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Dr. Hung-Wei Wu
Assoc. Professor, Department of Computer and Communication, Kun Shan University, Taiwan

Dr. Vuda Sreenivasarao
Associate Professor, Department of Computr And Information Technology, Defence University College, Debrezeit Ethiopia, India

Dr. Sanjay Bhargava
Assoc. Professor, Department of Computer Science, Banasthali University, Jaipur, India

Dr. Sanjoy Deb
Assoc. Professor, Department of ECE, BIT Sathy, Sathyamangalam, Tamilnadu, India

Dr. Papita Das (Saha)
Assoc. Professor, Department of Biotechnology, National Institute of Technology, Duragpur, India

Dr. Waail Mahmod Lafta Al-waely
Assoc. Professor, Department of Mechatronics Engineering, Al-Mustafa University College – Plastain Street near AL-SAAKKRA square- Baghdad - Iraq

Dr. P. P. Satya Paul Kumar
Assoc. Professor, Department of Physical Education & Sports Sciences, University College of Physical Education & Sports Sciences, Guntur

Dr. Sohrab Mirsaeidi
Associate Professor, Department of Electrical Engineering, Universiti Teknologi Malaysia (UTM), Skudai, Johor, Malaysia

Dr. Ehsan Noroozinejad Farsangi
Associate Professor, Department of Civil Engineering, International Institute of Earthquake Engineering and Seismology (IIEES) Farmanieh, Tehran - Iran

Dr. Omed Ghareb Abdullah
Associate Professor, Department of Physics, School of Science, University of Sulaimani, Iraq

Dr. Khaled Eskaf
Associate Professor, Department of Computer Engineering, College of Computing and Information Technology, Alexandria, Egypt

Dr. Nitin W. Ingole
Associate Professor & Head, Department of Civil Engineering, Prof Ram Meghe Institute of Technology and Research, Badnera Amravati

Dr. P. K. Gupta
Associate Professor, Department of Computer Science and Engineering, Jaypee University of Information Technology, P.O. Dumehar Bani, Solan, India

Dr. P.Ganesh Kumar
Associate Professor, Department of Electronics & Communication, Sri Krishna College of Engineering and Technology, Linyi Top Network Co Ltd Linyi , Shandong Provience, China

Dr. Santhosh K V
Associate Professor, Department of Instrumentation and Control Engineering, Manipal Institute of Technology, Manipal, Karnataka, India

Dr. Subhendu Kumar Pani
Assoc. Professor, Department of Computer Science and Engineering, Orissa Engineering College, India

Dr. Syed Asif Ali
Professor/ Chairman, Department of Computer Science, SMI University, Karachi, Pakistan

Dr. Vilas Warudkar
Assoc. Professor, Department of Mechanical Engineering, Maulana Azad National Institute of Technology, Bhopal, India

Dr. S. Chandra Mohan Reddy
Associate Professor & Head, Department of Electronics & Communication Engineering, JNTUA College of Engineering (Autonomous), Cuddapah, Andhra Pradesh, India

Dr. V. Chittaranjan Das
Associate Professor, Department of Mechanical Engineering, R.V.R. & J.C. College of Engineering, Guntur, Andhra Pradesh, India

Dr. Farshad Zahedi

Associate Professor, Department of Mechanical Engineering, University of Texas at Arlington, Tehran, Iran

Dr. Atishey Mittal

Associate Professor, Department of Mechanical Engineering, SRM University NCR Campus Meerut Delhi Road Modinagar, Aligarh, India

Dr. Hussein Togun

Associate Professor, Department of Mechanical Engineering, University of Thiqar, Iraq

Dr. Shrikaant Kulkarni

Associate Professor, Department of Senior faculty V.I.T., Pune (M.S.), India

Dr. Mukesh Negi

Project Manager, Department of Computer Science & IT, Mukesh Negi, Project Manager, Noida, India

Dr. Sachin Madhavrao Kanawade

Associate Professor, Department Chemical Engineering, Pravara Rural Education Society's,Sir Visvesvaraya Institute of Technology, Nashik, India

Dr. Ganesh S Sable

Professor, Department of Electronics and Telecommunication, Maharashtra Institute of Technology Satara Parisar, Aurangabad, Maharashtra, India

Dr. T.V. Rajini Kanth

Professor, Department of Computer Science Engineering, Sreenidhi Institute of Science and Technology, Hyderabad, India

Dr. Anuj Kumar Gupta

Associate Professor, Department of Computer Science & Engineering, RIMT Institute of Engineering & Technology, NH-1, Mandi Godindgarh, Punjab, India

Dr. Hasan Ashrafi- Rizi

Associate Professor, Medical Library and Information Science Department of Health Information Technology Research Center, Isfahan University of Medical Sciences, Isfahan, Iran

Dr. Golam Kibria

Associate Professor, Department of Mechanical Engineering, Aliah University, Kolkata, India

Dr. Mohammad Jannati

Professor, Department of Energy Conversion, UTM-PROTON Future Drive Laboratory, Faculty of Electrical Enginering, Universit Teknologi Malaysia,

Dr. Mohammed Saber Mohammed Gad

Professor, Department of Mechanical Engineering, National Research Centre- El Behoos Street, El Dokki, Giza, Cairo, Egypt,

Dr. V. Balaji

Professor, Department of EEE, Sapthagiri College of Engineering Periyanahalli,(P.O) Palacode (Taluk) Dharmapuri,

Dr. Naveen Beri

Associate Professor, Department of Mechanical Engineering, Beant College of Engg. & Tech., Gurdaspur - 143 521, Punjab, India

Dr. Abdel-Baset H. Mekky

Associate Professor, Department of Physics, Buraydah Colleges Al Qassim / Saudi Arabia

Dr. T. Abdul Razak

Associate Professor, Department of Computer Science Jamal Mohamed College (Autonomous), Tiruchirappalli – 620 020 India

Dr. Preeti Singh Bahadur

Associate Professor, Department of Applied Physics Amity University, Greater Noida (U.P.) India

Dr. Ramadan Elaiess

Associate Professor, Department of Information Studies, Faculty of Arts University of Benghazi, Libya

Dr. R . Emmaniel

Professor & Head, Department of Business Administration ST, ANN, College of Engineering & Technology Vetapaliem. Po, Chirala, Prakasam. DT, AP. India

Dr. C. Phani Ramesh

Director cum Associate Professor, Department of Computer Science Engineering, PRIST University, Manamai, Chennai Campus, India

Dr. Rachna Goswami

Associate Professor, Department of Faculty in Bio-Science, Rajiv Gandhi University of Knowledge Technologies (RGUKT) District-Krishna, Andhra Pradesh, India

Dr. Sudhakar Singh

Assoc. Prof. & Head, Department of Physics and Computer Science, Sardar Patel College of Technology, Balaghat (M.P.), India

Dr. Xiaolin Qin

Associate Professor & Assistant Director of Laboratory for Automated Reasoning and Programming, Chengdu Institute of Computer Applications, Chinese Academy of Sciences, China

Dr. Maddila Lakshmi Chaitanya

Assoc. Prof. Department of Mechanical, Pragati Engineering College 1-378, ADB Road, Surampalem, Near Peddapuram, East Godavari District, A.P., India

Dr. Jyoti Anand

Assistant Professor, Department of Mathematics, Dronacharya College of Engineering, Gurgaon, Haryana, India

Dr. Nasser Fegh-hi Farahmand

Assoc. Professor, Department of Industrial Management, College of Management, Economy and Accounting, Tabriz Branch, Islamic Azad University, Tabriz, Iran

Dr. Ravindra Jilte

Assist. Prof. & Head, Department of Mechanical Engineering, VCET Vasai, University of Mumbai , Thane, Maharshtra 401202, India

Dr. Sarita Gajbhiye Meshram

Research Scholar, Department of Water Resources Development & Management Indian Institute of Technology, Roorkee, India

Dr. G. Komarasamy

Associate Professor, Senior Grade, Department of Computer Science & Engineering, Bannari Amman Institute of Technology, Sathyamangalam,Tamil Nadu, India

Dr. P. Raman

Professor, Department of Management Studies, Panimalar Engineering College Chennai, India

Dr. M. Anto Bennet

Professor, Department of Electronics & Communication Engineering, Veltech Engineering College, Chennai, India

Dr. P. Keerthika

Associate Professor, Department of Computer Science & Engineering, Kongu Engineering College Perundurai, Tamilnadu, India

Dr. Santosh Kumar Behera

Associate Professor, Department of Education, Sidho-Kanho-Birsha University, Ranchi Road, P.O. Sainik School, Dist-Purulia, West Bengal, India

Dr. P. Suresh

Associate Professor, Department of Information Technology, Kongu Engineering College Perundurai, Tamilnadu, India

Dr. Santosh Shivajirao Lomte

Associate Professor, Department of Computer Science and Information Technology, Radhai Mahavidyalaya, N-2 J sector, opp. Aurangabad Gymkhana, Jalna Road Aurangabad, India

Dr. Altaf Ali Siyal

Professor, Department of Land and Water Management, Sindh Agriculture University Tandojam, Pakistan

Dr. Mohammad Valipour

Associate Professor, Sari Agricultural Sciences and Natural Resources University, Sari, Iran

Dr. Prakash H. Patil

Professor and Head, Department of Electronics and Tele Communication, Indira College of Engineering and Management Pune, India

Dr. Smolarek Małgorzata

Associate Professor, Department of Institute of Management and Economics, High School of Humanitas in Sosnowiec, Wyższa Szkoła Humanitas Instytut Zarządzania i Ekonomii ul. Kilińskiego Sosnowiec Poland, India

| | **Authors:** | **Divya Ahir, Khayti Darbar, Ankur Dave** | |
| | **Paper Title:** | **802.11i Encryption Key Distribution Using Quantum Cryptography** | |

Abstract: Quantum cryptography is an emerging technology in which two parties may simultaneously generate shared, secret cryptographic key material using the transmission of quantum states of light. Key distribution is the problem of classical cryptography algorithm, and tends to provide safe channel to transport key. Quantum cryptography could distribute key in quantum channel. Eavesdropper cannot access to key on quantum channel. Research on the application of quantum cryptography in mobile networks is still premature. In this paper, we analyze the interests of using quantum technique for the distribution of encryption keys in 802.11 wireless networks, and propose a scheme integrating quantum cryptography in 802.11i security mechanisms for the distribution of the encryption keys. The use of an apparatus network to provide alternative line-of-sight paths is also discussed.

Keywords: 802.11i, quantum cryptography, network security.

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| | **Authors:** | **B.Kavipriya, S.Dhivya, J.Sivasankari, S,Sheik Farith, A.Jasmine** | |
| | **Paper Title:** | **Effective Anonymous Approach for Implementing RFID Reciprocated Endorsement Protocol** | |

Abstract: Radio-frequency identification (RFID) is a wireless technology that utilizes radio communication to identify objects with a unique electrical identity. The widespread deployment of RFID technologies may generate new threats to security and user privacy. One of the main drawbacks of RFID technology is the weak authentication systems between a reader and a tag. In general, "weak" authentication systems that either leak the password directly over the network or leak sufficient information while performing authentication allow intruders to deduce or guess the password. In this paper, we study the RFID tag–reader mutual authentication scheme using protocol. A hardware implementation of the mutual authentication protocol for the RFID system is proposed.The proposed system was simulated using Modelsim XE II and synthesized using libero synthesis technology. The system hasbeen successfully implemented in hardware using prosaic nano chip using a FPGA.

