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1.

Authors: Y.Soumya,T. Ragunathan

Paper Title: Lazy Expression Evaluation with Demand Paging In Virtual Memory Management

Abstract: In computer operating systems, demand paging (as opposed to anticipatory paging) is a method of virtual memory management. Mainly this paper focus on the process of execution of pages in physical memory. Mainly this paper tells that faulits of page. Mainly these paper exaplin the lazy loading technique. This lazy loading technique performs the evaluation of expressions in the virtual memory management. This paper attempts the Short-circuit evaluation

Keywords: demand paging, virtual memory management, lazy loading technique, page fault, Short-circuit evaluation

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2.

Authors: Gaurav Jaswal, Amit Kaul, Rajan Parmar

Paper Title: Content based Image Retrieval using Color Space Approaches

Abstract: The decreasing costs of consumer electronic devices such as digital cameras and digital camcorders, along with the ease of transportation facilitated by the Internet, has lead to a phenomenal rise in the amount of multimedia data. With this rapid development of multimedia technologies, the problem of how to retrieve a specified image from large amount of image databases becomes an important issue. In this paper we have developed a CBIR system based on the color features in RGB and HSV color space. Global color histogram (GCH) which lacks spatial information about the image colors has been compared with LCH. Algorithms were tested on two Databases one comprising of 500 JPEG images and another comprising of 120 JPEG images of national flags of different countries. The LCH approach has been found to be better and more accurate than GCH approach.

Keywords: GCH, LCH, RGB & HSV.

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Authors: **Nikhilesh Singh, Rajendra.M.Belokar, Ravinder.S.Walia**

Paper Title: **Physiological evaluation of manual lifting tasks on Indian male workers**

Abstract: The present study follows a physiological approach to evaluate physical work capacity (PWC) during manual material handling (MMH) tasks on Indian male workers. This study involves six independent lifting variables such as lifting frequency (2, 5, and 8 lifts/min), lifting load (7, 14, and 21 kg), vertical height (waist, shoulder, and maximum reach), horizontal distance (25, 40, and 55 cm), laboratory condition (21°C, 27°C, and 33°C) and three different rectangular box size{X (35×24×28 cm),Y (44×34×17 cm), and Z (58×38×24 cm)}. The selected two response variables were oxygen intake and heart rate. Taguchi L27 Orthogonal array (OA) was applied to evaluate the effect of these lifting variables and plots of raw and signal- to- noise ratio data was used for computing the significance and their effect on the response variables. The analysis of variance (ANOVA) used to evaluate an optimal result of the variables. After analysis; it was found that all six variables (i.e. lifting frequency, lifting load, vertical height, horizontal distance, laboratory environment and box size) had significant effect on oxygen intake; whereas five variables (i.e. lifting frequency, lifting load, vertical height, horizontal distance and laboratory environment) showed a significant effect except one factor of box size was found insignificant in case of heart rate.

Keywords: Physical work capacity (PWC), Physiological approach, Manual material handling (MMH) tasks, Oxygen intake, Heart rate.

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4.

Authors: **R.Sree Lekshmi, B. Sasi Kumar**

Paper Title: **Extracting Information from Semistructured Xml Using Tars**

Abstract: Extracting information from semi structured documents is a very hard task, and is going to become more and more critical as the amount of digital information available on the internet grows. Indeed, documents are often so large that the dataset returned as answer to a query may be too big to convey interpretable knowledge. This work describe an approach based on Tree-based Association Rules (TARs) mined rules, which provide approximate, intentional information on both the structure and the contents of XML documents. This mined knowledge is used to provide: structure and the content of the XML document and quick, approximate answers to queries.

Keywords: approximate query-answering, data mining, intensional information, succinct answers.

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5.

Authors: **Nagendra Sah**

Paper Title: **Impact of Mobility and Node Speed on Multicast Routing In Wireless MANETs**

Abstract: Mobile Ad-hoc networks are characterized as networks without any physical connections. In these networks there is no fixed topology due to the mobility of nodes, interference, multi-path propagation and path loss. One particularly challenging environment for multicast is a mobile ad-hoc network (MANET), where the network topology can change randomly and rapidly, at unpredictable times. As a result, several specific multicast routing protocols for MANET have been proposed. This paper evaluates well known multicast routing protocols, like on-demand multicast routing protocol (ODMRP), protocol independent protocol- dense mode (PIM-DM) and multicast open shortest path first (MOSPF) under various ranges of MANET scenarios based on mobility and node speed. The simulation environment is Qualnet-5.0.

Keywords: Computer Network, Routing Protocols, Path loss Models

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6.

Authors: **Syed.Awais Hyder, D.Sri Kanth, C.Chandrasekhar, E.Sammaiah**

Paper Title: **Field Programmable Gate Array Implementation Technology**

Abstract: A field-programmable gate array (FPGA) is an integrated circuit designed to be configured by a customer or a designer after manufacturing hence "field-programmable". The FPGA configuration is generally specified using hardware (HDL), similar to that used for an application-specific integrated circuit (ASIC) (circuit diagrams were previously used to specify the configuration, as they were for ASICs, but this is increasingly rare). FPGAs can be used to implement any logical function that an ASIC could perform. The ability to update the functionality after shipping, partial re-configuration of a portion of the design and the low non-recurring engineering costs relative to an ASIC design (notwithstanding the generally higher unit cost), offer advantages for many applications. FPGAs contain programmable logic components called "logic blocks", and a hierarchy of reconfigurable interconnects that allow the blocks to be "wired together"—somewhat like many (changeable) logic gates that can be inter-wired in (many) different configurations. Logic blocks can be configured to perform complex

combinational functions, or merely simple logic gates like AND and XOR. In most FPGAs, the logic blocks also include memory elements, which may be simple flip-flops or more complete blocks of memory. In addition to digital functions, some FPGAs have analog features.

Keywords: Field Programmable Gate Array Implementation Technology.

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7.

Authors:	**S. Nasira Tabassum**
Paper Title:	**Optimization and Security of Continuous Anonymizing Data Streams**

Abstract: The characteristic of data stream is that it has a huge size and its data change continually, which needs to be responded quickly, since the times of query is limited. The continuous query and data stream approximate query model are introduced in this paper. Then, the query optimization of data stream and traditional database are compared such as k-anonymity methods, are designed for static data sets. As such, they cannot be applied to streaming data which are continuous, transient, and usually unbounded. Moreover, in streaming applications, there is a need to offer strong guarantees on the maximum allowed delay between incoming data and the corresponding anonymized output. Continuously Anonymizing Streaming data via adaptive cLustEring (CASTLE), an efficient and effective algorithm w.r.t. the quality of the data, is a cluster-based scheme that anonymizes data streams on-the-fly and, at the same time, ensures the freshness of the data. CASTLE is also extended to handle l-diversity. Finally, we study the optimization and security techniques of data streams using selective security encryption and compression to improve the efficiency of the CASTLE algorithm.

Keywords: privacy-preserving data mining, continuous anonymity, selective security encryption, data compression.

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8.

Authors: **Ibrahim Al-Adwan, Munaf S. N. Al-D**

Paper Title: **The Use of ZigBee Wireless Network for Monitoring and Controlling Greenhouse Climate**

Abstract: The increasing demands for crop production and quality have significantly increased the utilization of high quality and productivity green houses. Modern greenhouses are nowadays having great sizes and they are equipped with sophisticated monitoring and controlled actuation systems to assure maximum productivity and provide value-added quality. Increases in greenhouse sizes has increased the demand in increasing the monitoring points in order to provide real-time precise measurement of some important parameters and hence to avoid unnecessary exposure to unhealthy ambient conditions. The increase of monitoring points is certainly leads to increase the complexity of managing and maintaining them efficiently.

The aim of this paper is to present a novel wireless sensor network based ZigBee technology for monitoring and controlling greenhouse climate. The system consists of a number of local stations and a central station. The local stations are used to measure the environmental parameters and to control the operation of controlled actuators to maintain climate parameters at predefined set points. For each local station a PIC Microcontroller is used to store the instant values of the environmental parameters, send them to the central station and receive the control signals that are required for the operation of the actuators. The communication between the local stations and the central station is achieved via ZigBee wireless modules.

Keywords: Greenhouse monitoring and control, Wireless network, ZigBee.

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Authors: **Amol Ranadive**

Paper Title: **Vistas, Frets and Effective Stratagems for Growth of Online Retailing in India**

Abstract: There are several pockets in various segments of the Indian Online Retail Industry which are yet to be explored. Internet is a powerful means that can provide an exclusive platform for the escalation of retail brands in India. The Internet beholds many qualities that are in line with the retail industry including a higher customer penetration, increased visibility, and expedient operations. The present Internet based e-Retailing models represent only a small fraction of a phase preceding an age of quick transformations, challenges, and opportunities in the Indian retail market. The Indian retail market is undergoing a tremendous insurgency. The emergence of Internet as a backbone for new businesses has enabled new formats of virtual retailers to surface and compelled the existing retailers to seriously view and consider the existing models of E-Retailing. Online retailing or E-Retailing is depicted as transactions that are conducted through interactive online computer systems, which link consumers with sellers electronically, where the buyer and merchant are present at remote physical locations. In a short span of time, Online Retailing has resolutely established itself as a practicable option to physical store based shopping. This paper makes

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an effort to provide a more lucid image about the E-Retailing in India and its various concerns and opportunities. It also tries to attempts to devise an effective Online Retailing strategy in India based on the detailed survey of present online retailing companies.

Keywords: E-Retailing, Merchandizing, Online Shopping, Reverse Logistics

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10.

