Pipe Lines and Cylindrical Structures Using Guided Ultrasonic Wave Diffraction Tomography**	
	Abstract: This Research work evaluates the ability of ultrasonic guided waves to detect several types of defects in cylindrical structures with different pre-selected wave modes. It will also demonstrate ultrasonic guided wave method [1& 2] as an alternative to standard ultrasonic techniques and how to address their deficiencies. This approach is based on the use of ultrasonic guided waves. In this work the use of ultrasonic guided waves for thickness mapping of large, partially accessible areas was investigated. The problem of interest is to evaluate the minimum remaining plate thickness over a large area. Guided waves [3 & 4] have multiple properties that can be used for thickness mapping over large areas. Firstly, the dispersive nature and variation of the phase velocity as a function of the frequency thickness product of guided waves [5 &6] make them potentially suitable for thickness mapping by time-of-flight tomography and diffraction tomography based on the variation of the velocity in the in homogeneities [7] . The experimental result was validated with FE (Finite Element) profile to arrive at the conclusion. Diffraction tomography can reconstruct a map of the velocity from the scattered field produced by the interaction of an incoming wave field and a velocity in homogeneity. It has been shown that Diffraction tomography with low frequency guided waves can be used for thickness reconstruction of plates or large diameter pipes. Low frequency guided waves can be used for thickness reconstruction of plates or large diameter pipes. It has been shown that the scattering from the array of transducers needs to be minimized in order to reconstruct thickness accurately. However when the scattering from the array of transducers is large it is possible to use guided wave diffraction tomography in a structural health monitoring approach and obtain accurate thickness reconstruction. **Keywords:** Cylindrical Structures, Frequency **References:** 1. J L Rose, Ultrasonic waves in solid media, Cambridge University Press, 1999. 2. J Krautkramer , Ultrasonic testing of materials, 1969 edition, Springer. 3. F Cegla, Ultrasonic crack monitoring using guided waves in extreme inaccessible environments, Proceedings of 17 th World conference on Nondestructive Testing, 2008, p 245 – 249. 4. J L Rose, Recent advances in Guided waves Non Destructive Evaluation, Ultrasonic symposium, 2009, p 761 – 770. 5. R P Dalton, P Cawly and MJS Lowe, Potential of guided waves for monitoring large areas of metallic aircraft fuselage structure, Journal of NDE, 2009, 20(1), p 29 – 46. 6. L.M. Brekhovskikh. Waves in layered media. Academic Press, 1980. 7. W. Zhu, J.L. Rose, J.N. 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95.	**Authors:**	**Pragati Priyadarshinee, Pragya Jain**	
	Paper Title:	**Load Balancing and Parallelism in Cloud Computing**	
	Abstract: Large-scale heterogeneous distributed computing environments (such as Computational Grids and Clouds) offer the promise of access to a vast amount of computing resources at a relatively low cost. In order to ease the application development and deployment on such complex environments, high-level parallel programming languages exist that need to be supported by sophisticated runtime systems. The anticipated uptake of Cloud computing, built on well-established research in Web Services, networks, utility computing, distributed computing and virtualization, will bring many advantages in cost, flexibility and availability for service users. These benefits are expected to further drive the demand for Cloud services, increasing both the Cloud's customer base and the scale of Cloud installations. This has implications for many technical issues in Service Oriented Architectures and Internet of Services (IoS)-type applications; including fault tolerance, high availability and scalability. Central to these issues is the establishment of effective load balancing techniques. It is clear the scale and complexity of these	**486-489**

systems makes centralized assignment of jobs to specific servers infeasible; requiring an effective distributed solution.

Keywords: Load Balancing,Parallelism,SOA, Virtualization.