Keywords: Field-programmable gate array (FPGA) implementation, mutual authentication, radio-frequency identification(RFID)

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	Authors:	**U. Rajyalakshmi, K. Satya Prasad, S.Koteswara Rao**	
3.	**Paper Title:**	**Tissue Processing, Staining And Image Processing Of Pathological Cancer Images: A Review**	
	Abstract: Digital image processing enables synthesis of images for characterisation of properties. Image		**10-15**

segmentation is the most critical functions in image analysis and processing. Fundamentally segmentation results affect all the subsequent processes of image analysis such as object representation and description, feature measurement, and higher level tasks such as object classification.Cancer, at early stage, detection can be possible only with micro image processing. Processing and staining of Cancer tissues for pathological examination through micro images is a difficult task. The study intends to compare the set of image segmentation and edge detection algorithms that can be employed in the image segmentation process.Review of current methodologies of image segmentation using automated algorithms, which are accurate and require little user interaction, is possible especially for pathological medical images. In this paper we project the study of processing, straining and capturing of the pathological images for processing to detect cancer early.

Keywords: Image processing, Pathological Images, edge detection, Image segmentation, Tissue processing, staining, cancer.

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4.	**Authors:**	**Amjad Almusaed, Asaad Almssad**	**16-20**
	Paper Title:	**Natural Lighting Efficiency By Means of Sun- Skylight-Tubes**	

Abstract: The notion of comfort a luminous ambience refers to the distribution of luminance and chromatic ties on the interior envelope of a space that is one of different fields of vision for a subject within an ambience. Luminance and chromatic ties are at present not often studied as far as comfort in buildings is concerned. Sun lighting and bioclimatic concept is inseparable considerations when designing a building because of the historical and practical significance of natural lighting in architecture. Sunlight is as old as architecture itself. Human life gets sufficient sunlight, in fact, we use more of 90 % of our day indoor, for this reason, specialists are now seeing how architecture can ameliorate the indoor-outdoor links. At present, by biological and technological investigation the trend is to search backwards towards the previous philosophies and advantages of more indoor / outdoor relationship. Plus homeowners who want to have healthy home environments might want to renew the most relevant facts of technology and biology.

Keywords: Natural lighting, Sun skylight tubes, Daylight efficiency, Collector Sunlight.

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5.	**Authors:**	**Udary Gnaneshwara Chary, Balabrahmam R, Kuna Sateesh, Aman Kumar**	**21-24**
	Paper Title:	**Design of Low Voltage Low Power CMOS Analog Multiplexer For Bio-Medical Applications**	

Abstract: One of the frequently used IC in bio-medical instruments for multiplexing the various signals is Analog multiplexer. This paper demonstrates the design of low voltage, low power CMOS analog multiplexer, using pass transistor logic for bio-medical application. The design goal is to achieve minimum power dissipation and minimum ON resistance with wide range of low voltage and low frequency of operation. The above goals are met by selection of proper technology parameters and by enhancing the design using minimum number of NMOS Pass transistor. Modified pass transistor logic is proposed, which replaces the traditional pass transistor logic for designing a multiplexer and require less no. of transistors. The ON resistance of 10Ω is achieved and the power dissipation of around 10nW is achieved in this design. Design and analysis is performed using 45 nm CMOS technology in CADENCE IDE.

Keywords: Bio-medical application, Low power, Low voltage, Low frequency, ON resistance, f_{switch}.

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Authors:	Gazala Yusufi, Smita Prava Mishra
Paper Title:	Identification of Valid Clusters for Datasets Whose Number of Clusters are Unknown

Abstract: The true use of clustering is not exploited properly as humans try to cluster datasets whose class labels are already known. In order to make best use of clustering, an attempt has been made in this work to find a mechanism to identify the number of clusters in the datasets whose class labels are unknown. The cluster validity techniques like Dunn's index, Davies-Bouldin index, Silhouette index, C index, Goodman-Kruskal index, etc. have been used to validate the number of clusters generated. These techniques access the clustering tendency and measure the quality of the clusters. These indexing techniques are used in conjunction with clustering algorithms like k-means, k-medoid, etc. to measure the validity of the clusters identified by the said algorithms depending on application specific data. The current work applies the above mentioned techniques to several classified datasets taken as benchmark as well as unclassified datasets so as to find the number of clusters in those datasets. Hence, suggests a better use of clustering.

Keywords: Clustering, Cluster Validity Techniques, Indexing, Internal Cluster Validation, Unclassified Dataset Validation.

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Authors:	K M K Sinha, T.Sharma, D D Haldar
Paper Title:	Reduction of Iron Ore with Non Coking Coal

7.

Abstract: During the past century, many efforts were made to develop processes for producing iron for steel making without the use of coke. This becomes vital where country like India has limited reserve of coking coal. Coke making is extremely problematic from environmental point of view. The reduction of iron ore with non coking coal or gas below the melting point of the iron produced is classified as Direct Reduction process and product referred to as Direct Reduced Iron (DRI) .The iron making reactions in iron oxide plus carbon involve the disappearance of two solid phases (iron oxide and carbon) and formation of two phases (metallic iron and gases).The location of the regions where the production of DRI is concentrated is determined by two factors : the availability of cheap natural gas or non coking coal plus the availability of high quality iron bearing raw material (65% Fe content or more). In the present investigation an attempt has been made to study the direct reduction behaviour of iron ore fines with non-coking coal fines .For this purpose the effect of reduction time ,temperature and Fe_2O_3 : C ratio on degree of reduction has been studied. It is observed that degree of reduction increases with increase in Fe_2O_3 : C ratio, temperature and time. The value of activation energy in the temperature range 1173-1323 K is 203.2 KJ/mole.

Keywords: Degree of reduction, Fe_2O_3 : C ratio ,Activation energy.

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Authors:	Navneet Bhattad, Sudhir Rathod,Viraj Wankhede, Kshitij Gosavi, Amita Meshram
Paper Title:	Accurate Energy-Efficient Localization using Radio Database Compression and Clustering Technique

8.

Abstract: Location based service is a positioning method that exploits the already existing infrastructures such as cellular networks or W-LANs. Increasing Demand for Energy efficient networks, we are proposing a clustering technique for compressing the radio database in Login Systems. The aim of the proposed technique is to reduce the computation cost and transmission load in the mobile-based implementations using Global Positioning System (GPS). The presented method is Block-based Weighted Clustering (BWC) technique, which is applied in a concatenated location-radio signal space, and attributes different weight factors to the location and radio components. The Experimental Architecture will be produced to evaluate the results and the efficiency of the BWC technique. Also, it improves the performance of standard k-means and hierarchical clustering methods.

Keywords: W-LANs, (GPS), (BWC)

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Authors:	**Ojo O. Adedayo, M.M. Isa, A. Che Soh, Z. Abbas**
Paper Title:	**Comparison of Feed Forward Neural Network Training Algorithms for Intelligent Modeling of Dielectric Properties of Oil Palm Fruitlets**

Abstract: Adequate data of the dielectric properties of oil palm fruitlets and the development of appropriate models are central to the quest of quality sensing and characterization in the oil palm industry. In this study, an Artificial Neural Network (ANN) was designed, optimized and deployed to model the dielectric phenomena of microwave interacting with oil palm fruitlets within the frequency range of 2-4GHz. The ANN training data were obtained from Open-ended Coaxial Probe (OCP) microwave measurements and the quasi-static admittance model, the ANN was trained with four different training algorithms: Levenberg Marquardt (LM) algorithm, Gradient Descent with Momentum (GDM) algorithm, Resilient Backpropagation (RP) algorithm and Gradient Descent with Adaptive learning rate (GDA) algorithm. The performance of the ANNs in comparison with measurement data showed that the dielectric properties of the samples under test were accurately modeled, and the LM and RP ANNs can be employed for rapid and accurate determination of the dielectric properties of the oil palm fruitlets.

Keywords: Artificial Neural Network, complex permittivity, dielectric properties, training algorithms.

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Authors:	**N. Udaya Kumar, E. V. Krishna Rao, M. Madhavi Latha, K. Padma Vasavi**
Paper Title:	**An Irregular Shaped Region of Interest Based Intelligent Image Compression Using Direction Adaptive Filter Banks**

Abstract: In order to transmit real time images over band limited channels it is very much essential to consider an intelligent transmission system. An irregular shaped Region of Interest (ROI) based Intelligent Compression using

The page numbers **38-42** and **43-48** appear in the rightmost column for papers 9 and 10 respectively, with **9.** and **10.** as the item numbers in the leftmost column.

Direction Adaptive Filter Banks is presented in this paper. As most of the real time images have irregular boundaries, Direction Adaptive filter banks are used to extract the boundaries of irregular shaped regions. From the edge maps thus obtained, the ROI is extracted by region growing segmentation. The ROI is encoded using a lossless arithmetic encoder and the background is encoded using the most popular SPIHT encoder. At the receiving end, the decoded data from the ROI and the background is added to obtain the final decoded image. The proposed technique is compared against the SPIHT algorithm. The comparisons are made with respect to image fidelity, Peak Signal to Noise Ratio (PSNR) in dB and the bit error rate. The results obtained from the proposed algorithm for image compression are found to be better than SPIHT with respect to qualitative and quantitative analyses.

Keywords: Irregular shape, Region of Interest, Direction Adaptive Filter Bank, SPIHT.

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Authors:	Sudhin Govind, Athulya P Prem, Fuhad Ahamed, Prima Vincent
Paper Title:	Mathematical Modelling and Simulation of Zero- Voltage-Switching Synchronous Buck Converter with a Coupled Inductor

Abstract: the paper presents mathematical modelling and simulation of a synchronous buck converter having soft-switching capability. In order to realize soft switching, based on a basic buck converter, the proposed converter added a small inductor, a diode, and an inductor coupled with the main inductor. The requirements for converters that are more compact, lighter, cost minimization and with an improved performance can be achieved by adopting a high-frequency operation. Because of soft switching, the proposed converter can obtain a high efficiency under heavy load conditions. Moreover, a high efficiency is also achieved under light load conditions, which is significantly different from other soft-switching buck converters. The detailed theoretical analyses of steady-state operation modes are presented, and the detailed modelling methods and some simulation results are also given. The switching waveforms are measured to validate the proposed topology.

Keywords: Synchronous Buck converter, zero-voltage switching (ZVS), small signal modelling and PSIM software.

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	Authors:	Nisar S. Shaikh, S.M. Rajmane	
	Paper Title:	Modelling and Analysis of Suspension System of TATA SUMO by using Composite Material under the Static Load Condition by using FEA	

Abstract: In order to conserve natural resources and economize energy, weight reduction has been the main focus of automobile manufacturer in the present scenario. Weight reduction can be achieved primarily by the introduction of better material, design optimization and better manufacturing processes.

The suspension leaf spring is one of the potential items for weight reduction in automobile as it accounts for ten to twenty percent of the unsprung weight. This helps in achieving the vehicle with improved riding qualities. It is well known that springs, are designed to absorb and store energy and then release it. Hence, the strain energy of the material becomes a major factor in designing the springs. It can be easily observed that material having lower modulus and density will have a greater specific strain energy capacity. The introduction of composite materials was made it possible to reduce the weight of the leaf spring without any reduction on load carrying capacity and stiffness. Since; the composite materials have more elastic strain energy storage capacity (1) and high strength-to-weight ratio as compared to those of steel.

It is seen that from the graph that when load increases the bending stress increases linearly. So load-stress graph gives the straight line relationship. At lower loads both theoretical and ANSYS results are very close, but when load increases the ANSYS results are uniformly reduced compared to theoretical results. The deflection in steel leaf spring is less as compared to the composite leaf spring as shown in the above graphs.

Springs are placed between the road wheels and the body. When the wheel comes across a bump on the road, it rises and deflects the spring, there by storing energy there in. On releasing, due to the elasticity of the spring material, it rebounds there by expending the stored energy. In this way the spring starts vibrating, of course, with amplitude decreasing gradually on account of internal friction of the spring material and friction of the suspension joints, till vibrations die down.