Authors:	**Ruchi Sharma**
Paper Title:	**Analysis of Different Multiplier with Digital Filters Using VHDL Language**

Abstract: Performance as well as Area are the two main design tolls, power consumption also become a vital concern in VLSI system design. A system's performance is generally determined by the performance of the multiplier because the multiplier is the slowest element in the system. area and speed are usually conflicting constraints so that for improving the speed of the system results in larger areas. As a result, a multipliers with optimized area & speed has been designed with fully parallel algorithms. The need for low-power VLSI system arises from two main forces.

Keywords: system's performance, area, multiplier, booth algorithm.

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11.

Authors:	**Raj Anand, Vishnu Pratap Singh Kirar, Kavita Burse**
Paper Title:	**Data Pre-processing and Neural Network Algorithms for Diagnosis of Type II Diabetes: A Survey**

Abstract: Diagnosis of type II diabetes in early stages is very challenging task due to complex inter dependence on various factors. It requires the critical need to develop medical diagnostic support systems which can be helpful for the medical practitioners in the diagnostic process. Neural network techniques have been successfully applied to the diagnosis of many medical problems. In this survey we compare the various neural network techniques for the diagnosis of diabetes. The Pima Indian data set is used to study the classification accuracy of the neural network algorithms. The various data pre-processing techniques are surveyed to improve the predictive accuracy of the neural network algorithms

Keywords: Type II diabetes, Pima Indian data set, neural networks, data pre-processing.

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12.

Authors:	**Hamdy Mohamed Soliman, S. M. EL. Hakim**
Paper Title:	**Improvement the Current Control Methods for Three Phase Voltage Source Inverter to Drive the Permanent Magnet Synchronous Motor**

Abstract: Three phase pluse width modelation voltage soruce inverter are widly used in many industrial application such as the drive system. The performance of the drive systems depend up on the motor control and method of control in power converter. From the most important methods to control the power converter are current and voltage controls. The current control is preferable. This is because it is simple. The quality control of this method depends upon the quality of the waveform is generated by current controlled of converter. This paper aims to improve the performance of Ac drives through the improvement the different methods of the current controlled. Here the classical hysteresis controller, ramp type controller and delta modulator controller are discussed and improvement by general design of PI current controller for each phase. The improvement can be seen through the torque ripple and

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total harmonic distortion. The proposed model is compared to classical model to show the effectiveness of the proposed model. This work is simulated through matlab simulink.

Keywords: hysteresis controller, delta modulator controller, ramp type controller, matlab simulink.

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13.

Authors:	**Debanjan Mukherjee, Asim Kumar Jana, Malay Kumar Pandit**
Paper Title:	**A Novel Power Conditioning Unit (PCU) using Adaptive Signal Processing for Low THD**

Abstract: The presence of harmonic in power system is a major concern to power engineers. With the heavy usage of non- linear loads in power systems, the harmonic effect becomes more serious. One of the most popular computation algorithms for harmonic analyzer is Fast Fourier Transform (FFT). In this paper ,single phase current waveform is taken from a three phase supply fed to motor through power analyzer interfaced with PC. FFT is done using MATLAB program on the imported data. After that, same waveform like the current waveform obtained from the hardware setup is created in MATLAB SIMULINK window. That created waveform is filtered by Normalized LMS Filter to reduce Total Harmonic Distortion (THD) in the filtered output. Comparison is done between the hardware results with the software simulated results. THD value is reduced from at max 12.03% to at min 0.17%, which has set a new record to our best knowledge.

Keywords: FFT, SIMULINK, NLMS Filter, Total Harmonic Distortion (THD).

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14.

Authors:	**Vinay Dawar, Mohit Bansal**

	Paper Title:	**Denoising of Image Using Least Minimum Mean Square Error**	
	Abstract: In this paper, image denoising by linear minimum mean square-error estimation (LMMSE) scheme is proposed and also the determination of best suited wavelet for image denoising has been discussed. The over complete wavelet expansion (OWE) in noise reduction is used for taking the effective result instead of orthogonal wavelet transform. A vector has been designed by the combining the pixels at the same spatial location across scale to explore the strong inter-scale dependencies of OWE and apply LMMSE to the vector. Now, the performance evaluation of the proposed scheme is done by using different wavelet family. To measure the denoising performance, two criteria are used, first is signal information extraction and second is distribution error criterion. The best suite wavelet, which achieves best results between these two criteria, can be selected from wavelet family. To exploits the wavelet intrascale dependency and image discrimination, estimate the wavelet coefficients statistics and wavelet coefficient is classified by Context modelling. **Keywords:** Linear Minimum Mean Square-Error estimation (LMMSE), over complete Wavelet Expansion (OWE). **References:** 1. B. M. Sadler and A. Swami, "Analysis of multiscale products for step detection and estimation," IEEE Trans. Inform. Theory, vol. 45, no. 4, pp. 1043–1051, April 1999. 2. D. L. Donoho, "De-noising by soft thresholding," IEEE Trans. Inform. Theory , vol. 41, no. 5, pp. 613–627, May 1995. 3. D. L. Donoho and I. M. Johnstone, "Adapting to unknown smoothness via wavelet shrinkage," J. Amer. Stat. Assoc., vol. 90, pp. 1200–1224, Dec. 1995. 4. E. W. Karmen and J. K. Su, Introduction to Optimal Estimation. London, U.K.: Springer-Verlag, 1999. 5. Guoliang Fan, "Image denoising using local contextual hidden Markov model in the wavelet domain," IEEE Signal Process. 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15.	**Authors:**	**R. Kamala, B. Krishna Rao**	
	Paper Title:	**Reuse of Solid Waste from Building Demolition for the Replacement of Natural Aggregates**	
	Abstract: In this industrial world, recycling construction material plays an important role to preserve natural resources. These studies seek to greener environment since it seeks to develop recycle waste material for construction. The use of recycle aggregates and solid wastes from construction and demolition waste is showing a prospective application in construction and as alternative to primary and natural aggregate. It conserves natural resources and reduces the space required for land fill disposal. In the laboratory the crushed tile aggregate has been tried as partial replacement substitute to convectional coarse aggregate in concrete making of cubes, cylinders, beams. These were cast and tested for compressive strength, split tensile and flexural strength after a curing period of	**74-76**

7, 28, 56 days. The results indicate effectiveness of crushed ceramic waste as partial replacement of conventional coarse aggregate up to 40 percent, without affecting the design strength.

Keywords: ceramic waste, demolition waste, super plasticizer, solid waste, conventional coarse aggregates.

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Authors: **Sajjan Singh, Rasveen, S. V. A. V. Prasad**

Paper Title: **A Parametric Scheme to Perform an Efficient and Reliable Vertical Handover**

Abstract: Wimax and Wifi technologies are the high speed networks. These type of technologies are the telecommunications technologies that offers transmission of wireless. In such kind of networks ea Abstract: Wimax and Wifi technologies are the high speed networks. These type of technologies are the telecommunications technologies that offers transmission of wireless. In such kind of networks each mobile user is controlled by its owner base station. As a node move outside the coverage area of its base station, this process is called handover. To keep the uninterrupted communication between two nodes during the handover process is a challenging task. In case of vertical handover this process is more critical. To perform the effective handover process the parametric changes are suggested here to perform the selection of Base Station. The obtained results shows the proposed work has improve the network throughput during vertical handover process

Keywords: Handover, Wimax, WiFi, Vertical Handover, Throughput.

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Authors: **A.Venkateswara Rao, KSV Prasad, M Avinash, K Nagababu, V Manohar, PSR Raju, GR Chandra**

Paper Title: **A Study on Deflection of a Bimetallic Beam under Thermal Loading Using Finite Element Analysis**

Abstract: This paper presents a series of load-deflection tests on bimetallic beams in order to develop a load – deflection model for bimetallic beam with under thermal loading condition. The proposed model is based on analysis of a series of Finite element analysis generated models.A total of 8 beams of length 5000mm and 100m height is tested under thermal loading from 1000C to 4000C.The results are noted for each computation. The main objective of this investigation is to propose an empirical model which predicts the deflection of the bimetallic beam for a given temperature. Finally a model is proposed and it is validated using finite element analysis.

Keywords: Load Deflection Test, Bimetallic Beams

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Authors:	**Maryam Shabro, Milad Amir Toutounchian, Mehrnaz Khodam Hazrati**
Paper Title:	**Rapid Prototyping Environment for Power Line Modem Design, Implementation, Verification, and Optimization**

Abstract: This paper describes design, implementation, verification and optimization of a power line modem with model-based evaluation approach. Nowadays, model-based design for embedded systems is used extensively to accelerate the development time and to improve the quality of the resulting applications by systematic design and test. The majority of DSP designers today use the MathWorks software includes MATLAB and/or Simulink as a foundation tool not only for simulation but also for real-time target specific C-code generation. In our modem project, all parts including transmitter, receiver, I/O drivers and startup protocols have been realized entirely in Simulink environment for simulation and hardware implementation. A floating-point DSP has been carried out to minimize the time required to convert simulation software into real-time code. In order to verify the algorithms, real-time data exchange has been developed to test our DSP designs in-situ with real data. Finally, for code optimization, profiling method has been employed to identify segments of generated code that may benefit from additional modification.

Keywords: High Voltage Power Line Modem, Legacy Code Integration, Model-based Design, Profiler, S-function and Target for TI C6000.

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19.