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Authors: **Jamuna.M, A.M.Vijaya Prakash, J.Pushpanjali**

Paper Title: **Low Power VLSI Architecture for Image Compression System Using Discrete Wavelet Transform**

Abstract: Image compression has got applications in many fields like digital video, video conferencing and video over wireless networks and internet etc. This paper deals with the implementation of VLSI Architecture of image compression system using low power DWT (Discrete Wavelet Transform). DWT is the most widely used image compression technique and it is the most efficient algorithm used in JPEG image compression. This paper presents implementation of 2 methods of DWT, one is conventional method and the other one is lifting scheme. Since conventional method requires more memory, area and power, lifting scheme is used as an enhanced method. Architecture of the DWT which is a powerful image compression algorithm is implemented using lifting based approach. This architecture enjoys reduced memory referencing¸ related low power consumption¸ low latency and high throughput. The Inverse Discrete Wavelet Transform (IDWT) is also obtained in a similar way to get back the image matrix. The design is implemented in verilog HDL. ISIM is used for the simulation of the design. MATLAB is used as a support for the design for obtaining the input pixels and comparison of the results. CADENCE RTL compiler is used to synthesize and obtain the detailed power and area of the design.

Keywords: Discrete Wavelet Transform (DWT), Inverse Discrete Wavelet Transform (IDWT), Digital filters.

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Authors: **Vijaykumar, R K Karunavathi, Vijay Prakash**

Paper Title: **Design of Low Power Double Data Rate 3 Memory Controller with AXI compliant**

Abstract: As system bandwidths continue to increase, memory technologies have been optimized for higher speeds and performance. The next generation family of Double Data Rate (DDR)RAMs are DDR3 RAM. DDR3 RAMs offer numerous advantages compared to DDR2. These devices are lower power, they operate at higher speeds, offer higher performance (2x the bandwidth), and come in larger densities. DDR3 memory devices provide a 30% reduction in power consumption compared to DDR2, primarily due to smaller die sizes and the lower supply voltage (1.5V for DDR3 vs. 1.8V for DDR2). This paper represents the overall design and architecture of Low power Double Data rate 3(DDR3) memory controller. In this paper clock gating is used as a low power technique .

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Keywords: DDR3 memory devices provide a 30% reduction in power consumption compared to DDR2, primarily due to smaller die sizes and the lower supply voltage (1.5V for DDR3 vs. 1.8V for DDR2).

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Authors: **Pankaj Kumar Srivastava, T. R. Sontakke**

Paper Title: **Performance of Cooperative Spectrum Sharing and Dynamic Sensing Strategies for Efficient Spectrum Utilization in Cognitive Radio**

Abstract: Due to crowd in the spectrum, interference protection is guaranteed through policy spectrum licensing. Cognitive radio and mesh network can facilitate spectrum sharing that improves spectral efficiency, provided spectrum policies are in place that supports these forms of sharing. This paper discusses the enhancement of Cognitive Radio which enable all the parameter. Cognitive Radios have been receiving increasing attention in academia, industry, and government. This has come after several studies indicating that up to 90% of the allocated radio spectrum less than 3GHz is idle most of the time. As a result, spectrum regulation around the world is in progress to allow unlicensed access on a non-interfering. Current researches are investigating different techniques of using cognitive radio to reuse more locally unused spectrums to increase the total system capacity. In this paper we address more spectrums sensing, protocol, hardware, measurement methodology, security and algorithmic challenges that could limit their performance or even make them infeasible. We also give some insight into the evolution of cognitive radios and characteristics. We conclude highlighting open research challenges in this exciting area.

Keywords: component: Cognitive radio, Spectrum sensing, Dynamic spectrum access, Multi-dimensional spectrum sensing, Cooperative sensing, Radio identification.