Keywords: leaf spring, FEM, strain energy, strength to weight ratio, etc.

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	Authors:	D. Mondal, S. Basak, R. Bera, M. Mitra	
	Paper Title:	Integrated Hybride DBF Vehicular Radar	

Abstract: This paper addresses the development efforts towards spread spectrum digital beam forming vehicular radar. Lot of limitation for Conventional radar system; to overcome this problem we are using CSWAP technique for the design of fully integrated Hybrid DBF vehicular Radar. So planar array structure based microstrip antenna which is digitally controlled by DSP or FPGA board is the important part of this work. Lot of works carried out by us that is Antenna radiation pattern, element pattern, power pattern, array factor, antenna e-scanning and beam formation, digital beam formation using different combination of elemental patch and side lobe reduction using different windowing techniques is the major part of this work .The car fitted at the front with single 77GHz will take joint decision of LRR as well as SRR [1]. So in the channel lot of polluted signal like interference, clutter noise arises in the receiver portion of this radar to avoid this proper choice of waveform is very important part also of the SSDBF

| **13.** | | | **61-70** |

vehicular Radar at the transmitter side .We have tested different orthogonal codes like Barker, Frank,Gold,P1,P2,P3,Px. and their performance analysis.

Keywords: Cost, Size, Weight and Power (CSWAP), Conventional Digital Beam forming (CDBF) ,Spread Spectrum Digital Beam forming (SSDBF) Electronically Scanned Array (AESA), DAR (Digital Array Radar),AF(Array Factor) ,Minimum Variance Distortion less Response (MVDR) ,linearly Constrained Minimum Variance (LCMV)

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Authors:	**Anchal Katyal, Amanpreet Kaur, Jasmeen Gill**	
Paper Title:	**Automatic Speech Recognition: A Review**	

Abstract: The research, development and the accuracy of automatic speech recognition (ASR) remains one of the most important research challenges over the years e.g. speaker and language variability, vocabulary size and domain, noise. This paper describes the recent progress and the author's perspective of ASR and gives an overview of major technological perspective and appreciation of the fundamental progress of Automatic speech recognition.

Keywords: ASR, HMM, Classifications of ASR, Speech Recognition Process, HNN.

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15.	**Authors:**	**Kiranraj A. Tank, Pradnya P Zode**

	Paper Title:	**Design of a Parallel Pipelined FFT Architecture For Real Valued Signals**	
	Abstract: This paper presents a novel approach to design a four and eight parallel pipelined fast Fourier transform (FFT) architecture based on canonic signed digit multiplier. This approach is based on use of decimation in time algorithm which reduces the number of delay elements up to some extent compared to decimation in frequency based design. The number of delay elements required for an N point FFT architecture is N-4 which is comparable to that of delay feedback schemes. The number of complex adders required is approximately 50% less than the other feedback designs. The proposed architecture can be extended to any radix 2n based FFT algorithm. This proposed architecture is based on feed forward designs and can be pipelined up to more stages to increase the throughput. **Keywords:** Canonic signed digit (CSD), decimation in time (DIT), fast Fourier transform (FFT), folding. **References:** 1. Ziegler, H., "A fast Fourier transform algorithm for symmetric real-valued series," Audio and Electroacoustics, IEEE Transactionson , vol.20, no.5, pp.353,356, Dec 1972 doi: 101109/TAU19721162406 2. Sorensen, H.V.; Jones, D.L.; Heideman, M.; Burrus, C.S., "Real-valued fast Fourier transform algorithms," Acoustics, Speech and Signal Processing, IEEE Transactions on , vol.35, no.6, pp.849,863, Jun 1987. 3. Shousheng He; Torkelson, M., "Design and implementation of a 1024-point pipeline FFT processor," Custom Integrated Circuits Conference, 1998. Proceedings of the IEEE 1998, vol., no., pp.131,134, 11-14 May 1998. 4. B. R. Sekhar and K. M. M. Prabhu "Radix-2 decimation-in-frequency algorithm for the computation of the real-valued FFT", IEEE Trans. Signal Process., vol. 47, no. 4, pp.1181 -1184 1999. 5. Garrido, M.; Parhi, K.K.; Grajal, J., "A Pipelined FFT Architecture for Real-Valued Signals," Circuits and Systems I: Regular Papers, IEEE Transactions on , vol.56, no.12, pp.2634,2643, Dec. 2009.	**75-77**
16.	Authors:	**Manira Khatun**	
	Paper Title:	**VLSI Implementation of Fuzzy Logic Circuit**	
	Abstract: The paper proposes the VLSI realization of a Fuzzy logic circuit. In this paper, a current-input, current-output reconfigurable MIN-MAX circuit is developed using PSPICE for application in fuzzy temperature controller. **Keywords:** Bounded difference operation, CMOS MIN circuit, CMOS MAX circuit, Current mirror, Fuzzy Logic, RFMC. **References:** 1. Neural network fuzzy logic and genetic algorithm Rajasekhran, G.A/VijayalakshmiPai 2. M. Togai & H. Watanabe, A VLSI Implementation of Fuzzy Inference Engine: toward an Expert System on a Chip, Information Sciences, Vol.38, pp.147-163, 1986 3. Büh94] H. Bühler, Réglage par logique floue, Presses Polytechniques Romandes, Lausanne, 1994 4. A.P. Ungering, K. Thuener & K. Goser, Architecture of a PDM VLSI Fuzzy Logic Controller with Pipelining and Optimized Chip Area, IEEE Int. Conf. on Fuzzy Systems, Vol.1, pp.447-452, San Francisco, Ca, USA, 1993 5. T. Yamakawa, A Fuzzy Inference Engine in Nonlinear Analog Mode and Its Application to a Fuzzy Logic Control, IEEE Trans. on Neural Networks, Vol.4, No.3, May 1993	**78-83**
17.	Authors:	**Bishal Poudel**	
	Paper Title:	**BER Analysis of an Optical Cross-Connect Due to Cross-talk in DWDM System**	
	Abstract: This paper focus on analysing the Bit Error Rate of an optical cross connect due to cross-talk in Dense Wave Length Division Multiplexing system. **Keywords:** Bit Error Rate, Dense wavelength division multiplexing (DWDM), Optical Cross-Connect(OXC), Wave length division multiplexing(WDM). **References:** 1. Boby Barna, Monirnl Islam, "Evaluate The Effect Of Stimulated Raman Scattering In Dwdm Transmission System With Direct Detection Binary Wsk Receiver" Iee/Osa/Iapr International Conference On Infomatics, Electronics & Vision Iciev 2012 2. Mizrahi et al., "The future of WDM systems," in Proc. ECOC 1997,1997, pp. 137- 141 3. Gurmeet Kaur, M. L. Singh and M. S, Patterh "Theoretical investigations of the combined effect of fiber nonlinearities,amplifier and receiver noise in a DWDM transmission" Journal of Optical and Fiber Communications Research Volume 6, Numbers 1-6, pp-I-I 0, 2007. 4. K, A Taher, "Minimization of the effect of Cross PhaseModulation in a WDM Optical Transmission System",M,Sc,Thesis, dept. of EEE, BUET, 2005. 5. E. Iannone, and R. Sabella, "Optical path technologies: Acomparison among different cross-connect architectures,J.Lightwave Technol., vol. 14, no. 10, pp. 2184 - 2194, Oct. 1996 6. J. Zhou, et al., "Crosstalk in multi wavelength optical cross-connect networks," J. Lightwave Technol., vol. 14, no. 6, pp.1423 - 1435, June 1996	**84-86**
18.	Authors:	**C.Kadhiravan, P.Mahendra Peruman**	
	Paper Title:	**High Efficiency AC–AC Power Electronic Converter Applied To Domestic Induction Heating**	
	Abstract: Induction heating is a well-known technique to produce very high temperature for applications. A large number of topologies have been developed in this area such as voltage and current source inverter. This project presents the analysis and design of a new ac–ac resonant converter applied to domestic induction heating. The proposed topology, based on the half-bridge series resonant inverter, uses only two diodes to rectify the mains voltage.The proposed converter can operate with zero-voltage switching during both switches-on and switch-off transitions. This topology doubles the output voltage, and therefore, the current in the load is reduced for the same output power. As a consequence, the converter efficiency is significantly improved.The output power is controlled using the PWM technique. This results in an increase of the net efficiency of the induction heating system. The circuit is simulated using MATLAB. The circuit is implemented using PIC controller. Both simulation and hardware	**87-90**

results are compared.

Keywords: Home appliances,induction heating, inverters, resonant power conversion

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Authors:	**Ashish Gupta**	
Paper Title:	**Improvised Temperature Sensing In Efficient Dynamic Devices**	

Abstract: The document here describes the method of accurate and efficient temperature sensing using multiple thermistors and then it suggests the method to mathematically analyze these incoming data and getting the final accurate result. This method of temperature sensing would prove to be very useful at instances where the temperature probes cannot remain intact with the subject at all times, moreover it also addresses issues of probe detachment and error handling.

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Keywords: Probe detachment, thermistors, temperature.

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Authors:	**Khollam.S.C, Mhaske M S, Belkar S B**	
Paper Title:	**A Method to Optimize Brass Type Single Synchronizer Ring for Manual Gearbox**	

Abstract: Global automotive industry is growing rapidly in recent years. Increased torque range with deeper transmission ratio as well as overall vehicle refinements in modern trucks places higher demands on transmission and its components. Changing market requirement and driver comfort is also a new challenge in commercial market. With this overall effects design and development of transmission and its components plays a major role for performance, comfort and economically driven market.

Synchronizer is one of the critical components which need to look upon. Synchronizer plays a vital role for gear shifting performance in manual gearbox without any shifting assistance. Synchronizers primary function is to reduce the rpm difference between two gears before gear shifting subject to time and more comfort. Increasing demand for performance, enhance life, less shift effort, less synchronization time, optimum size of Synchro pack and low cost has become an interesting area for engineer for improvement. More over existing synchronizer can be economically re-engineered into more efficient designs with the help of new mathematical tools and techniques.

A mathematical optimization model can be developed to establish optimum cone parameter. A model of relationship can built between cone angle and sleeve champers angle, synchronizer size, coefficient of friction, cone torque and index torque. In this study a model was built in Matlab optimization toolbox pattern-search solver to find global minimum value of Cone angle which satisfy set of given and known design constrains. This Model can be used to select first cut synchro parameter with moderate accuracy. These Values can be then finer tune by customized and specialized software's.

It is not easy to study the entire gear-changing process from clutch till wheels, dynamical behavior of manual gearbox is too complicated to simulate, owing to the large number of elements involved in it. This study considers only major parameter involved in synchronization. Also generous experience and data is required to accurately select parameter with desired Shift feel and comfort.

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Keywords: Synchronizer, Matlab, Blocker ring, optimization Gearbox.

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| | 7. | Daniel Angstrom and Mikael Nordlander: Development of a Program for Calculating Gearbox Synchronization, Master of Science in Engineering Technology Mechanical Engineering, Luleå University of Technology Department of Engineering Sciences and Mathematics | |
| | 8. | David Kelly Christopher Kent, Gear Shift Quality Improvement in Manual Transmissions Using Dynamic Modeling | |

| **Authors:** | **Firas Shawkat Hamid , Thakwan Akram Jawad, Ersun Iscioglu** |

| **Paper Title:** | **Study and Analysis New Algorithm for Effective Cryptographic in Telemedicine Purposes Using Hill Cipher after Modification** |

Abstract: Nowadays, digital exchanges of medical images are frequently used throughout the world in a fraction of a second via the Internet. These data can be read or modified during their transmission via a non-controlled channel. Therefore, it becomes very important to protect this private information against unauthorized viewers by using cryptography. This work presents a cryptography method that uses the properties of Hill Cipher algorithm for medical images.