Authors:	**R.Ramesh, N.Murugan**
Paper Title:	**Production and Characterization of Aluminium 7075 – T651 Alloy / B4C Surface Composite by Friction Stir Processing**

Abstract: Aluminum-based composites reinforced with hard ceramic particles offers high strength, stiffness, and resistance to wear. That combination of properties produced on the surface makes surface composites attractive to a wide range of applications in automotive and aerospace industries. Several modification techniques, such as high energy laser beam, plasma spraying, cast sinter and electron beam irradiation have been developed over the last two decades to fabricate surface metal matrix composites. Those techniques are based on liquid phase processing at high temperature and various problems such as reaction between reinforcement and matrix are encountered. Those limitations can be overcome if processing of surface composite is carried out in solid state. Friction stir processing is an emerging novel, green and energy efficient processing technique to fabricate surface composites which is based on the basic principles of friction stir welding. The distinct advantages of FSP are microstructural refinement, densification, homogeneity, accurate control and variable depth of the processed zone. Among the various metal matrix composites aluminum 7075 – T651 will find more applications. In this paper, it details about the fabrication of Al 7075-B4C surface composites by friction stir processing (FSP) to have improved surface hardness and wear resistance. It was found that the average hardness of friction stir processed surface composite was 62% higher than that of the base metal Aluminum 7075 – T651. The increase in hardness was attributed to fine dispersion of B4C particles and fine grain size of the Aluminum matrix

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Keywords: Friction Stir Processing, Boron Carbide, Brinell hardness, Design of Experiments

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Authors: **S.Sundeep, Ch.Shankar Rao**

Paper Title: **A Novel Approach of an Isolated Controlling Scheme for the Stability Enhancement of UPFC**

Abstract: The stability criteria in distributed power system are developed. The controller operation of a UPFC unit is proposed and an isolated controlling approach to shunt and series controlling operation is proposed. The observation of the isolated control operation illustrates a simple and effective approach for UPFC operation. The Stability criterion for the voltage parameter is proposed and evaluated.

Keywords: Stability, power quality, UPFC, isolated shunt and series controlling

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21.

Authors: **Mehdi Kazemi, Arman Goudarzi**

Paper Title: **A Novel Method for Estimating Wind Turbines Power Output Based On Least Square Approximation**

Abstract: According to modernization in all over the world, renewable energies are getting more issues in power systems. Wind energy is one of the most promising renewable energies which could be utilized in power system to supply load demand. Installation of wind turbine generator (WTG) as a fuel saver and environment protector is too attractive since the manufacturing cost of WTGs is reduced. Computing the power output of a wind turbine generator is one of the most important issues which could affect the scheduling of the grid incorporated with wind farms. Many methods and models have been discussed in previous studies which are not accurate to predict the wind power output. This paper presents a new method to model power output of WTGs based on least square approximation and performance curve of the WTG which is given by the manufacturers. To demonstrate the capability of the method a case study composed of four WTGs with different power output each was conducted and the results have been compared with the previous models and found that this method is more accurate and reliable than other methods that have ever been introduced.

Keywords: Hybrid Power System, Renewable Energy Sources, WTGs, linear Regression, Least Square Approximation.

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Authors:	**Abdulqadiri Bello Abdulqadiri, Elwan Abubakar Ahmed**
Paper Title:	**Comparative Techno-Economic Analysis of Hybrid PV/Diesel and Hybrid Wind/Diesel Energy Generation for Commercial Farm Land in Nigeria**

Abstract: This paper describes a commercial farmland application in Nigeria. The objective was to demonstrate the technical, economic and institutional viability of renewable energy (Hybrid system) for commercial farmland as well as to allow local partners to gain experience with hybrid/renewable technology, resource assessment, system sitting and operation. A commercial farmland of 30Km2 (5kmx6km) is considered with a peak energy demand of 90kW and base demand of 40kW. It consists of wind, photovoltaic, and conventional generators. It is usually associated with a single generator source, and uses conventional generators to complement shortfall in supply. In this paper Homer software was use to perform techno economic and feasibility analysis for the system and result shows that wind/dieseal hybrid is more cheaper than the PV/dieseal.

Keywords: Hybrid System, Homer Sofyware, PV.

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Authors:	**Fayazuddin Ahmed Syed, B. Dean Kumar, Y. Chandrasekhar, B.L.P. Swami**
Paper Title:	**Comparative Analysis of Flat Plate Multistoried Frames With and Without Shear Walls under Wind Loads**

Abstract: Flat plate is the term used for a slab system without any column flares or drop panels. Although column patterns are usually on a rectangular grid, flat plates can be used with irregularly spaced column layouts. In flat plate loads directly to supporting columns, which is different from other two way systems by the lack of beams, column capitals, and drop panels. In tall multistoried structures the flat plate floor system has week resistance to lateral loads like wind, hence special features like shear walls, structural Walls are to be provided if they are to be used in High rise constructions. In the present investigation numerical studies for 20,40,60,80 storied for frames with normal conventional beam supported slab system, flat plate floor system, flat plate floor system with Shear walls has been conducted.
A Comparison the Critical Column Axial Forces, Column moments, Lateral Drift (in mm) due to static and wind loads on the structures located at Hyderabad at a basic wind speed of 44 m/s has been observed during alalysis.

Keywords: Flat Plates; Shear walls; Wind

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24.

Authors: R.Anand, G.Ashok Kumar

Paper Title: A Multilevel Inverter for Grid Connected Photovoltaic System by employing PID Controller

Abstract: This paper presents a single phase five level photovoltaic (PV) inverter topology for grid connected PV systems with a novel Pulse Width Modulated (PWM) control scheme. Two reference signals identical to each other with an offset equivalent to the amplitude of the triangular carrier signal were used to generate PWM signals for the switches. A digital Proportional-Integral- Derivative (PID) current control algorithm is implemented in DSP TMS320F2812 to keep the current injected into the grid sinusoidal and to have high dynamic performance with rapidly changing atmospheric conditions. The inverter offers much less total harmonic distortion and can operate at near-unity power factor. The proposed system is verified through simulation and is implemented in a prototype, and the experimental results are compared with that with the conventional single phase three level grid connected PWM inverter.

Keywords: Grid connected PV system, Single phase five level inverter, MPPT system and Proportional-Integral-Derivative (PID) Controller.

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25.

Authors: V. V. Diwan, G. N. Munishwar

Paper Title: Water Recycling and Reuse by Using Wetland

Abstract: Scarcity of water is a challenge worldwide because of growing population and Industrialization. Billions of people have insufficient access to safe drinking water. Ground water levels are falling and all type of water bodies like river, lake and oceans are getting polluted. Many issues resulting in water scarcity could be avoided with better water management. A better option is reuse and recycles the wastewater for secondary purposes like toilet flushing, gardening, lawn and irrigation.

Wastewater has high Biochemical Oxygen Demand (BOD), Chemical Oxygen Demand (COD) and contains Total Suspended Solid (TSS), Nitrogen (N), Phosphorous (P), alkaline in nature. Conventional wastewater treatment goes through primary, secondary and tertiary treatment which is expensive to build, operate and maintain. Wastewater should be treated & reused such that treatment should be economical, natural and not affecting the environment. The best option is to provide onsite wastewater treatment by using geology of wetland for clean & hygienic villages.

Wetlands are parts of earth's surface between terrestrial and aquatic system. Wetlands are generally shallow in depth which includes water, soil and vegetation. There are two types of Wetlands like Natural and Constructed wetland. Selection of location of natural wetlands is dependent on various geological properties. In natural wetland, control on process is difficult but in constructed wetland, we can control the process of treatment.

Constructed Wetland is an artificial wastewater treatment, consisting of shallow ponds (<1 meter depth). Water Hyacinth (Eichronia crassipes) is available locally It is large, bulbous floating plants with extensive root system, perennial aquatic plant with rounded, upright, shiny green leaves and spikes of lavender flower. It is good in nutrient removal from wastewater through the harvesting, prevents the growth of algae and maintaining pH value . The root zones of plants develop into a diverse ecology which includes bacteria, fungi, predators and filter feeders for creating aerobic conditions. Constructed wetlands provide habitat for wildlife and helps to improve aesthetic value.

Keywords: Wastewater has high Biochemical Oxygen Demand (BOD), Chemical Oxygen Demand (COD)

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26.

Authors: **Nagendra Sah**

Paper Title: **Optimization of Parameters for Minimum Path Loss in Underground Tunnels using CSP**

Abstract: Communication in underground tunnels is one of the most important and challenging areas for engineering fraternity with multiplicity of constraints. Various factors such as frequency, tunnel size, cross-section shape and curvature, material used for construction, antenna position and polarization, all influence the path loss. With the availability of large number of factors which influences the path loss, the task of finding the optimal solution becomes complex. Constraint Satisfaction Programming has the potential of tackling wide range of search problems easily. The task of optimizing the path loss in tunnels can be modeled in CSP as that of searching the optimal set of parameters affecting the path loss.

Keywords: CSP; Path Loss; Propagation Model; Wireless Communication.

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27.

Authors: **S. Z. Moussavi, P. Amiri, S. A. Hoseini**

Paper Title: **Controller Design for Synchronizing Distributed Generation Systems with the Phase Locked Loop (PLL)**

Abstract: In this paper a fuel cell power plant design using phase locked loop method for paralleling a fuel cell with the global network is described. Despite the fact that synchronous systems for scattering generation sources like generators have been used in Iran's plants, but there has been made fewer efforts in the case of plants based on fuel cell. In this paper an approach is presented for synchronization based on PLL that can reduce the response time to less than 2 seconds and time difference becomes zero in less than 3 seconds. Using the relay auto tuning algorithm in the closed loop system, the frequency fluctuations become less than 0.05% at the output. As in this approach, tuning is based on the DC voltage level, the induction property that makes the PID controller be unstable is reduced and we will have a very stable output wave. This is the main advantage of this controller.