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Authors: **Archana Paranjpe, Abhay Kumar Sharma, R.K.Ranjan, V.K.Bajpai, Vishal Paranjape V**

Paper Title: **MSW A Potential Energy Resources: A Two Stage Anaerobic Digestion**

Abstract: Present investigation reveals the biodegradability of municipal solid wastes (MSW) in context of Jabalpur city (1) (at 23˚10'North latitude and 79˚57' East longitude, at an altitude of 393 meters above mean sea level) and harnessing energy through two stage anaerobic digestion. A critical study of various process parameters affecting the anaerobic digestion has been analyzed. During the anaerobic digestion of MSW it has been seen that the retention time of the process increases as compared to other waste such as fruits and vegetable waste, cow dung, agricultural residues etc. With the use of suitable bio-methanization technology the twin objectives (a) waste reduction and (b) the environmental problems can be achieved. The present work will help all academicians, rural and urban energy industry people in generating eco-friendly energy and maintaining environment too. In this study the biodegradability of the MSW organic fraction has been tested and in particular a comparison between the production of biogas from landfills and organic wastes in anaerobic conditions has been performed. Two stage digestion of this kind of wastes were proved a better efficiency than single stage digestion.

Keywords: bio-methanization, MSW, biogas, two stage anaerobic digestion.

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Authors: **Jaspreet Singh, Harvinder Lal, Gautam Kocher**

Paper Title: **Musculoskeletal Disorder Risk Assessment in small scale forging Industry by using RULA METHOD**

Abstract: Musculoskeletal disorders (MSDs) are common health problem throughout the world. Work related musculoskeletal disorders are group of painful disorders of muscles, tendons and nerves. The low back, or lumber area, serves a number of important functions for the men in working area many occupational tasks in industrial are still associated with strenuous working postures and movement. Combined with a heavy physical workload, they result in a high frequency of work-related musculoskeletal disorders. The present study was aimed to evaluate the musculoskeletal disorder (MSD) of workers engaged in Small scale forging industries. Study was conducted on 102 workers of a forging industry using the posture analysis tool RULA Method. A video showing the different activities of the workers was shot and then images were cropped from it for the analysis. The results of RULA

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showed that about 20.33% of the workers were under high risk levels and required immediate change. About 45.32% of the workers were at lower risk levels and 34.33% of the workers were at medium risk levels. The present Study recommended the awareness and proper ergonomics training to the workers.

Keywords: Musculoskeletal disorders, men, forging industry, RULA.

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Authors: **Abdussamad U. Jibia**

Paper Title: **Measurement of Fluorescence Lifetimes Using Minimum Norm and Multiparameter Deconvolution**

Abstract: A new method of fluorescence decay analysis is presented. The method relies on the classical Gardner transform to convert the fluorescence decay data into a convolution model which is deconvolved using multiparameter deconvolution technique. Minimum norm eigenvector method is then used to further model the resulting complex exponentials to obtain better estimates of fluorescence decay rates and number of components. Simulation results indicate that the SNR detection threshold is very low compared with several other methods. Fluorescence decay data is finally postprocessed using the proposed approach. The results are motivating.

Keywords: fluorescence, Gardner transform, multiexponential, multiparameter deconvolution, minimum norm.

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Authors: **J.Suganthi, N.Kumaresan, K.Anbarasi**

Paper Title: **Design of Low Power Zigzag 8T SRAM array with Differential Write Back Scheme**

Abstract: Static random access memory (SRAM) has been widely used as the representative memory for logic LSIs. This is because SRAM array operates fast as logic circuits operate, and consumes a little power at standby mode. array. Therefore, the good design of SRAM cell and SRAM cell array is inevitable to obtain high performance, low power, low cost, and reliable logic LSI. Various kinds of SRAM memory cell has been historically proposed, developed and used. Nanometer SRAM cannot achieve lower VDDmin due to read-disturb, half-select disturb and write failure. This paper demonstrates quantitative performance advantages of a zigzag 8T-

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SRAM (Z8T) cell over the decoupled single-ended sensing 8T-SRAM (DS8T) with write-back schemes, which was previously recognized as the most area-efficient cell under large supply voltage variations. In this paper, we propose a new compact z-shape cell layout to prioritize symmetric device placement while providing high area efficiency.

Keywords: Low supply voltage, SRAM, read disturb, static voltage, SRAM, read disturb, static noise margin, write margin.

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