The fast evolution of digital data exchange, security information becomes much important in data storage and transmission. Image, which covers the highest percentage of the multimedia data, its protection is very important. This can be achieved by image encryption. As the use of digital techniques for transmitting and storing image are increasing, it becomes an important issue that how to protect the confidentiality, integrity, and authenticity of image. Each type of data has its own features; therefore various techniques which are discovered from time to time to encrypt the images should be used to protect confidential image data from unauthorized access and to make images more secure. Image encryption techniques scrambled the pixels of the image and decrease the correlation among the pixels, so that we will get lower correlation among the pixel and get the encrypted image. Encryption is used to securely transmit data in open networks. The Hill cipher algorithm is one of the symmetric key algorithms that have several advantages in data encryption. However, a main drawback of this algorithm is that it encrypts identical plaintext blocks to identical ciphertext blocks and cannot encrypt images that contain large areas of a single color. Thus, it does not hide all features of the image, which reveals patterns in the plaintext. Moreover, it can be easily broken with a known plaintext attack revealing weak security. This paper presents a variant of the Hill cipher that overcomes these disadvantages, has been proposed new encryption algorithm using modify the existing Hill cipher to decrease the susceptibility to known plaintext attacks. This is achieved by randomizing the information locations for the whole image. So, even if the attacker can guess the key, the decryption still give false information. Both of Hill image cipher and the proposed modification on it (termed MHill in this paper) are suitable for all images block encryption. The proposed algorithm is carried out via two approaches that is through comparative study and statistical analysis. Results from this comparative have shown that Hill cipher with randomized approach has greatest the Number of Pixels Changed Rate (NPCR) and the Unified Averaged Changed Intensity (UACI) value are two most common

Keywords: The proposed algorithm is carried out via two approaches that is through comparative study and statistical analysis.

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Authors:	**Sriramula Poornima, Lendale Praveen Kumar**	
Paper Title:	**Power Delay Profile Estimation for MIMO-OFDM Systems under LMMSE Channel Estimation Approach**	

Abstract: A multiple-input multiple-output (MIMO) communication system combined with the orthogonal frequency division multiplexing (OFDM) modulation technique can achieve reliable high data rate transmission over broadband wireless channels. But the performance gain depends heavily on accurate channel estimation. In linear-minimum-mean-Square-error(LMMSE) channel estimation for multicarrier system, one needs to know the channel statistics. We propose a power delay profile (PDP) estimation technique to obtain the frequency domain channel statistics at the receiver. The pilot symbols of all transmit antenna ports are used in estimating the PDP. The estimated PDP is used to generate the LMMSE filter Coefficients for data-subcarrier channel estimation. The distortions caused by null subcarriers and an insufficient number of samples for PDP estimation are also considered. The proposed technique effectively reduces the distortions for accurate PDP estimation. Simulation results show that the performance of LMMSE channel estimation using the proposed PDP estimate approaches that of Wiener filtering due to the mitigation of distortion effects.

Keywords: Channel estimation, PDP, MIMO, OFDM, LMMSE, 3GPP-LTE.

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Authors:	**Chhatrala Nayankumar D. Bhalodiya Kelvin J. Doshi Kaushal J.**	
Paper Title:	**Improved Disparity Map Estimation from Multiple Images on Hybrid Method**	

Abstract: Stereo vision systems aim at reconstructing 3D scenes by matching two or more images taken from slightly different viewpoints. The main problem that has to be solved is the identification of corresponding pixels, i.e.

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pixels that represent the same point in the scene.

In this paper, a stereo matching algorithm based on image segmentation is presented. We propose the hybrid algorithm based on k-means segmentation and refine the disparity map of the stereo image by SSD (sum of squared difference). Firstly; a color based k-means segmentation method is applied for segmenting the stereo images. Segmentation is used to represent, locate and analyze the image. Segmented images are used as input to the local correlation based method for finding the disparity estimation .Experimental results show that our proposed algorithm gives good performance

Keywords: Stereo Matching, Disparity Map, RMSE Error, Segmentation, k-means

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Authors:	**Anu Joseph Padanilam, R. Meenal**		
Paper Title:	**Simulation of Single Stage Inverter with High Voltage Gain for Distributed Energy Resources Using PSIM**		

24.

Abstract: This paper presents the simulation of high voltage gain single stage inverter for distributed energy resources using PSIM software. In this, a Cuk derived circuit is integrated with Fly back auxiliary circuit to achieve high voltage gain. Here the capacitors of Flyback and Cuk circuits are paralleled for charging and connected in series for discharging. Due to capacitive voltage dividing, DC side switch voltage stress is reduced and losses are also reduced, hence gain can be increased. Simulation results are given to show the merits of the inverter.

Keywords: Distributed energy resources (DER), Cuk derived voltage source inverter, Flyback auxiliary circuit, high voltage gain, PSIM

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Authors:	**R.Saranya Pon Selvi, C.Akila**		
Paper Title:	**Advanced FCM Algorithm for Segmentation**		

25.

Abstract: An advanced FCM Algorithm is introduced to segment the image which is affected by noise, outliers or any other artifacts. In order to segment those images this algorithm is introduced. By using this algorithm both noise can be removed and the segmentation can be made efficiently. The trade-off weighted fuzzy factor and kernel distance measure are both used in the introduced algorithm and both are parameters free. By using the fuzzy factor, the damping extent of the neighbouring pixels can be estimated accurately. The experimental results also show that the algorithm is effective and efficient and it is independent of the type of the noises.

Keywords: Fuzzy clustering, gray-level constraint, image segmentation, kernel metric, spatial constraint.

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Authors:	**Reena Chandran, Vrinda Prasad, Prima Vincent**	
Paper Title:	**Modeling of Fractional order Buck-Boost Converter**	

Abstract: In this paper fractional order mathematical modeling and state space average modeling of Buck-Boost Converter is established in continuous conduction mode. This modeling is based on fractional calculus and an idea about the fractional calculus is describing here. To observe the performance of Buck-Boost converter in the fractional order modeling, simulation is done using MATLAB/SIMULINK.

Keywords: Buck-Boost converter, Fractional order, mathematical model, Sate space average modeling

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Authors:	**Athira P Ashok, Bincy M Mathew, Jiku Thomas**	
Paper Title:	**Stability Analysis and Limit Cycle Behavior in DC-DC Boost Converter**	

Abstract: This paper deals with stability analysis and limit cycle behaviors in DC–DC boost converters with a proportional integral (PI) voltage compensator, which is a popular design solution for increasing output voltage in power electronics. The circuit principle is explained with the help of state space averaging. The transfer function of the system is found by the small signal ac modeling of boost converter. The stability of the converter is found by Routh Stability Criterion. The limit cycle behavior is given by the stability analysis.

Keywords: Stability, Limit cycle behavior, Boost converter.

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Authors:	**Tushar Bedke, Dhanashree Kutre**
Paper Title:	**Data Reliance Surveillance**

Abstract: Network Security and Data protection is a very important approach in which the users should be encouraged to turn on the module in order to practically make use of trusted computing against well known data security problems. The best way to deal with such problems is to use this technology that has been found to provide very real benefits in terms of assuring trust between systems and effectively protecting, through hardware based encryption, critical information .Moreover the results should necessary satisfy the requirements of the users in respect of access rights, privacy and interoperability. This paper outlines a client-server system utilizing a Data Reliance Surveillance Module (DRS)-enabled computer to hinder forensic examination. We have explored in detail the entire process from the encryption to the reverse process decryption on different file formats mainly image, audio and text files. We describe and implement an approach on data protection and network security by utilizing trusted computing technology. The system allows for data confidentiality, plausible deniability, and hiding of traces that incriminating data was present on the client.

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Keywords: This paper outlines a client-server system utilizing a Data Reliance Surveillance Module (DRS)-enabled computer to hinder forensic examination.

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Authors:	**Kashyap M. Joshi, Vipul Gohil**
Paper Title:	**Controller Area Network Based Accident Avoidance System**

Abstract: Based on requirements of modern vehicle, in- vehicle Controller Area Network (CAN) architecture has been implemented. In order to reduce point to point wiring harness in vehicle automation, CAN is suggested as a means for data communication within the vehicle environment. The benefits of CAN bus based network over traditional point to point schemes will offer increased flexibility and expandability for future technology insertions. This paper describes system which uses sensors to measure various parameters of the car like speed, distance from the other car, presence of alcohol in car and accidental change of lane and sends a warning signal to the driver if any of the parameter goes out of range to avoid accidents . A situation that provides a good example of how the system works is when a driver is about to change lanes, and there is a car in his blind spot. The sensors will detect that car and inform the driver before he starts turning, preventing him from potentially getting into a serious accident.

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Keywords: Control Area Network (CAN), collision avoidance system

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Authors:	**Mohsen Zolfaghari Moghadam, A.R.Teymourtash**
Paper Title:	**Optimal Homotopy Asymptotic Method to MHD Flow of a Viscoelastic Fluid Aver a Stretching Sheet**

Abstract: In this study, the problem of steady two-dimensional magnetohydrodynamic (MHD) flow of a viscoelastic fluid near a stretching sheet in has been investigated using a simulation method called Optimal Homotopy Asymptotic Method (OHAM). The concept of OHAM is briefly introduced, and then employed it to derive solutions of governing nonlinear equation. The obtained results from this method are compared with those from the numerical solution to verify the accuracy of the proposed method. It is found that the OHAM can achieve suitable results in predicting the solution of such problems. Moreover, the effect of important parameters on temperature distribution, mass transfer as well as stream function along the stretching sheet are presented and discussed in detail.

Keywords: MHD flow; viscoelastic fluid; stretching sheet; Optimal Homotopy Asymptotic Method.

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Authors:	Abu Bakar Muzamil, Bilal Khurshid
Paper Title:	Analysis of Labour Productivity of Road Construction in Pakistan

Abstract: Construction industry is one of the most labour incentive industries and human resource covers a large project cost. Labour productivity has always been a key issue for project managers to improve their project results. Now productivity studies are getting special emphasize in developing countries after developed countries. Construction industry is basically composed of building and infrastructure projects. Usually productivity studies are focussed towards overall construction industry or mostly building projects. It's obvious that the impact of factors varies with type of construction and other different aspects of project. This study is specifically carried out to identify the critical factors which are responsible for poor labour productivity of road construction in Pakistan. The study was carried out through questionnaire based survey. Questionnaire was composed of 65 productivity factors they were grouped in 13 categories. Respondents were categorized in 2 groups i.e., management workers and manual workers. Respondents were asked to rank the factors based on their experience of road construction. The number of responses achieved were 212 and results were tabulated based on relative importance index. Top three identified critical factors affecting labour productivity of road construction in Pakistan are poor salary, poor execution planning and inefficient equipment. The researchers and project managers can get assistance from the study to establish reforms for achieving better labour productivity.

Keywords: Critical Factor, Productivity

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Authors:	Khaled Zaher Abdalla, Sarah Mohamed Sharaf
Paper Title:	Cost Optimization of Sewerage Systems in Rural Areas in Egypt

Abstract: Collection of wastewater is considered one of the major environmental problems in Egypt. More than 50% of Egypt villages have no facilities of wastewater collection. Small bore sewer system is a good alternative for wastewater collection system especially in rural areas because the construction cost of small bore sewer system is cheaper than that of conventional sewer system. However, detailed analysis is required to determine the optimum conditions at which small bore sewer system will be a better choice. This paper aims to provide an estimation of total costs for both small bore sewer systems and conventional sewer systems using data of eight different villages in rural areas in Egypt. The villages were chosen in Menofyia and Assuit governorates. Two equations were obtained that can be used to obtain the total costs of both small bore sewer systems and conventional sewer systems for rural areas of similar characteristics to those studied. The optimum population values, at which the small bore sewer system will be the best alternative, were obtained.