Presented control structure is made up of three loops, whichwe will reached frequency to reference frequency by use of first loop and in the next loop we do it's phasecontrol whit take an integration of frequency, and in the frequencies difference less than 1 Hz. Presented control structure is made up of three loops. Using first loop, the frequency is reached near the reference value and in the next loop the phase is controlled by integration of the frequency, and in the frequency differences less than 1 Hz, the third loops does control frequency in independent way from the phase. Another advantage of this method is that the circuit remains in phase locked state when the phase has been synchronized, and there is no need to consider the time of connection to the network, and finally the output fluctuation is brought into zero. In this paper, it is also built an empirical example of digital synchronizer which is efficient in synchronizing distributed generation systems with the phase locked loop and will be described in detail in

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continuation.

Keywords: Phase locked loop, synchronizer, parallel and fuel cell.

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28.

Authors: **S.B.Chikalthankar,V.M.Nandedkar, V.G.Kokre**

Paper Title: **Effect of Variable Load, Speed and Acceleration of Crank Shaft on Depth of Wear of Linining Thickness of Bush Bearing**

Abstract: Hydrodynamic Cu-Pb-Sn journal bearings are considered to be a vital component of all the rotating machinery, because of its simplicity, low cost and efficiency. It is used to support radial loads under high speed operating conditions. During this transient period, direct contact between the journal and bearing induces high friction and bushes become progressively worn-out, thus inducting certain disabilities. The bushes are provided with a lining thickness of Cu-Pb-Sn material which is found in the range of 450 to 600 micron. The aim of present experimental work is to determine effect of variable load, speed and acceleration on depth of wear of lining thickness (dw) of Cu-Pb-Sn material bush, which is widely used as bush material in automobile engine. Taguchi L9 (33) orthogonal array was used for the experimental plan. . The mathematical model for input parameters and depth of wear obtained from regression analysis to predict values of depth of wear. S/N ratio and ANOVA analysis were used to obtained significant parameters influencing depth of wear. Test rig for testing dynamic behavior of bush bearing indigenously designed and developed by us.

Keywords: Crank shaft bush, Lining thickness, Depth of wear.

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29.

Authors: **Kamaljit Singh Arora, Randhir Singh, Parveen Lehana**

Paper Title: **Comparison of the Vocal Calls of Alexandrine and African Grey Species of Parrots using LPC Based Analysis Approach**

Abstract: Speech analysis is one of the interesting analytical approaches in the areas of digital signal processing and it has been explored for various research applications including modeling of speech signals, phonetics research, understanding the speech production mechanism, speech coding and speech recognition processes, etc. Birds are completely dependent on their vocal signals in order to fulfill their survival requirements like nesting, food, protection from any threat or danger and other mutual communicating activities, etc. Birds communicate with their vocal signals because they have a greater range of sounds than humans. Moreover, bird's calls contain a lot of useful information, but it cannot be easily recognized by human ear as time and frequency resolution of our auditory system is limited. The basic mechanism of sound production in birds is almost similar to that of humans in many contexts. LPC model has been used as an efficient speech model for the analysis of human voice. So, it may be used for the analysis of bird's vocal calls. This paper examines an investigating method for exploring the application of phonetics research on parrot's vocal calls. LPC based analysis approach has been applied on the vocal calls of Alexandrine Parakeet (Psittacula Eupatria) and African Grey (Psittacus Erithacus) species of parrots and investigations have been successfully carried out for comparing the number of phonemes in the calls of both the species using line spectral frequencies (LSF) vectors and Euclidean distances. Line spectral frequencies can be used to encode speech spectral information more efficiently than other transmission parameters. A classical method, known as vector quantization

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has also used for performing efficient speech analysis.

Keywords: Speech analysis, Vocal calls, Linear predictive coding (LPC), Line spectral frequencies (LSF).

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30.

Authors: **P.Ravi Kumar, V.Venkata Rao., M.Srinivasa Rao.**

Paper Title: **BER Analysis of Digital Broadcasting System Through AWGN and Rayleigh Channels**

Abstract: Radio broadcasting technology in this era of compact disc is expected to deliver high quality audio programmes in mobile environment. The Eureka-147 Digital Audio Broadcasting (DAB) system with coded OFDM technology accomplish this demand by making receivers highly robust against effects of multipath fading environment. In this paper, we have analysed the performance of DAB system conforming to the parameters established by the ETSI (EN 300 401) using time and frequency interleaving, concatenated Bose-Chaudhuri-Hocquenghem coding and convolutional coding method in different transmission channels. The results show that concatenated channel coding improves the system performance compared to convolutional coding.

Keywords: DAB, OFDM, Multipath effect, concatenated coding.

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	Authors:	**Ashok Kumar Rajput**
	Paper Title:	**Visualization Base Simulation of D.C Network Theorems in Basic Electrical Engineering with Lab VIEW**

Abstract: In an Electrical Engineering course work Practical plays a important role in Engineering Education to enhance the technical knowledge deeply. Now day by day students have different modes to perform the Practical in the Lab session. Software based Basic Electrical Engineering Practical are less costly than hardware base practical and also have a provision to change the circuit parameters as we need compared to hardware based practical, which results in better understanding of students in learning concepts of Basic Electrical Engineering course. Today Software based different Laboratory experiments can performed by the student with a single place which impacts on flexible learning of students and under-standing abilities. This motivation deals with Simulation of Basic Electrical Engineering Laboratory experiments which are part of Lab session at Under Graduate Electrical Engineering students using Laboratory Virtual Instrument Engineering Workbench (LabVIEW) software. Lab-VIEW uses graphical language which allows a natural, error free result & user-friendly interaction

Keywords: Basic Electrical Engineering, Laboratory, LabVIEW, Simulation, Software.

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31. **145-148**

	Authors:	**S. Gurulingam, A. Kalaisselvane, N. Alagumurthy**
	Paper Title:	**Performance Improvement of Forced Draught Jet Ejector Using Constant Rate Momentum Change Method**

Abstract: A jet ejector uses a jet of primary fluid to induce a peripheral secondary flow often against back pressure. Expansion of primary jet produces a partial vacuum near the secondary flow inlet creating a rapid re-pressurization of the mixed fluids followed by a diffuser to increase the pressure at the exit. Using the geometrical design parameters obtained by solving the governing equations, a CFD analysis is made using the FLUENT software to evaluate the optimum entrainment ratio that could be achieved for a given set of operating conditions, where the entrainment ratio (ER) is the ratio of the mass flow rate of the secondary fluid (propelled stream) to the primary fluid (motive fluid). The three main internal process forming sources of ejector irreversibility are mixing, kinetic energy losses, and normal shock.The CRMC method produces a diffuser geometry that removes thermodynamic shock process with in the diffuser at the design point-operating conditions. In order to match the ER that is achievable theoretically, an effort is made to force charge the propelled stream using a blower so that the momentum difference between the motive and the propelled fluid is minimized. The decrease in momentum difference increases the ER and the pressure lift ratio (PDE/PS) compared to the values obtained using the conventional methods, where PDE is the exit pressure and PS is the secondary fluid pressure. It also reduces losses due to pure mixing and kinetic energy loss.Experimental results obtained using the forced draft system is found to match the results obtained from the FLUENT analysis.

Keywords: Ejector, Efficiency, Irreversibility, CRMC, Forced draught.

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Authors: **Sanjeev Kumar Sharma, Randhir Singh, Parveen Lehana**

Paper Title: **To Investigate the Effect of Pressure on the DC Resistance of the Aloe-vera (Aloe Barbadensis Miller) Leaves**

Abstract: In nature, plants interact with many environmental factors such as winds, monsoon rains, touch, and herbivore attacks, in addition to many other ruthless mechanical perturbations that can menace plant survival. As a result, over many years of evolution, plants have developed very sensitive mechanisms through which they can identify and respond to even slight stimuli such as touch. Some plants respond behaviorally to the touch stimulus within seconds, while others show morphogenetic alterations over long periods of time, ranging from days to weeks. Aloe-vera plant has been known and used for centuries for its health, beauty, medicinal, and skin care properties. The name Aloe Vera derives from the Arabic word "Alloeh" meaning " shining bitter substance," while "vera" in Latin means "true". In this paper, investigations were carried out to study the effect of DC resistance of the Aloe-vera leaves. The resistance of the leaf measured shows a comparative change with the change in the apply pressure on the leaf. The resistance of the leaf tissue decreases with the corresponding increased in applies pressure between the electrodes due to increase in current path. A mechano-stimulus received at the cell wall may cause alterations in the intracellular pressure. This pressure stimulus may lead to the translocation of sub-cellular organelles, thus transducing the stimulus to a cellular alteration with the potential for downstream effects.

Keywords: Aloe-vera, aloe barbadensis, force sensitive resistance, DC resistance.

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Authors: **Vishal Singh, Prerna Chaudhary**

Paper Title: **Y2K38: The Bug**

Abstract: Digital world has been threatened by many bugs but only a few seemed to pose a great danger. The bug that got most famous was Y2K. Somehow, we got over it, then, there was Y2K10. It too was resolved and now we

have Y2K38. The Y2K38 bug, if not resolved, will make sure that the predictions that were made for the Y2K bug come true this time. Y2K38 bug will affect all the systems, applications and most of the embedded systems which use signed 32 bit format for representing the internal time. As the epoch for most these systems is 1, January, 1970 and since then the number of seconds which can be represented using this signed 32 bit format is 2,147,483,647 which will be equal to the time 19, January, 2038 at 03:14:07 UTC(Coordinated Universal Time). After this moment the systems will stop working correctly. There have been some solutions for this problem but a universal solution is yet to be found. All the solutions tend to delay this problem so that we can have some more time to find a good and universal solution and so does our proposed solution.

Keywords: signed 32 bit integer, time_t, Y2K, Y2K38.

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Authors: **Imranullah Khan, Tan Chon Eng, Shakeel Ahmed Kamboh**

Paper Title: **Performance Analysis of Various Path Loss Models for Wireless Network in Different Environments**

Abstract: This paper aims to investigate the performance of various path loss models in different environments for determination of the signal strength with respect to various receiver antenna heights for wireless network at 2.4GHz unlicensed band. A total of seven path loss models, namely Free Space, COST-231 HATA, ECC-33, SUI, HATA, COST-231 WI, HATA and Ericsson models have been reviewed with different receiver antenna heights in urban, suburban and rural environments. The estimated results produced by Free Space model were used as reference values. All estimated results of reviewed models were compared with the reference model values. It was found that COST-231 HATA model demonstrated highest path loss with 39% more values than reference model in urban environments. Ericson model established highest path loss values with 55% and 77% more estimated results than reference model in suburban and rural environments respectively. COST-231 WI model executed the lowest path loss amount with 12.6% more values than reference model in rural environments. SUI model established the results with 10% difference as compared to reference model at lower receiver antenna heights. It was revealed that the models results were incongruent due to incorporation of different variables and terrain classification. Therefore, a particular model cannot be recommended for the estimation of path loss at various antenna heights in all environments. However, SUI model could be preferred due to better performance in terms of less path loss as compared with the results of reference model at lower receiver antenna heights for suburban and rural environments.

Keywords: path loss; free space model; cost-231 Hata model; ECC-33 model; SUI model; Hata model; cost-231 WI model; Ericsson model.

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Authors: **Imran Ullah Khan, Tan Chong Eng**

Paper Title: **The Performance Enhancement of Dual Relay Cooperative Wireless Network in Rician Fading Channel**

Abstract: The aim of this study was to investigate the performance enhancement of dual relay cooperative wireless network by using Amplify and Forward (AF) relaying protocol in Rician fading channel with different K-factors. The bit error rate (BER) and BER gain by using AF scenario in Rician fading channel are derived. The results obtained from the proposed models are compared to AF scenario in Rayleigh and Nakagami-m fading channels. It is found that the proposed BER model of AF cooperative scenario outperform as compared to non cooperative scenario in terms of less BER. It is indicated that at lower values of K (i.e., at severe fading as well as weak LOS reception), the proposed model of AF scenario in Rician fading channel showed less BER as compared to AF scenario in Rayleigh fading channel (i.e., K=0, which denotes severe fading as well as the scenario where LOS component completely vanishes and reception becomes non-LOS). It is shown that at severe fading (i.e., at lower K values) while keeping lower signal to noise ratio (SNR) the proposed model showed less BER. However, the proposed model shows constant BER as K approaches to infinity (i.e., the BER performance approaches AWGN channel error performance) while keeping low SNR values .It is also revealed that with the increase in K values 1 to 60 (i.e., decrease in severe fading to lowest fading as well as an increase from weak to strong LOS reception) the proposed model showed less BER and high BER gain as compared to Nakagami-m channel while keeping low values of SNR (i.e., 1-18dB).

Keywords: Bit error rate, bit error rate gain, Rician fading channel, cooperative network.

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37.

Authors: **Rakesh Kumar**

Paper Title: **Design and Simulation of Dual and Triple Band Fractal Circular Patch Micro-Strip Antenna for C-Band Application**

Abstract: In the design of the systems are always important Some applications require the antenna to be as miniaturized as possible. Fractal antennas have entered the view of many as a very promising solution. It would be highly beneficial to design an antenna with similar radiation properties as the quarter-wavelength monopole while retaining its radiation properties. Fractal antennas size can be shrunk from two to four times with surprising good performance. Fractal antenna theory is built, as is the case with conventional antenna theory, on classic electromagnetic theory. Fractal antenna theory uses a modern (fractal) geometry that is a natural extension of Euclidian geometry. Design dual and triple band fractal antenna for c-band application.

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Keywords: Micro-strip antenna, fractal antenna, design of dual band and triple band fractal antenna.

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Authors:	**Talsania Mihir, Britto Fiona, Rajpal Jivesh, Wadhwa Preeti**
Paper Title:	**Cost Effective Implementation of a Human Arm Emulator**

Abstract: Dangerous work environments, like nuclear reactors and chemical plants, pose a threat to human life by the ways of injuries or fatalities. RoboArm is a simple and highly cost efficient electromechanical model, which copies a human being's hand movements. It is controlled remotely via an infrared beam, which is generated by using infrared light emitting diodes, which sense a human being's hand movements. This circuit has been designed to emulate two dimensional hand movements successfully. The actions which can be mimicked include a forward and backward motion as well as a grabbing action is achieved using electromagnets.

Keywords: Electromechanical, Infrared, Low cost, Phototransistor, Robotic arm

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39.

Authors:	**Anil Kumar**
Paper Title:	**Removing the Problem of Erratic Continuity in Assembly of Lever Combination Switch using Continuous Improvement Process**

Abstract: Company Mindarika had reported poor quality of particular products in the Assembly department which results in increasing cost, lead time, and customer complaints. The purpose of this study is to help Company Mindarika to improve the product quality and to manage the data for a continuous improvement plan by using Continuous Process Improvement and the Quality Control Techniques. Methods and procedures of this study include a review of literature relevant to Continuous Improvement, Quality Control Techniques, Root cause Analysis, Seven Tools of Quality and Assembly process of a specific automotive product (Lever Combination Switch). After the causes of defects were identified, solutions and procedures were recommended to the Company to eliminate defects in the assembly process of Lever Combination Switch.

Keywords: Lever Combination Switch, Erratic Continuity, Continuous Process Improvement, Quality Control Tools.

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40.

Authors: **Balwinder Singh Surjan**

Paper Title: **Design of Fixed Structure Optimal Robust Controller Using Genetic Algorithm and Particle Swarm Optimization**

Abstract: In this paper genetic algorithm (GA) has been applied for for the design of the structure specified optimal robust controllers. The controller structure is pre-specified and the controller design problem is posed as constrained nonlinear optimization problem. The parameters of the chosen controller are obtained solving the nonlinear constrained optimization problem. The performance indices which have been used in the design are integral absolute error (IAE), integral square error (ISE), integral time absolute error (ITAE) and integral time square error (ITSE). The constraints are frequency domain performances related with robust stability and disturbance rejection.

Keywords: Genetic algorithm, fixed structure controller, ISTE,ISE, IAE, nonlinear optimization, optimal robust controller.

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41.

Authors: **Mudit Sharma**

Paper Title: **Control Classification of Automated Guided Vehicle Systems**

Abstract: An automated guided vehicle or automatic guided vehicle (AGV) is a mobile robot that follows markers or wires in the floor, or uses vision or lasers. They are most often used in industrial applications to move materials around a manufacturing facility or a warehouse. Application of the automatic guided vehicle has broadened during the late 20th century and they are no longer restricted to industrial environments. Automated guided vehicle systems (AGVS) are widely used for transporting material in manufacturing and warehousing applications. These systems offer many advantages over other forms of material transport. However, the design of these systems is complex due to the interrelated decisions that must be made and the large number of system design alternatives that are available. In particular, the design of the AGVS control system can be quite challenging, and it can dramatically affect the system cost and performance. This paper presents a classification of automated guided vehicle systems developed from a control perspective. This classification is demonstrated on several example systems from the literature.
This paper develops a classification scheme that provides a structured mechanism for organizing the relevant information about the design of the AGVS from a control perspective. It allows the system designer to determine how design decisions will impact the control complexity. It also provides the foundation for a design aid that will help the system designer determine the most appropriate AGVS design for a specific application.

Keywords: AGV, AGVS

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42.

Authors: **Deepak Sundrani, Yusuf Inamdar**

Paper Title: **Exploring Methods of Replacement of Concrete Road in Two Days**

Abstract: In India, repairing / replacing of concrete road takes weeks, sometimes months and sometimes years. At many places Bitumen roads are preferred because they can be repaired very fast. However in some South East Asian Asian countries, city roads made of concrete, are replaced in two days. In a four lane road, two lanes are dug up on Saturday, the rubble is transported away and fresh ready mixed concrete is poured on Sunday and on Monday the traffic commences as usual on the new concrete road. Thus on the two days when traffic is thin because of offices having holidays is utilized to replace the concrete road. On next Saturday and Sunday, the process is repeated for the balance part of the concrete road. Time saving is the biggest benefit. The trouble caused to innumerable city persons travelling can be drastically cut. If we can calculate the benefit of this, then the benefit cost ratio will be much more than one.The paper attempts to explore the various possible methods of replacing a concrete road in two days.

Keywords: Concrete road, sulphur concrete, tremix concrete.

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43.

Authors: **Anurag Baghela**

Paper Title: **Application of Markov Process to Improve Production of Power Plant**

Abstract: Due to the fast paced growth of world economy the energy demand is increasing very rapidly. To maintain the quality of power, economical production and long run performance of the plants should be kept failure free (as far as possible). So, these industries invest much more for up-gradation, high level of automation and use sophisticated machineries to get the desire level of results. But, still these industries are lagging in dependable and reliable supplies of electricity. Today most of the power plants are operating with low efficiency. In most of the cases it is less than 30%. There are a few plants in which efficiency is more than 60%.