Keywords: Collection systems; Conventional sewer system; Cost; Rural areas; Small bore sewer system

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Authors:	**Patel Vibha, Hardik B.Ramani**	
Paper Title:	**Review on Combine Effect of Exhaust Gas Recirculation (EGR) and Inlet Air Pressure on Performance and Emission of Diesel Engine**	

33.

Abstract: Concern of environmental pollution and energy crisis all over the world have caused the research attention on reduction of diesel engine exhaust emissions and saving of energy simultaneously. Better fuel economy and higher power with lower maintenance cost has increased the popularity of diesel engine vehicles. Diesel engines are used for bulk movement of goods, powering stationary/mobile equipment, and to generate electricity more economically than any other device in this size range. As we know that the diesel engine are known for their high NOx formation and Exhaust Gas Recirculation (EGR) is being used widely to reduce and control the oxides of nitrogen (NOx) emission from diesel engines. EGR controls the NOx because it lowers oxygen concentration and flame temperature of the working fluid in the combustion chamber.However, the use of EGR leads to a trade-off in terms of soot emissions moreover it exhausted more unburned hydrocarbons (20–30%) compared to conventional engines and it also affect the volumetric efficiency and BSFC of engine performance. The increased in inlet air pressure results in better scavenging and reduced exhaust temperature in the engine, better mechanical efficiency and improved volumetric efficiency. Therefore, by using EGR with pressurized inlet air have different effect on both engine emission such as CO, UHC and NOx and on the engine performance such as BSFC, torque, thermal and volumetric efficiency.

Keywords: Exhaust gas recirculation, Diesel engine, Inlet air pressure, Emission.

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18. Jaffar Hussain , K. Palaniradja, N. Alagumurthi, R. Manimaran, Effect of Exhaust Gas Recirculation (EGR) on Performance and Emission characteristics of a Three Cylinder Direct Injection Compression Ignition Engine

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Authors:	**Anuradha Kasande, A.A. Agarkar**	
Paper Title:	**An Enhancement in Quality of image & Anti- Steganalysis by Using Optimizing Image Steganography**	

34.

Abstract: Picture quality and statistical undetectability are two main issues related to steganography techniques. In this paper, a closed-loop computing framework is proposed that iteratively searches proper modifications of pixels/coefficients to enhance a base steganographic scheme with optimized picture quality and higher anti-steganalysis capability. To achieve this goal, an anti-steganalysis tester and an embedding controller based on the optimization algorithm with a cost function are incorporated into the processing loop to conduct the convergence of searches. The cost function integrates several performance indices, namely, the mean square error, the human visual system (HVS) deviation, and the differences in statistical features, and guides a proper direction during optimization.

Keywords: steganalysis, steganography, optimization

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2. A Framework of Enhancing Image Steganography With Picture Quality Optimization and Anti-Steganalysis Based on Simulated Annealing Algorithm Guo-Shiang Lin, Yi-Ting Chang, and Wen-Nung Lie.
3. Quantization-Based Image Steganography without Data Hiding Position Memorization Yusuke SEKI∗, Hiroyuki KOBAYASHI†, Masaaki FUJIYOSHI∗ and Hitoshi KIYA Department of Electrical Engineering, Tokyo Metropolitan University, Hachioji-shi, Tokyo 192–0397, Japan

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11. Blind Image Steganalysis Based on Statistical Analysis of Empirical Matrix Xiaochuan Chen1, Yunhong Wang2, Tieniu Tan1, Lei Guo11 National Laboratory of Pattern Recognition, Institute of Automation, Chinese Academy of Sciences
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16. Steganographic Techniques of Data Hiding using Digital Images Babloo Saha and Shuchi Sharma Institute for Systems Studies and Analyses, Delhi – 110 054, India
17. Mean Squared Error: Love It or Leave It? By Zhou Wang and Alan C. Bovik

Authors:	**Ravi Kumar, Santosh G. Taji, GVS Sastry**	
Paper Title:	**Deployment of Scroll Compressor in an Air Conditioning System of an SUV**	

35.

Abstract: Most current Sports Utility Vehicles in India use fixed or variable displacement type piston compressors in air conditioning system which consumes a lot of power from engine. The AC compressor is the highest consumer of engine power among all the air conditioning system components. It is evident that any effort of reducing power consumption will not have fruitful result without reducing compressor power consumption. The conventional piston compressors are not only higher in weight, its volumetric efficiency is less too.

The objective of this work is to derive analytical methodology to select a suitable Scroll Compressor without having any compromise on cooling performance of the vehicle and to articulate benefits by giving objective values for weight reduction, parasitic load reduction and above all fuel economy improvement of the vehicle. In cognizance of the Scroll technology, in the current work piston compressor has been replaced with an energy efficient Scroll compressor of an existing SUV vehicle to achieve weight reduction of 2 Kg, power consumption reduction up to 0.4 Kwatt which has resulted in fuel economy improvement by 0.5 Kmpl. Unlike previous works done on this topic the compressor selection procedure can be applied to all kinds of passenger vehicle to achieve similar objectives.

Keywords: Climate Control, Scroll Compressor, Piston Compressor.

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Authors:	**Palagati Harish, K.Priya**	
Paper Title:	**Survey on Intruder Detection from Surveillance Videos**	

36.

Abstract: Surveillance cameras are the main source to detect malpractices, thefts, intruders in our daily life. These cameras records large volumes of data in video format. The data recorded by surveillance cameras are just stored and they are not processed. Several methods are introduced to track and extract the features from these videos to detect intruder. But, the detection will mismatch in crowded areas. Detection of human activity is complex in such areas. Semantic Content Mining (SCM) is proposed to extract the semantic content like objects and events from the video. This method is useful for the detection of human activity and his behavior. Construction of ontology provides spatial and temporal relations between different video frames. This provides the events or actions performed by intruders.

Keywords: Semantic content; Ontology; Human activity recognition; Spatial and Temporal Relations

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Authors:	**Shyam K. Dabhi, Nilesh J. Parekh, Bindiya A. Parikh**	
Paper Title:	**CFD Simulation and Analysis of Lubricating Oil for 4-Speed Automobile Gearbox**	

37.

Abstract: Gear box performance is dependent on viscosity of lubricant oil and due to the thermal effect of heat generated in side of an oil span of gear box. Thus if we change properties of an oil, the performance of gear box does change. The effect on gear box performance will be studied by CFD Analysis. The equations of fluid mechanics which have been known for over a century are solvable only for a limited no. of flows. The known solutions are extremely useful in understanding fluid flow but rarely used directly in engineering analysis or design. CFD makes it possible to evaluate velocity, pressure, temperature, and species concentration of fluid flow throughout a solution domain, allowing the design to be optimized prior to the prototype phase.

Keywords: Modelling, Ansys, HG(high grade oil), CO(Commercial oil).

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179-181

Authors:	**P.K Sharma, Nilesh J. Parekh, Darshit Nayak**	
Paper Title:	**Optimization and Stress Analysis of Chassis in TATA Turbo Truck SE1613**	

38.

Abstract: Truck chassis forms the structural backbone of a commercial vehicle. The main function of the truck chassis is to support the components and load that mounted on it. The chassis is experienced a stress whether when it is moving or in a static condition. This thesis presents an analysis of the static stress that acting on the upper surface of the truck chassis. These projects study the distributions of the stress that acting on the chassis. Critical parts that will lead to failure are also observed. The method used in this numerical analysis is finite element analysis (FEA). Finite element analysis helps in accelerating design and development process by minimizing number of physical tests, thereby reducing the cost and time for analysis. 3-D model of the truck chassis is made using ProE before analyzed. Modal updating of truck chassis model is prepared adjusting the selective properties such as mass density and Poisson's ratio. Numerical results showed that critical part was at the mounting bracket of the tire and also at the front part of the chassis.

Keywords: Modelling, ansys, chassis, frame work.

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3. "STRUCTURAL DURABILITY OF FORGED AUTOMOTIVE ALUMINIUM CHASSIS COMPONENTS SUBMITTED TO SPECTRUM LOADING AND SALT-CORROSION BY THEEXAMPLE OF A TENSION STRUT" N. Hägele a, c.m. Sonsino ba*
4. "USE OF FINITE ELEMENT TECHNIQUE FOR THE ANALYSIS OF COMPOSITE STRUCTURES" R. Ali University of Technology, Loughborough, Leicestershire LEII 3TU, U.K.
5. "STRESS ANALYSIS OF TRACTOR TRAILER CHASSIS FOR SELF WEIGHT REDUCTION" N.K.Ingole N.K.Ingole et al. / International Journal of Engineering Science and Technology (IJEST)
6. Pro-E Software
7. Ansys 12.V.1.1

182-187

Authors:	**Rency Roy, Priyanka K, Soumya Sunny**	
Paper Title:	**Modelling of Capacitively Smoothed Dual-Output Resonant Converter**	

39.

Abstract: Modelling of dual-output dc-dc resonant power converter is analysed in this paper. Application of the technique, and the benefits afforded by the modelling methodologies, are demonstrated through the analysis of a capacitively smoothed dual-output converter.

Keywords: DC power supply, dual-output, resonant converter, state- space modelling.

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Authors:	**Chinnu P Ravi, J Jency Joseph**	
Paper Title:	**A Novel High Performance Flyback CCM Inverter Scheme for AC Module Application**	

Abstract: In a Grid Connected Photo-voltaic System maximum power is to be drawn from the PV array and has to be given to the Grid using suitable maximum power point tracking algorithms, converter topologies and control algorithms. Usually converter topologies such as buck, boost, buck-boost, sepic, flyback, push pull etc are used. In Flyback converter the source and load side are separated via a capacitor thus energy transfer from the source side to load side occurs through this capacitor which leads to less current ripples at the load side. Thus in this paper, a Simulink model PV panel with Flyback converter is being designed, simulated and for tracking the maximum power point the most common and accurate method called incremental conductance algorithm is used and the inverter control is done.

Keywords: Photovoltaic, Flyback Converter, Maximum power point tracking, Incremental conductance algorithm.

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40. | **193-197**

Authors:	**Deo Raj Tiwari, Gopal P. Sinha**	
Paper Title:	**Performance and Emission Study of LPG Diesel Dual Fuel Engine**	

Abstract: This paper presents observations, results and their analysis with respect to the experiments conduced on fuel mix used in a set up on CI engine. LPG air mixes have been used in the air intake manifold at different concentration level while the diesel injection through injector at the end of compression stroke has remained undisturbed at the original level. The experiments were conducted at different loads. The objective of the study has been to minimize the pollutant emission. Observations were also taken for the impact on thermal effiencey and the power developed. Results have shown an all round favourable impact of LPG injection.Further; prospects of optimisation have been indicated on which the experiments have been initiated. The results, analyses and recommendation will be reported in our next paper.

Keywords: LPG, Performance, Emission, Combustion, Pollution

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41. | **198-203**

Authors:	**R. Vaira Vignesh, G. Gnana Kumar**	
Paper Title:	**Synthesis of Hybrid Black Toner from Waste Toner Using Nano Technology – Optimization Technique**	

42.

Abstract: The toner is used in photocopiers to form the latent electrical image on the drum. The paper picks up the

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toner particles (image), when it slides over the drum. Approximately 10% of toner particles are left over the drum due to specific factors. This left out toner is cleaned by the unit to ensure the copy quality of the proceeding copies. This left out toner is called as waste toner and is collected in cleaner sump. If this waste toner is used in the photocopiers, the quality of the copier is reduced. The waste toner is mixed in proportion with Carbon Black Nano powder and original toner to get Hybrid Carbon Black Toner. The original toner is the toner prescribed for the photocopier by the manufacturer. By implementation of this technique, the cost of photocopy can be reduced and the quality of the photocopy can be increased.