To prevent such mishaps a detailed system behavioral analysis along with maintenance planning is important. For which a mathematical model is necessary which exhibit the system upstate in quantitative form and analyze system performance in actual operating conditions. It is also helpful to process design department for modification in design and to maintenance department to in monitoring the system performance and planning in advance to keep system failure free for longer duration.

The work presented here is mainly concerned with reliability centered maintenance of thermal power plant. The study is conducted in a Thermal Power Plant situated in Rajasthan.

Keywords: MTBF, MTTF

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44.

Authors: **Priyanka Sharma, Shiv Kumar**

Paper Title: **Forgery Resistant Scrambled Image Watermarking**

Abstract: Collusion is a mechanism where some secret information shared between many peers is forged to use for illegal purpose. The watermark embedded in an image is the secret information which can be used to claim the originality by its owner. The images delivered to different peers have different watermarks embedded into them. All those malicious attackers can compare the watermarked images to determine the common places where the watermark has been embedded; hence the watermark can be attacked through collusion. So a new technique for watermarking which is collusion resistant has been proposed here. This scheme uses averaged coefficients based discrete cosine transform to embed the watermark at different areas in different images. The main advantage of the scheme is that the image is scrambled before embedding of the watermark and descrambled after embedding. This leads to spreading of the watermarking information throughout the watermarked image and it is very difficult to detect it. The correlation results show that the watermark is very robust.

Keywords: 4 to 8 bit encoding, DCT, Mid Band coefficient, Scrambling, Watermarking..

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45.

Authors: **Balwinder Singh Surjan, Ruchira Garg**

Paper Title: **Power System Stabilizer Controller Design for SMIB Stability Study**

Abstract: The low frequency oscillations (LFOs) are related to the small signal stability of a power system and are detrimental to the goals of maximum power transfer and power system security. As power systems began to be operated closer to their stability limits, the weakness of a synchronizing torque among the generators was recognized as a major cause of system instability instead of damping torque. Automatic voltage regulators (AVRs) can improve the steady-state stability of the power systems. The addition of a supplementary controller into the control loop, such as power system stabilizers (PSSs) to the AVRs on the generators, provides the means to reduce the inhibiting effects of low frequency oscillations. The power system stabilizers work well at the particular network configuration and steady state conditions for which they were designed. Once conditions change the performance degrades To overcome the drawbacks of power system stabilizer (PSS), numerous techniques are available in the literature. In the present work, the effectiveness of conventional PSS and PID-PSS has been compared.

Keywords: LFOs, AVRs, PSSs, PSS, PID-PSS.

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46.

Authors: **M.Bencherif, A. Chermitti**

Paper Title: **New Method to Assess the Losses Parameters of the Photovoltaic Modules**

Abstract: The determination of an effective method able to estimate the parameters of a photovoltaic panel is essential for the development and the performance of analysis of such equipment. In this paper, we present a new simple and effective method in order to extract the parameters of the photovoltaic modules by using the standard diode model. This model requires that the five parameters be known, the photocurrent Iph, the reverse saturation current Is, the resistance Rs, the shunt resistance Rsh and the curve fitting parameter A (the ideality factor) or the thermal voltage a. For that we formulated an equation binding only the two losses parameters Rs and Rsh. In order to solve this equation and to determine the shunt resistance and the thermal voltage, we expose the computation models of the series resistance Rs, which give excellent approximations. While the other parameters Iph and Is depend exclusively on the parameters Rs, Rsh, a and the short circuit current Isc and the open circuit voltage Voc. This method is validated experimentally by three different flat plat PV modules of various technologies (Monocrystalline, polycrystalline and thin film panels) and manufacturers.

Keywords: photovoltaic modelling; single diode model; parameters of the model; curves fitting.

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47.

Authors: **Meenu Dadwal, V.K.Banga**

Paper Title: **Estimate Ripeness Level of fruits Using RGB Color Space and Fuzzy Logic Technique**

Abstract: In this paper, a general approach is developed to estimate the ripeness level without touching the fruit.

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The two techniques has been used for this purpose are - color image segmentation and fuzzy logic technique. Four images of a single fruit have been clicked from four directions and separate desired part from each image using color image segmentation. Now calculate mean values of primary colors (Red, Green and Blue) of segmented parts and give it as input to FIS (Fuzzy Inference System) editor 1. FIS editor 1 gives decision whether this part of fruit is ripe, under ripe, about to ripe, about to overripe or overripe. The same operation is applied on remaining three images. These four outputs have been given to FIS editor 2. This editor gives decision whether the whole fruit is ripe, under ripe, or overripe.

Keywords: Color image segmentation, Fuzzy logic, RGB color space, Ripeness.

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Authors:	**Sangamesh G. Sakri, G. V. Jayaramaiah**
Paper Title:	**Consumers' Behaviour towards Incentives for Solar Water Heater Use in Karnataka, India**

Abstract: The demand-side management (DSM) programs typically cover a variety of policies by the utilities to reduce the consumption of electricity. One such policy is to encourage the installation of appliances that use less electricity to perform their functions. In Karnataka DSM measures are in the initial stage. Electric water heating shares major portion (approximately 23%) of the electricity in the domestic sector. With the available incentives from the utility, the shift to other methods of water heating is not encouraging. This paper proposes alternative incentives which are offered to consumers to increase the penetration the solar water heaters. A survey conducted to assess the consumers' behavior is analysed for the proposed incentives.

Keywords: Conservation, Demand, Heater, Solar

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49.

Authors:	**Shweta Saxena, Kavita Burse**
Paper Title:	**A Survey on Neural Network Techniques for Classification of Breast Cancer Data**

Abstract: Breast cancer is the most common disease and major cause of death among women. Early detection of this disease can greatly enhance the chances of long-term survival of breast cancer victims. Artificial Neural Networks (ANN) have been widely used for cancer prediction and prognosis. This paper studies various techniques used for the diagnosis of breast cancer using ANN. Different methods for breast cancer detection are explored and their accuracies are compared.

Keywords: Artificial neural networks, Breast cancer diagnosis, Wisconsin breast cancer dataset.

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campaign-312992.
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50.

Authors: **D.Jayanthi, M.Bommy**

Paper Title: **Vision-based Real-time Driver Fatigue Detection System for Efficient Vehicle Control**

Abstract: In modern days, a large no of automobile accidents are caused due to driver fatigue. To address the problem we propose a vision-based real-time driver fatigue detection system based on eye-tracking, which is an active safety system. Eye tracking is one of the key technologies, for, future driver assistance systems since human eyes contain much information about the driver's condition such as gaze, attention level, and fatigue level. Face and eyes of the driver are first localized and then marked in every frame obtained from the video source. The eyes are tracked in real time using correlation function with an automatically generated online template. Additionally, driver's distraction and conversations with passengers during driving can lead to serious results. A real-time vision-based model for monitoring driver's unsafe states, including fatigue state is proposed. A time-based eye glance to mitigate driver distraction is proposed.

Keywords: Driver fatigue, Eye-Tracking, Template matching, Fatigue Detection.

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51.	**Authors:**	**Balwinder Singh Surjan**
	Paper Title:	**Large Signal and Small Signal Stability of Single Machine Infinite System using Dynamic Brake and Static Shunt Compensator**

Abstract: In this paper thyristor controlled dynamic brake and static shunt compensator controllers are employed to enhance the transient and small signal stability investigation stability of power system represented through Single Machine connected to Infinite Bus (SMIB). The Phillips-Heffron representation of SMIB system is also modified for reactive power inclusion. The controllers Power System Stabilizer (PSS), Static Shunt Compensator (SSC), Thyristor Controlled Dynamic Brake (TCDB) are tuned for the minimization of performance index. The results obtained here indicate explicitly that the coordinated operation of proposed controllers is effective in improving transient as well as small signal stability of the system.

Keywords: ISE, PSS, SMIB, SSC, SVC, TCDB.

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52.	**Authors:**	**Ar Anuj Jaiswal, Ashutosh Sharma, Jigyasa Bisaria**
	Paper Title:	**Estimation of Public Transport Demand in Million Plus Indian Cities based on Travel Behavior**

Abstract: The rapid growth in vehicles population has put enormous strains in all urban roads in Indian cities with population between 1 to 2 million. The major factors influencing public transport ridership are poor service quality and more traveling time. This study presents a quantitative model and identified the factors that affect the public transport ridership. A weighed regression model using data of public preferences in travel time, travel cost, and other

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quality related parameters is build and probability of two wheeler users switching over to public transport is estimated. With this model, the expected increase in public transport ridership for Bhopal and similar Indian cities can be approximated. This model can also assist transport planners and service providers to find innovative and financially viable solutions for better public transport facilities.

Keywords: Public transport demand estimation, travel behavior, demand parameters

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53.

Authors: **Sandeep Dhariwal, Vijay K. Lamba, Ritu Vijay**

Paper Title: **CNT – A Solution for Interconnects**

Abstract: In this paper we have studied the properties of CNT as interconnects and calculated the parameters to analyse our results through table and plots. Due to their excellent electrical properties and small size, metallic carbon nanotubes (CNTs) are promising materials for interconnect wires in future integrated circuits. Simulations have firmly established CNTs as strong contenders for replacing or complementing copper interconnects. As copper wires are scaled down to narrow dimensions to keep up with the miniaturization of the transistors according to Moore's Law, they suffer from adverse narrow-width effects degrading the chip performance. In the long term, the introduction of another interconnects material as a replacement for copper might be the solution. In this review paper, CNTs offer great promises as alternative interconnect materials.

Keywords: CNT, SWCNT, MWCNT, RLC Model.