Keywords: Original toner, Waste toner, Carbon Black Nano powder, Hybrid Black Toner

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Authors:	**Haris P. A, Sen Jose**	
Paper Title:	**Implementation of Selected Mapping and Clipping for PAPR Reduction in OFDM Communication Systems**	

Abstract: In the recent times, Orthogonal Frequency Division Multiplexing (OFDM) has been under intense research for broadband wireless transmission due to its robustness against multi-path fading. In this paper, a joint selected mapping and clipping method is proposed to reduce the peak-to-average ratio of OFDM signal. Here cyclically shifted mapping data is used to generate a set of data blocks which represent the original information. This will increase the data rate when compared with the conventional SLM technique. Then clipping operation has done to reduce the PAPR further. Simulation results show that the proposed scheme may obtain significant PAPR reduction while maintaining good performance in the BER compared to other methods.

Keywords: (OFDM), SLM, PAPR, BER.

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Authors:	**Negin Keshavarznia**	
Paper Title:	**Physical Impacts of Second Home Development on Damash Village in Gilan Province, Iran**	

44.

218-221

Abstract: One of the most important issues which have received particular attention from geographers is examining the effects of spending times on taking vacation and tourism. This issue has led to development of second homes in rural and urban areas. Emphasizing the physical effects of second home expansion, this research is aimed at studying the impact of such holiday homes on rural areas of Damash Village in Gilan Province, Iran. Present applied study was conducted based on descriptive- analytical methodology; also, the required data were gathered through two questionnaires, one designed for rural people (170 families) and the other for nonnative owners of second homes (60 families). The findings showed that second home development had by far much more negative impacts on rural communities were than the positive ones.

Keywords: physical Impact, Second home, Damash, Gilan,

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Authors:	A. El Abbassi, A. El Amrani
Paper Title:	**Conceptualization and Simulation of an Error Detection and Correction Code for Baseband Data Transmission**

Abstract: The purpose of channel coding is to protect emitted information against perturbations (noise) in the transmission channel, which may alter the contents of the information. This consists of adding redundancies to the signal in order to detect and eventually correct reception errors. In this study, we present a detection and correction code dedicated to baseband transmission. Along this line, we implant a code in a microcontroller circuit both at the emission and reception ends. A coded message is then sent via a simulated chain of transmission and received with an accumulated error. The error is detected and automatically corrected.

Keywords: Channel code, redundancy, microcontroller.

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Authors:	Osama Z. El-Abdien, Yassien M. Temerk, Ibrahim D. Abdullah, Sherif T. Amin
Paper Title:	**Design and Evaluation of a Full Control Program for Sucrose Crystallization Based on Soft Sensor Approach**

Abstract: The well-controlled sugar crystallization process is a success key for all sugar production industries to achieve maximum production rate and minimum cost so this work aims to crystallization control improvement.Solubility and supersaturation coefficient curves of pure sucrose and technical sugar solution achieved using sugar solubility values of both Vavrinecz and Bubnik through this the feed control parameters (e.g. seed brix, end boiling brix) concluded by mathematical formulas. Setting up an integrated controlling program with using other formulas that control liquor feed and crystallization rates based on the required sugar quality and batch time. Another mathematical model for online calculation of crystal content, supersaturation, crystal size, mother liquor purity, and evaporation rate incorporated. The main advantages are the auto scientific selection of all crystallization parameters needed for controlling feed rate based on safe limits of supersaturation and achievement the required batch time and sugar quality. Further it monitors all strike's parameters e.g. sugar and massecuite quantity, level, brix and purity, syrup brix and purity, supersaturation, crystal content, crystal size, evaporated water quantity,…etc. followed by correction any deviation in the superstauration or crystallization rat. Overview of crystallization theoretically done by the program for both refined and recovery sugars at the United Sugar's refinery and the findings from simulation were presented and next stage is the practical implementation.

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Keywords: Crystallization control, crystallization parameters, online monitoring of crystallization parameters, soft sensor approach, supersaturation control.

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Authors:	**J. Lydia Jeba, R. Nandhini**	
Paper Title:	**A Novel Approach Of MPAC Model For Online Social Network**	

47.

Abstract: Online Social Networks (OSNs) have increased and become a concerning fact for billions of internet users like Facebook, Twitter, My space, etc. In OSNs the shared data are restricted by the user and currently for the multiple users they do not provide any mechanism. To overcome this issue we propose a model for the multiple users of shared data in OSNs. For multiparty authorization, policy specification scheme and policy enforcement mechanism we formulate an access control model to capture the essence of multiparty.

Keywords: Multiparty access control, Authorization, Policy specification and Management.

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Authors:	**Clustering Data Objects Using Collective Fuzzy C-means Algorithm**	
Paper Title:	**A.Nellai Archana, K.Mohana Prasad**	

48.

Abstract: Clustering is a collection of objects which are similar between them and dissimilar to the objects. Three steps to form cluster is to initialize data, select data randomly and use distance metrics to form optimal solution. In

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this paper fuzzy c-means algorithm is proposed. It is a kind of partitional clustering algorithm because it partition the data sets into several subsets. It allows one part of data in which it belong to two or more cluster. Data sets are taken as input value. There are many data sets so randomly select the variables to form the cluster group. It gives more efficient and effective clustering.

Keywords: Clustering, Collective fuzzy c-means, K-harmonic means

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Authors:	**M.Nandhini, K.Mohana Prasad**	
Paper Title:	**An Effective Method for Clustering Using an Algorithm Stimulated By the Decision Making Processes of Bee Swarms**	

Abstract: Cluster is the task of grouping a set of objects into a different cluster. Objects in a cluster are more similar when compared with those object in the other in the cluster in some sense or the other Applications of clustering in biomedical research include gene expression data analysis, genomic sequence analysis, biomedical document mining and MRI image analysis . In data mining, clustering is used for scalability, interpretability and usability, insensitive to order of input records and high dimensionality. In this paper we proposed Correlative Artificial Colony where we consider more relationship between the employ bees and onlookers and extend the exploitation capacity of the ABC algorithm. The result shows that the proposed algorithm reduces computation time, increases the exploitation ability of ABC and produces a good solution in a limited amount of time.

Keywords: artificial bee colony,clustering,correlative artificial bee colony .

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Authors:	**V. Selvan, R. Sundararajan**	
Paper Title:	**Experimental Study of Torsional Reinforcement in R.C. Slab with Four Edges Discontinuous**	

Abstract: The twisting moments can become significant at points along the slab diagonals and the variation of principal moments is along and across a diagonal of simply supported and uniformly loaded square slab of homogeneous material, as obtained from an elastic analysis. If downward reactions cannot be developed at the supports, the corners will be lifted up.
By providing torsion reinforcement, corners are usually prevented from being lifted up. In such cases the corners have to be suitably reinforced at top and also at bottom otherwise cracks are liable to be formed at the corners.
The present investigation is intended to study the influence of torsion reinforcement in reinforced concrete slab with end condition all ends discontinuous under uniformly distributed load. Slabs with torsion reinforcement varying from 20% to 35% were casted and tested. Increasing in the torsion reinforcement controls the deflection of the slab element. As the torsion reinforcement increases the corners are being held down. At the maximum of 35% of main reinforcement was provided as torsion reinforcement corners are not held down completely and there is a considerable decrease in central deflection also.

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Keywords: Torsion reinforcement, central deflection, Slabs.

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51.	**Authors:**	Aaisha Jabeen Siddiqui, Praveen Sen, Aarti Ravindrasingh Thakur, Ashwini L. Gaur, Priyanka Chandrakant Waghmare
	Paper Title:	Use of Improved Rabin Algorithm for Designing Public Key Cryptosystem for Wireless Sensor Networks

Abstract: Wireless Sensor Networks are one of the most popular areas of research now days. These types of networks have observed a wide variety of applications in security areas such as defense, ecological etc. These applications are highly dependent on monitoring sensitive information such as movement of particulars, detecting and tracking of location etc. Providing security in such complications has made Wireless Sensor Networks security a challenge. As sensor nodes are powered by batteries, energy efficiency becomes a critical aspect in such type of networks and because of this many security protocols proposed earlier for Wireless Sensor Networks are proved out to be expensive. In this paper, we have focused on a security protocol which provides a strong level security and also uses the battery of the sensor nodes efficiently. The proposed work is tested on confidentiality and integrity of data and authenticity in communication. This system tracks the location of sensor nodes and the location of the nodes will become the input for key generation phase. The communication between the server and the sensor will take place by encrypting the location address of the respected sensor.

Keywords: Security in WSN, Rabin public key cryptosystem, CRT, Java Eclipse, Android SDK.

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Authors:	**Dakshayani.G, Amol P Pande**	
Paper Title:	**Mean Probabilistic Approach for Risk Estimation in MANET**	

52.

Abstract: Mobile ad hoc network (MANET) is a collection of mobile hosts without the required intervention of any existing infrastructure or centralized access point such as a base station. MANET has the dynamic infrastructure hence it is highly vulnerable to attacks. Several attacks are possible in MANET networks and among them routing attack could cause the worst damage. There are several solutions available for mitigating the routing attacks based on the intrusion response techniques but most of them isolate the malicious node only based on the binary decisions taken for severity in attacks. This will cause additional damage to the network. Risk mitigating techniques is one of the important factor in MANET environment. This paper is about exchange of data between the various nodes in a MANET in a secure manner. we have designed an approach for fusing the evidences so that risk can be assessed effectively and decision of whether an attacker node has to isolated or not. Since always isolation of attacker could result in more serious damages. Therefore our approach isolates only the fake links established by the attacker, unless the attacker is causing more devastating damages.

Keywords: MANET, Routing attacks, routing protocols, Evidence, Risk.

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Authors:	**Tauseef Amin Azmi**	
Paper Title:	**Physical Design Implementation of Processor Torpedo at Different OCV Scenarios -40, 25, 125 Degree Celsius of an ASIC Design Chip**	

53.

Abstract: This Paper basically studies the physical design implementation of torpedo processor which incorporates 32 macros in overall and 43000 cell instances .We had 5 clocks ,3 propagated and 2 generated clock in a die size of 5.9 mm square which operated at a frequency of 400 megahertz having a supply voltage of 1.8 volts .The technology which we worked was 180 nm technology and working on the IC Compiler tool from synopsys and then moving on to static timing analysis part on the Prime time tool from synopsys and then further moving on to drc/lvs checking on the tool Calibre from mentor graphics.

The foundry which supplied us the 180 nm technology documents was Jazz semiconductors INC.The earlier work on this project that were carried out were at different scenarios and hence the results were with different optimization ,here in our study we had made a comprehensive and mature step to achieve the maximum optimization of the placement of the standard cells and therefore in our effort we had chosen the three scenarios for our thesis which were three operating conditions :function minimum, function maximum , CTS maximum.

The temperature that we worked on the physical design implementation of this block level subsystem were -40 degree celcius , 25 degree celcius ,125 degree celcius. The three scenarios supply voltages were 1.65 volts ,1.8 volts and 1.9 volts respectively and the power dissipation was 300 milliwatts with a pre cts derate of 15 % and post cts derate of also 15% respectively.

The thesis was not so easy to carry out as we had several problems occurring at every step like the IR DROP was exceeding the limit which was provided as 5% of the total VDD+VSS supposed to be within 90 mv also errors from routing congestion and DRC errors were prompt.

Keywords: ASIC Design, OCV,VLSI,Physical design,Scenarios.

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54.	**Authors:** **Mrs. Sonia, Nisha Malik, Preet Kanwar Singh Rekhi, Sukhvinder Singh Malik**	
	Paper Title: **Uplink Power Control Schemes in Long Term Evolution**	
	Abstract: in multi user environment, number of users share the same radio resources. The shared channels cause the signal intended for a certain user to reach other users and introduce interference in their path and degrade the signal quality. Power control needs to reduce inter-cell interference level and at the same time achieve a required SINR level. To achieve this SINR level eNodeB sends Transmit Power Control (TPC) Command in Downlink in PDCCH and UE sends Power Head Room (PHR) stating how more it can transmit to reach maximum power. In this paper, authors have worked upon the PUSCH Power control, LTE power control mechanism, TPC Command and Power Headroom Reporting. They also found the optimum value of Path Loss Compensation Factor "α". **260-264**	

Keywords: LTE, Uplink, Open Loop Power Control, Close loop Power Control, Fractional Power Control, and Inter-Cell Interference.

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55.	**Authors:** **Aishvarya Bansal**	
	Paper Title: **Brick and Click Model: An important Tool for Web Marketing**	
	Abstract: This paper emphasizes on web marketing as an important tool for the marketers to offer goods and services. Products are now increasingly sold online and not just confined to local stores as in the traditional brick and mortar firms. The brick & click model helps web marketers by combining online capabilities with the traditional bricks-and-mortar firms. This paper will keep an eye on the brick and click model as an important tool for the marketers for technology driven consumers who want goods conveniently and easily at their doorsteps. With an increase in number of online users and products offered online the collaboration of a web marketer through partnership or joint venture as in brick and click firms prove more profitable in terms of wider coverage and economies of scale. **265-266**	

Keywords: Brick and Click model, Brick and Mortar firms, Supply chain management, Web marketer.

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56.	**Authors:** **Hannah Monica Anoop, S. Paul Sathiyan**	
	Paper Title: **Modelling and Simulation of Modified Flyback Converter for HID Lamp**	
	Abstract: This paper presents an electronic ballast for High Intensity Discharge lamp. The modified flyback converter is used to produce Low-Frequency Square-Waveform inorder to avoid acoustic resonance. The converter has the advantages of only two active switches for current control and a single choke. The design of the converter is presented. The converter is simulated in PSIM and the simulation results are shown. **267-271**	

Keywords: Acoustic Resonance (AR), High Intensity Discharge (HID), Low-Frequency Square-Waveform (LFSW), Power Control (PC), Power Factor Correction (PFC).

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57.	**Authors:** **Snehal Ghormade, Bhagwat Kakde**	

	Paper Title:	**Comprehensive Information Hiding in an Image Using Wavelet Transform**	

Abstract: This research paper is concerned with the steganography in a digital image. Steganography is always preferred upon encrypting the secret information because hiding arouses less suspicion as it conceals its very existence. The techniques developed in the past mainly comprises of hiding only a text or an image within an image. The scheme presented here is an attempt to achieve an efficient wavelet based technique for hiding different forms of multimedia information within an image. This system will certainly provide additional intelligence as audio, text and image are embedded in a single image concurrently. Experimental results show that the proposed algorithm can be successfully implemented with very high quality and imperceptibility. Further, the approach used here provides an additional security which prevents the intruder from retrieving the secret information even if the existence of secret information is noticed.

Keywords: Discrete wavelet transform, Image Processing, Information Hiding, Steganography, Secured Digital Communication.

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	Authors:	**B. Lakshmana Nayak**	
	Paper Title:	**Desing, Modeling and Simulation of VAR Compensation Using Fuzzy Control Svc in Long Transmission Line**	

Abstract: In this paper, FACTS technology is used to transmission capabilities, transmission flexibility, independent operation, power system individual units, without effect of stability temperature can be limited and reactive power control either or both FACTS devices and Static VAR Compensator (SVC). This paper attempts to design and simulate the Fuzzy logic control of firing angle for SVC in order to achieve better, smooth and adaptive control of reactive power. The design, modeling and simulations are carried out for $\lambda /8$ Transmission line and the compensation is placed at the receiving end (load end).

Keywords: Fuzzy Logic, FACTS and SVC.

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	Authors:	**Mohammad Ali Adelian, Rahul S.Desai**	
	Paper Title:	**Optimal Reliability and Line Loss in Distribution Networks**	

59.

Abstract: In this paper, both Distributed Generators (DG) and capacitors are allocated and sized optimally for improving line loss and reliability. The objective function is composed of the investment cost of DGs and capacitors along with loss and reliability which are converted to the genuine dollar. The bus voltage and line current are considered as constraints which should be satisfied during the optimization procedure. Hybrid. Particle Swarm Optimization as a heuristic based technique is used as the optimization method. The IEEE 69-bus test

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system is modified and employed to evaluate the proposed algorithm. The results illustrate that the lowest cost planning is found by optimizing both DGs and capacitors in distribution networks.

Keywords: distribution network, optimization methods, Reliability

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Authors:	**Nithin T Abraham, Shaema Lizbeth Mathew, C.A Pradeep Kumar**	
Paper Title:	**Design and Implementation of Solar PV Poultry Incubator**	

60.

Abstract: Incubation of poultry egg is very important these days as the demand for chicken is increasing day by day. But the process of hatching eggs by the conventional method is very difficult as well as it consumes much power. In short conventional method of egg hatching requires continuous supply of power. In this paper a new method of solar poultry incubator design is suggested which could be used to hatch eggs from solar pv and hence could reduce the usage of power and can maximize the usage of solar power which is a renewable source of energy. By implementing this method of solar poultry incubator we will be able to reduce the power consumption of the incubator by 75% and the cost involved in the design also yields profit and hence could bring out a revolution in this field.

289-291

Keywords: Battery, Charge Controller, Hatching, PV panel

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Authors:	**C.A.Pradeep Kumar, A.Benuel Sathish Raj**	
Paper Title:	**Comparative Study between Wind and Fuel Cell by Using Fuzzy Logic Control**	

61.

Abstract: Due to ever increasing energy consumption, rising public awareness of environmental protection, and steady progress in power deregulation, alternative (i.e., renewable and fuel cell based) distributed generation (DG) systems have attracted increased interest. Wind and photovoltaic (PV) power generation are two of the most promising renewable energy technologies. Fuel cell (FC) systems also show great potential in DG applications of the future due to their fast technology development and many merits they have, such as high efficiency, zero or low emission (of pollutant gases) and flexible modular structure.
This study presents different power management strategies of a stand-alone hybrid power system and controlled by using fuzzy logic control. The system consists of two power generation systems, a wind turbine and a proton exchange membrane fuel cell (PEMFC). Wind turbine is the main supply for the system, and the fuel cell performs as a backup power source. Different energy sources in the system are integrated through an AC bus. Therefore, continuous energy supply needs energy storing devices. The state of charge (SOC), charge-discharge currents are affecting the battery energy efficiency. The control algorithm is simulated using Matlab-Simulink.

292-298

Keywords: Wind, Fuel cell, Fuzzy, Dynamic Simulation, MAT LAB Simulink modeling.

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Authors:	**A. D. Dighe, A. K. Mishra, V. D. Wakchaure**	
Paper Title:	**Investigation of Wear Resistance and Torque Transmission Capacity of Glass Filled Polyamide and PEEK Composite Spur Gears**	

Abstract: Polymer & polymer composite gears find increasing application because of the low material manufacturing cost, light weight & quiet operation compared with metal gears. Generally thermoplastic polymers like acetal polymer & nylon polymer are used for gear applications. But acetal and nylon gears have low load carrying capacity. To improve the performance of gears, geometry modification had been done like tooth width modification & cooling holes on tooth surface. But, for high power applications, these materials show poor performance. Therefore, it is necessary to select the polymer which has good mechanical properties & good thermal stability. Poly-ether-ether-Ketone (PEEK) has high strength & stiffness, low coefficient of thermal expansion which is required for gears. The comparative performance spur gears of 30% glass filled PA66 and 30% glass filled PEEK was investigated in this study. The results shows that 30% glass filled PEEK gears have high wear resistance and high torque transmission capacity as compare with 30% glass filled PA66 gears.

Keywords: Poly-ether-ether-ketone (PEEK), Polyamide 66 (PA66), Scanning Electron Microscope (SEM).

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Authors:	**Kamal Kashyap, D.G.Mahto**	
Paper Title:	**Analysis of Hooks Joint Using Ansys by Von-Mises Method**	

Abstract: Hooks joint (universal Coupling) is a very important for transmitting power from one shaft to another. Sometimes the failure in this assembly takes place due to improper design and analyzing .The aim of this paper is to present a finite element analysis predicting the behavior of hooks joint under different loads on different parts. The software package ANSYS is used to model the joint.   This paper may help to improve the quality of hooks joint.

63. **304-305**

Keywords: hooks joint, ANSYS, Finite element analysis ,Von Mises Equation.

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Authors:	Kung'u Beatrice Wanjugu, Z.Abiero Gariy, S.M.Mulei
Paper Title:	Utilization of Shredded Waste Plastic Bags and Waste Sugar Cane Ash in Bitumen & Bituminous Mix for Improved Road Performance

64.

Abstract: With the expansion of road network in Kenya, care should be taken to construct road pavement that will last their designed life if not to outlive it. Bitumen is a major component in road construction material providing its ability to sustain traffic road. Bituminous paved road fail or get damaged if it is no longer able to sustain traffic or other environmental loading. They fail through poor road maintenance, pot-hole development, overloading among other factors. Convectional bitumen can be modified using waste sugar cane ash (WSCA) and shredded waste plastic bags (SWPB) to improve its mechanical properties as well as solving the disposal issue.

The main objective of this study is to understand the fundamental behaviour of modified bitumen, evaluate its mechanical property, and determine optimum mix proportion of the waste to modify bitumen.

The modified bitumen and aggregates used in this study were taken through the standard tests to ascertain their suitability in road construction. Marshall Stability test was conducted to determine bitumen optimum content, stability and flow on the modeled briquette

The results gotten from the modified bitumen and aggregates were within the recommended standard specifications. The optimum bitumen content is 5.4% and a stability of 12600N. Penetration index (ranges 61-68) and softening point (51.3 – 57.8). The aggregates strength (20.6%), water absorption (0.69%) and weathering (2%).

The modified bitumen has the ability to withstand high temperature, heavy load and this will minimize the development of rutting and cracking of the wearing course reducing seepage through the pavement surface.

It should be recommended that the convectional bitumen commonly used in Kenya 80/100 should be modified using WSCA and SWPB to make it a better binder for road construction

Keywords: Modified bitumen, shredded waste plastic bags, waste sugar cane ash, mixed design, road design life

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Authors:	M. Ramya, E. Thenmozhi
Paper Title:	An Efficient Converse Mapping Technique in Modern Information Retrieval

65.

Abstract: A traditional forward dictionary maps from words to their definitions. Unlike a regular dictionary, the reverse dictionary performs converse mapping that maps from definitions to words. The user input phrase describes the definition of desired concept, and returns an efficient candidate word that satisfies the input phrase. The reverse dictionary addresses the widespread problem of knowing the meaning of a word, but unable to recall the appropriate word on demand. The converse mapping technique finds the exact result for the user entered keyword by comparing the partitioned input with dictionary database. The partitioning method increases the overall scalability and distributes the data across multiple threads. The efficiency of the reverse dictionary can be improved by reducing the set of definitions in the comparison process. The query expansion technique is used to improve the potential of reverse dictionary and increases the probability of identifying relevant definition. The approaches of reverse mapping provide significant improvements in the performance scale. The converse mapping technique in modern information retrieval extracts the best matched result without sacrificing the quality of the solution.