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Authors: **Krishankant, Jatin Taneja, Mohit Bector, Rajesh Kumar**

Paper Title: **Application of Taguchi Method for Optimizing Turning Process by the effects of Machining Parameters**

Abstract: This paper reports on an optimization of turning process by the effects of machining parameters applying Taguchi methods to improve the quality of manufactured goods, and engineering development of designs for studying variation. EN24 steel is used as the work piece material for carrying out the experimentation to optimize the Material Removal Rate. The bars used are of diameter 44mm and length 60mm. There are three machining parameters i.e. Spindle speed, Feed rate, Depth of cut. Different experiments are done by varying one parameter and keeping other two fixed so maximum value of each parameter was obtained. Operating range is found by experimenting with top spindle speed and taking the lower levels of other parameters. Taguchi orthogonal array is designed with three levels of turning parameters with the help of software Minitab 15. In the first run nine experiments are performed and material removal rate (MRR) is calculated. When experiments are repeated in second run adain MRR is calculated. Taguchi method stresses the importance of studying the response variation using the signal–to–noise (S/N) ratio, resulting in minimization of quality characteristic variation due to uncontrollable parameter. The metal removal rate was considered as the quality characteristic with the concept of "the larger-the-better". The S/N ratio for the larger-the-better Where n is the number of measurements in a trial/row, in this case, n=1 and y is the measured value in a run/row. The S/N ratio values are calculated by taking into consideration with the help of software Minitab 15. The MRR values measured from the experiments and their optimum value for maximum material removal rate. Every day scientists are developing new materials and for each new material, we need economical and efficient machining. It is also predicted that Taguchi method is a good method for optimization of various machining parameters as it reduces the number of experiments. From the literature survey,it can be seen that there is no work done on EN24 steel. So in this project the turning of EN24 steel is done in order to optimize the turning process parameters for maximizing the material removal rate.

Keywords: Taguchi Method, Machining Parameters, Turning Process, EN24 Steel, Software Minitab15

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55.

Authors: **C.Thippeswamy, J.Chinna Babu, K.Padmapriya**

Paper Title: **Emulator for FPGA based RADAR signal processing**

Abstract: The present day RADARs use complex schemes such as stagger PRI, jitter PRI along with frequency agile characteris-tics. The frequency agile RADARs switch frequencies with in a pulse to get different types of advantages. Today lot of RADAR (Radio Detection and Ranging) signal processing takes place on FPGA(Field Programming Gate Array) platform.Th-se signal processing algor-thms include pulse parameters estimation, deint-erleaving of mixed pulse patterns, processing complex chirp signals etc. All these algorithms need to be tested at various levels before they get integrated in to final system. However today no technique or solution available by which, these algoritms can be tested on FPGA with realistic signals. In this project a RADAR signal emulator will be built which can generate the samples even corresponding to multiple complex RADARs at a time. Since FPGA is a parallel platform this emulation is possible.

The complete project development consists of mainly two modules, the scenario creator and control logic. The control logic communicates with PC using serial port to capture the parameters set by the user in PC. These parameters are loaded into respective source simulator modules. Each source simulator module consists of NCO for digital carrier generation and pulse modulator. The NCO is programmable to generate all types of frequency agile signals in real time. A top level module consists of all these blocks and will be synthesized to Xilinx FPGAs. The final FPGA output will be demonstrated in real-time with Chip scope.

Keywords: RADAR,FPGA, PRI, Jitter PRI, Emulator.

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56.	**Authors:**	**Wadhwa Preeti, Vinita Wadhwa, Sandhya Bhavsar**	
	Paper Title:	**Image Processing**	
	Abstract: It is truly said "a picture is worth a thousand words, but an image is worth a thousand pictures". an image .Image processing is any form of signal processing for which the input is an image, such as a photograph or video frame; the output of image processing may be either an image or, a set of characteristics or parameters related to the image. It is the manipulation of numeric data contained in a digital image for the purpose of enhancing its visual appearance. Through image processing, faded pictures can be enhanced. Originally developed for space exploration and biomedicine, image processing and analysis are now used in a wide range of industrial, artistic, and educational applications. An image processing can be digital, optical or analog image processing. **Keywords:** Image restoration, Spatial filters, Frequency domain filters, Geometric transform. **References:** 1. http://en.wikipedia.org/wiki/Image_processing. 2. https://www.spacetelescope.org/static/projects/fits_liberator/image_processing.pdf. 3. R.S. Sedha; A Textbook Of Applied Electron; Edition 2 4. ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=6329991 5. Z. G. Li, J. H. Zheng, and S. Rahardja Image and Video Synthesis, Rendering, and Visualization:;IEEE explore.published 6. Y.-M. Huang, L. Moisan, M. K. Ng, and T. Zeng: Multiplicative Noise Removal via a Learned Dictionary; published.		**279-281**
57.	**Authors:**	**A. B. Sawant, M. B. Kumthekar, V. V. Diwan, K. G. Hiraskar**	
	Paper Title:	**Experimental Study on Partial Replacement of Cement by Neutralized Red Mud in Concrete**	
	Abstract: Disposal of large quantities of red mud; a solid- waste generated at the Aluminum plants all over the world possess an increasing problem of storage, land cost & availability and pollution. Because of the complex physico-chemical properties of red mud it is very challenging task for the designers to find out the economical utilization and safe disposal of red mud.. Due to industrialization, infrastructure development and soft housing policy of Government of India, the construction industry is in full boom due to which within short span of time there is a tremendous increase in the utilization of cement and concrete for various construction activities. It is expected that the same rate will continued in the next decade and this may invite the threat to the environment. Availability of raw material required for manufacturing of cement and production of concrete are limited in nature. This increased demand will lead to fast depletion of natural resources and will cause big threat to environment. So as to overcome this problem it is very much essential to utilize the industrial waste materials and by-products generated in manufacturing of cement and in concrete construction. In this paper the attempt is made to check the effectiveness of neutralized red mud as a partial replacement of portland cement. **Keywords:** Water conservation, Contour trenches, watershed development, Village pond, Social mapping **References:** 1. Satish Chandra, Waste materials used in Concrete Manufacturing, A reference book. ph 297-343 2. IS 10262- 2007 Recommended Guidelines for Concrete Mix Design 3. IS 456- 2000 Plain and Reinforced Concrete - Code of Practice 4. IS 516- 1959 Methods of Tests for Strength of Concrete 5. IS 5816- 1999 Splitting Tensile Strength of Concrete -Method of Test 6. M. L. Gambhir, Concrete Technology (3rd Edition), Published by The McGraw-Hill Companies, New Delhi 7. M. S. Shetty, Concrete Technology Theory & Practice, Published by S. CHAND & Company, Ram Nagar, New Delhi 8. B. S. Hamad, Rteil. A. A. and Mutasseem, E. F., "Effect of used engine oil on properties and hardened concrete," Construction and Building materials, No. 17, 2003, pp. 311-318. 9. Chandler John: The stacking and solar drying process for disposal of Bauxite Tailing in Jamaica: Proc. Intl. Conference of Bauxite Tailings; Kingston, Jamaica; Oct. 1986. 10. Claudia Brunori, Carlo Cremisini, Paolo Massanisso, Valentina Pinto, Leonardo Torricelli, Reuse of a treated red mud bauxite waste: studies on environmental compatibility, Journal of Hazardous Materials B117 (2005) 55–63. 11. Craig Klauber, Markus Grafe and greg Power, Review of Bauxite Residue "Re-Use" Options, CSIRO Document DMR-3609, May 2009 1-77 12. D.K. Grubbs, S.C. Libby, J.K. Rodenburg, K.A. Wefers, The geology mineralogy and clarification properties of red and yellow Jamaican bauxites, in Proceedings of the Bauxite Symposium IV, J. Geol. Soc. Jamaica (1980) 176–186. 13. Dr. D S V Prasad, Dr. G V R Prasad Raju & M Anjan Kumar, Utilization of Indusrtial waste in Flexible Pavement Construction, downloaded from www.ejge.com, dated 23-03-2009 14. Dr. K. K. Jain, S. K. Singh and Laljee Sahu, 'The Geo Technical properties of Red Mud and Red Mud Lime Mixtures', Indian Highways, October 2001. ph. 120-127 15. Dr. R. P. Joshi, V.G.M. Desai and B. S. Shetty, 'The use of locally available materials for low cost housing', Proceeding of National seminar on 'Recent advances in low cost building material and technology', Anantapur 1992. ph. 214-227 16. Dr. Y. P. Kakar, 'Management of Industrial Solid Waste Need for Recycling', Civil Engineering & Construction Review, February 1998. Ph 67-71 17. Glannville J.I. Bauxite waste bricks (Jamaica): evaluation report. . IDRC, Ottawa in various pagings-June 1991. 18. GLOBAL CEMENT to 2020, report on world production and consumption of cement by International cement review.(Dec. 2007), 201-203. 19. Guelensoy, Hueseyin, Mahramanhoglu, Mehmet. , 'Studies on the strengths of concretes produced from cements prepared with the addition of red mud', Cimento ve Beton Dunyasi (1996), 1(3), 17-21. 20. Hawkins, G. J., Bhatty, J. I and O'Hare, A. T., Cement kiln dust production, management and disposal, Portland Cement Association, PCA, R&D No. 2737, 2003.		**282-286**
58.	**Authors:**	**Gajanan N. Munishwar, Ashok Pise**	

	Paper Title:	**Design and Development of Test Rig for Measurement of Frictional Torque of a Half Engine**	
	Abstract: Automobile Industry is the largest industry in the world. Automotive engines need to be reconditioned after certain running. The frictional torque of a half engine (which consists of cylinder block, pistons with rings and gudgeon pins, connecting rods, crankshaft and bearings) is about 75% to 80 % of the total frictional torque of that engine. The components of new engines are manufactured with high degree of automation and accuracy but the same is not available during their reconditioning. Obviously, due to difference in accuracy of CNC machines and GPMs, a newly manufactured half engine has comparatively less frictional torque than a reconditioned one. This results in somewhat poor performance of a reconditioned engine as compared with the new one. The objective of this research work is to design & develop a test rig which could measure the frictional torque of a reconditioned half engine accurately and to bring quality consciousness in engine reconditioning business. **Keywords:** Automotive half engine, engine reconditioning, engine performance, frictional torque measurement, measuring test rig. **References:** 1. http://www.mondellotwister.com/Rebuild Your First Engine.pdf /15/12/2011. 2. Ernest Venk and Water Billiet, "Automotive Engines, Maintenance and Repairs", D.B Taraporevala Sons and Co. private Ltd. pp. 85,105-121, 159-161. 3. Verbal discussion with field experts in automobile industry. 4. William J. Fleming, "Automotive Torque Measurement: A Summary of Seven Different Methods", IEEE Transactions on Vehicular Technology, Vol. Vt-31, No. 3, August 1982. 5. Market and field survey in MIDCs of Kolhapur. 6. Market and field survey in garages of Kolhapur. 7. TATA Diesel Vehicles Workshop Manual, pp. 01-17	**287-289**
59.	**Authors:**	**Anisaara Nadaph, Vikas Maral**	
	Paper Title:	**A Business Model for Hybrid Shared-Nothing and Shared-data Storage and replication Scheme for Large-scale Data Processing**	
	Abstract: This project is for hybrid storage architecture, to make use of both shared-nothing and shared-disk architectures. The user can either upload file or can just synchronize the original copy from the master computer synchronized before. All the changes made on the original file will be reflected on the file stored on server. All files stored on the cloud server are broken into packets of some definite size and these packets will be distributed on various hard disks this data are replicated using the RAID-1 concept, which are merged as a whole again whenever the user makes an access to the file on the on-line copy or makes changes to the original copy which is synchronized with the application. The packets are encrypted using a block of ECB encrypted cipher text; all the blocks are dependent on all the previous blocks. **Keywords:** Cloud Computing, Replication, hybrid architecture, DES, CBC.. **References:** 1. Huaiming Song, Xian-He Sun, Yong Chen "A Hybrid Shared-nothing/Shared-data Storage Scheme for Large-scale Data Processing" Cluster, Cloud and Grid Computing (CCGrid), 2011 11th IEEE/ACM International Symposium on 23-26 May 2011, 616 – 617 2. Neha Jain and Gurpreet Kaur "Implementing DES Algorithm in Cloud for Data Security" VSRD-IJCSIT, Vol. 2 (4), 2012, 316-321 3. Eman M. Mohamed "Modern Encryption Techniques for Cloud Computing Randomness and Performance" e Informatics and Systems (INFOS), 2012 8th International Conference on 14-16 May 2012, CC-1 - CC-6 4. Michale G .Norman "Much Ado Shared-Nothing" ACM SIGMOD Record Homepage archive Volume 25 Issue 3, Sept. 1996 , 16 – 21 5. Matthieu Exbrayat " A Parallel Extension for Existing Relational Database Management Systems" Information Technology, 1997. BIWIT '97., Proceedings of the Third Basque International Workshop on Digital Object Identifier: 10.1109/BIWIT.1997.614053 , 1997 , 75- 81 6. David J. DeWitt ""Data placement in shared-nothing parallel database systems". The VLDB Journal —a G. O. Young, "Synthetic structure of industrial plastics (Book style with paper title and editor)," in Plastics, 2nd ed. vol. 3, J. Peters, Ed. New York: McGraw-Hill, 1964, pp. 15–64. 7. W.-K. Chen, Linear Networks and Systems (Book style). Belmont, CA: Wadsworth, 1993, pp. 123–135. 8. H. Poor, An Introduction to Signal Detection and Estimation. New York: Springer-Verlag, 1985, ch. 4. 9. B. Smith, "An approach to graphs of linear forms (Unpublished work style)," unpublished.	**290-295**
60.	**Authors:**	**M.A.Shabad, S.S.Apte**	
	Paper Title:	**Routing Improvement in Wireless Mesh Networks**	
	Abstract: A wireless mesh network (WMN) has emerged as a wireless backbone for Internet access for next-generation wireless network. In Mesh Network several applications like audio/video conference, vehicular network encourage, require the support of multicast communication with quality-of-service (QoS) guarantee. In multihop Wireless Mesh Network there is frequent link failure caused by various reasons as channel interference, dynamic obstacles, demand of different bandwidths. Because of these link failures the throughput of wireless mesh network severely decreases which is expensive and manual management is required. In this paper we propose a system which will recover from failure links. Channel and radio diversities can be used to generate the new configuration. **Keywords:** Wireless Mesh Network, Self-Reconfiguration, multi-radio, network-planning. **References:** 1. K. Kim, "Self-Reconfigurable Wireless Mesh Networks," IEEE/ACM Transaction on networking , pp. 393-404, April 2011 2. C. Ribeiro, A. Ferworn, J. Tran, "Wireless Mesh Network Performance For Urban Search And Rescue Mission", International Journal of Computers & Communications (IJCNC Vol2), March 2010. 3. I. Ferworn, N. Tran, J. Tran et al., "WiFi repeater deployment for improved communication in confined-space urban disaster search", IEEE	**296-298**

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Authors:	**C.Swetha, S.Suganya, V.Shobana, S.Sivaranjini, B.Pradeep Raja**
Paper Title:	**Collision Vigilant With Automatic Dialer**

Abstract: Security in travel is primary concern for everyone. New generation of cars are improved in such a way that the number of accidents decreases. Innovative ideas has implemented and emerged in order to reduce the risk of accident.This Project describes a design of effective alarm system that can monitor an automotive / vehicle / car condition in travelling. The project name "COLLISION VIGILANT WITH AUTOMATIC DIALLER" is designed along with a DTMF to prevent the accident and to inform emergency about an accident that has occurred.

Keywords: Sensors,DTMF,Microcontroller 8051

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62.

Authors:	**Rintu Khanna, Pooja Manrai**
Paper Title:	**Damping of Low frequency Oscillations Using GA based Unified Power Flow Controller**

Abstract: The paper presents a new control method of damping low frequency power system oscillations using Genetic Algorithm (GA) based Unified Power Flow Controller (UPFC) Phillips-Herffron model of a single-machine power system equipped with a UPFC is used to model the system. UPFC controller based upon phase angle of shunt converter (exciter)□□E has been designed. The effectiveness of UPFC controller without using GA and GA based UPFC controller (GA-UPFC) has been demonstrated at variable loading conditions.. Respective models have been developed and simulated in Matlab/Simulink. The results of these studies show that the designed controller has an excellent capability in damping power system oscillations.

Keywords: UPFC; Genetic Algorithm; Damping controller; Low frequency oscillations

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63.

Authors:	**Ankit Pincha**
Paper Title:	**Risk Mitigation of Denial of Service Attack**

Abstract: In this paper, I propose to mitigate the risk of denial of service attack. This involves identification of

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	genuine traffic and giving it a higher priority. This results in lower priority for suspected malicious traffic. The priority of threads below the specified threshold will be discarded. Spoofed Denial of service attacks have also been taken care of thereby providing maximum security to the system by the attacker. The attacker suffers from a reduced priority of service. The reduced priority means greater response time for service request. The attacker might find his attack to be effective whereas the system might still be handling the request of genuine traffic. **Keywords:** DOS, risk, mitigation, attack, denial of service, prevention. **References:** 1. http://support.microsoft.com/kb/162326 2. http://searchsoftwarequality.techtarget.com/definition/denial-of-service 3. http://www.denial-of-service-attacks.com/what-is-direct-denial-of-service.html 4. http://cr.yp.to/syncookies.html 5. http://www.ddosattacks.net/2012/07/25/five-ways-to-protect-against-distributed-denial-of-service-ddos-attacks/ 6. http://royal.pingdom.com/2009/03/10/the-anatomy-of-a-ddos-attack/?isalt=0 7. Internet Denial of Service: Attack and Defense Mechanisms by Jelena Mirkovic, Sven Dietrich, David Dittrich, Peter Reiher	
64.	**Authors:** **Luaay Abdul Wahed Shihab** **Paper Title:** **Wireless LAN Security and Management** **Abstract:** The purpose of the project is to protect the LAN from hackers and make the network security and network is protected using the type of stream encryption is the encryption and one of the systems, encryption of electronic strong because of high security and the difficulty of breaking and stream encryption prevents explicit text to cipher text bit – bit stream encryption key is a sequential or Theorem To generate the key sequence is used to remove recorded value of the given elementary Function and feedback System and network management and security management. **Keywords:** W LAN Security, WI FI protect , SSAD, AP , EBSS **References:** 1. Wireless networking in the developing / first edition / 2006 2. Cipher system te protection of communication by BEKER . H and PIPER. F 3. Communication network / SHARAM HEKMET 4. Concept of networking / IHT/ first edition / 2000-2001 5. Automated network management system by DOUGLAS E. COMER 6. Wireless LAN security – challenges and solution / PROF. RATHNAKAN . DR. NATHAN. 7. Internet working with TCP/ IP / FIFTH EDIYION / by DOUGLAS E . COMER.	**314-317**