Keywords: Dictionaries, thesauruses, search process, web-based services

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Authors:	**Sreerag R.S., Joshy R.S., Regi KumarV.**	
Paper Title:	**Review of Logistics Parameters for Achieving Resilience and Coordination in Indian Supply Chains**	

Abstract: Supply chain management is one of the thrust areas for competitiveness and growth of industries. Supply chain management emphasizing logistics parameters yields well optimized delivery of goods, services and information from supplier to customer. An effective supply chain makes industries competitive and profitable. Small and medium enterprises (SMEs) in India face problems in coordinating their supply chain due to lack of proper identification and utilization of logistics parameters and infrastructure. Latest and the state of art technologies and management tools have to be used for improving the performance of supply chain and logistics management in India with proper identification and treatment of appropriate logistics parameters. In this paper a review of factors affecting or influencing resilient logistics and various mechanisms for coordination of supply chains in Indian scenario is done.

Keywords: (SMEs)

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Authors:	**Rakesh Gautam, Mangesh J Bhagat, Sudip Dongare**	
Paper Title:	**Modeling of 3 Link Biped Robot using DH Algorithm**	

Abstract: This paper aims to develop a simple mathematical modeling of biped series of humanoid robots. Since the introduction of Wabot from Waseda University in 1973, many humanoid robots have been developed around the world that can walk with stability . Various biped robots have successfully shown their capabilities, bipedal walking methods are still one of the main technical challenges that robotics researchers are trying to solve. For modeling of biped robot or any multi body system different methods are used like Newton-Euler, Lagrange-Euler. By implementing use of Denavit Hartenberg convention for modeling kinematics for biped robots, we give an algorithm for derivation of Lagrange-Euler equations of motions for a general biped robots. We have considered a biped robot with three links having four degrees of freedom.

Keywords: Humanoid, biped , D-H algorithm

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Authors:	**Nilesh Patil, Mohit Udani, Rushi Bhusari**	
Paper Title:	**Delay Compensation for DC Servo Motor using Smith Predictor Scheme**	

68.

Abstract: Feedback control systems wherein the control loops are closed through a real time network are called Networked Control System (NCS). The defining feature of a NCS is that information (reference input plant output control input,etc.) is exchanged using a network among control system components (sensors, controller,actuator,etc.).Time delay occurs in the networked control system when the exchange of data among sensors, actuators and controllers takes place. Such delays result in Performance degradation and the reduced stability or total instability of the closed-loop system. In order to compensate time-delay in the networked control system (NCS),different time delay compensation schemes are available i.e. PID controller, LQR controller, Fuzzy controller, etc. In this paper PID controller is used for compensating the time delays in the NCS. Mathematical Modeling for DC Servo Motor have been presented.The main objective of this paper is to compensate the delay in the servo feedback loop by using Smith Predictor compensation scheme.

Keywords: Servo Motor, Smith Predictor,PID Controller.

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Authors:	Anoop A.T., Nithin Joseph, Regi Kumar V.
Paper Title:	Review of Green and Sustainable Indicators for Indian Supply Chain Networks

Abstract: Sustainability and Green are the thrust areas rising to prominence across every part of business, environment and society in the twenty first century. The mounting anxiety with the environment, in particular the possibility of climate change due to global warming has led to the attention on how human and economic activity has the potential to harmfully impact the sustainability of the planet. In this age of ambiguity, with the scarcity of resources and competing demands, finding the identical resources is the key challenge that supply chain managers are facing. The supply chain fulcrum that balances the demand and supply defines sustainability as "meeting the needs of the present without compromising the ability of the future generations to meet their own needs". This paper reviews a set of open, inclusive and natural set of indicators to measure sustainability of the supply chains. The main objective of this study is to differentiate the green and sustainable concepts in the literature and to identify the stand alone indicators in association with the future supply chain models. This study reviews a publically available indicator set and provides a categorization of indicators that are quantifiable and clearly related to supply chains. The work is also envision to establish an integrated sustainability indicator array as means to provide a common access for academicians to learn about current indicators and measures of sustainability. This paper considers Indian scenarios of growth as the reference framework for sustainability and development.

Keywords: Green, Sustainability, Sustainable Development, Sustainability Indicators, Sustainable Supply Chains

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Authors:	**Kamal Kashyap, D.G.Mahto**	
Paper Title:	**Improvement in Production and Quality of Fork Using CAD/CAM**	
70.	**Abstract:** This paper presents improvement of Fork of a universal coupling by process monitoring using CAM. Now days every part must be made so accurate so that it may give assurance to the manufacturer of quality. The cardinal purpose of this project is to identify the process sequence, machining time and accuracy of the finished product by using CAM. To get the perfect result the entire process is simulated by using NX software every aspect is determined like cutting tool, spindle speed and machining parameters, finally software simulates the entire sequence of processes resulting to give us a program from which the same product can be made in the best machining time.

Keywords: simulation, process sequence, machining parameters, machining time.

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| **Authors:** | **Arvind Jain, Amita Mahor, Parikshit Bajpai** | |
| **Paper Title:** | **The State of Art of Reduction of Leakage Current in Grid Connected Inverters for PV System** | |
| **71.** | **Abstract:** Depletion of fossil fuel, unremitting increase in power demand and environmental concern develops a thought among power community to adopt new sources of power generation i.e. renewable energy sources. Due the abundance of solar energy PV systems are more popular, which can isolate from grid with the help of transformer. These transformers increase the cost and make the system more complex with decrease of efficiency. At the same time absence of transformer in grid connected system injects the leakage current in the inverter and increases the electromagnetic emissions, harmonics and losses in the system. To address the above many research have been done related to eliminate this leakage current. In this paper an exhaustive review has been done in the subject area.

Keywords: leakage current, photovoltaic (PV) systems, transformerless inverter.

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Authors:	**Parikshit Bajpai, Amita Mahor, Arvind Jain**	
Paper Title:	**A Comparative Investigation of Reduce Device Count in Inverter Topologies**	

Abstract: Industrialization plays an important role for the Economic growth of the country. In industries various convertors are used for the controlling and conversion of power in convertor Circuit. The no. of semiconductor devices are used along with its auxiliary circuit, which makes the system complex. Hence in order to reduce the complexity of converter system, various researchers are suggested different circuit topologies in order to reduce the complexity of the of the converter system with reduce device count. , and claimed the better performance. This paper is response note of the various work in the subject area .which has been already done previously.

Keywords: switch count, switch leg structure.

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Authors:	**Rabiul Islam, Gourab Banerjee, Feroz Ali**	
Paper Title:	**Design and Benefit Analysis of Biogas Plant for Rural Development in Bangladesh**	

Abstract: Energy is one of the major concerns for the developing future of any nation and electricity is the most useful form of energy. Around 65% people are getting electricity. As Bangladesh is blessed with suitable geographical location for solar energy and perfect weather condition for Biomass energy, we can think only solar and Biogas energy to supply them electricity. Although solar home system (SHS) is getting popular in the non grid areas of Bangladesh, however per unit cost of such electricity is extremely high (nearly 50 cents). Poor households cannot afford to buy such an expensive system. Sort term loan is being offered to the rural people to popularize the SHS; however response of the rural masses to adopt such system is a bit sluggish. This paper focuses on potential of biomass resources and its proper utilization can help to give an easy realistic solution on the way of sustainable energy security of Bangladesh.

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Keywords: Biomass Energy, Bangladesh, Cattle Dung, Sustainable Energy, Potential of Biomass in Bangladesh.

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Authors:	**Vishal Vaidya, P.P. Hujare**	
Paper Title:	**Effect of Resonator on Transmission Loss and Sound Pressure Level of an Air Intake System**	

Abstract: This paper emphasizes the role of resonator on transmission loss in air intake system and its sound pressure level reduction. The intake noise of an automobile induced by firing of an engine accompanies acoustic resonance of ducts of an intake system. Conventionally, the adoption of an integrated type resonator was one of possible ways to eliminate the booming noise due to acoustic resonances of air ducts. Although the Helmholtz type resonator is convenient to attenuate the intake noise of an automobile, the usage of the Helmholtz type resonator requires cost increase or big engine room space.

74.

Keywords: Air intake system, Resonator, Acoustics Simulation

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	Authors:	Somaya Abouelfadl, Khaled El-Lithy

	Paper Title:	Impact Assessment of Global Warming on Egypt

Abstract: Extreme weather events due to global warming become more frequent and intense in Egypt. Recently, some interior parts of Egypt saw torrential heavy rainfall and even snow for the first time in nearly half a century. Global warming consequences threaten Egypt's densely populated coastal strip and Nile Delta, and could have grave consequences for the country's economy, agriculture and industry. A rise of only 30cm to the sea level over the next 15 years would flood 200 square kilometres and displace 500,000 people, effectively ending 70,000 agricultural jobs. Planners and Decision makers are required to think about new scenarios and strategies which are raised as challenge in front of the recent climate changes in Egypt and related impacts. This paper describes recent climate changes impact in Egypt, its future impacts and tries to define defensive actions against the expected global warming crisis on Egypt.

Keywords: Climate change, Egypt, Global warming, Nile delta, Sea Level Rise (SLR)

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	Authors:	Fae`q A. A. Radwan

	Paper Title:	Isotropy of Some Cubic System Alloys

Abstract: The norm of elastic constant tensor and the norms of the irreducible parts of the elastic constants of The alloys Thorium-Carbon, Titanium-Chromium at different percentages of Chromium, Titanium-Niobium at 40% of Niobium, Titanium-Vanadium at different percentages of Vanadium, Tungsten-Rhenium at different percentages of Rhenium, Uranium-Niobium-Zirconium("Mulberry") at 7.5% of niobium plus 2.5% of Zirconium, Vanadium-Chromium at 17.5% of Chromium, Vanadium- Hydrogen at different percentages of Hydrogen, and Vanadium-Oxygen at different percentages of Oxygen are calculated. The relation of the scalar parts norm and the other parts norms and the anisotropy of these alloys are presented. The norm ratios are used to study anisotropy of these alloys.

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Keywords: Thoorium, Titanium, Carbon, Chromium, Vanadium, Uranium, Zirconium, Oxygen, Hydrogen,

Niobium, Rhenium, Tungsten, Alloys, Isotropy, Norm, Anisotropy, and Elastic Constants.

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Authors:	**Soumya Sunny, Rency Roy, Priyanka K, E Escalin Preethi, Kokila R**	
Paper Title:	**Modelling of Controlled On-Time Boost Power- Factor-Correction Converter by Linearising the Large-Signal Average Model**	

77.

Abstract: Controlled on time boost power-factor-correction converter is modelled using large-signal transient behaviour of the circuit. Large-signal model is linearised to form small signal model.

Keywords: Large-signal model, controlled on-time boost power factor-correction converter, small-signal model.

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Authors:	**S.Thirumagal, A.Safiya Parvin**	
Paper Title:	**An Efficient Way to Reduce Data Service Delay Using Map Reduce Framework**	

78.

Abstract: The demand of real time data services has increased in various data intensive real time applications such as e-commerce, traffic control, manufacturing etc. Supporting timely data services using such applications is a challenging issue, since the workload may dynamically change based on the current market status. Real time data services are services which has to provide better quality of service to the end users . Most e-commerce clients may tend to leave if the service delay is longer than a few seconds. To overcome this problem, we use the map reduce framework to reduce the real time data service delays. With the existing chronos architecture map reduce framework is used to minimize the delays. The Map Reduce framework processes large amount of data in a parallel way.

Keywords: Map Reduce, Quality of Service, Real time data service

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Authors:	**Usha Sharma, S.R.N. Reddy**	
Paper Title:	**Implementation of a WSN based Home/Office Automation (HOA)**	

79.

Abstract: Wireless sensor network in home/offices are easy to establish without using cables and offers a greater coverage. This paper presents the design and implementation of a wireless sensor network for automating the home or offices. The developed system consists of sensor node and master node which are organized into a star topology network by ZigBee communication. The system is used to monitor and control the temperature, light, fire, gas leakage, water leakage and intrusion in home/office environment. User can take action to restrain the alert condition through computer or switches connected to master node. Through the experiments, the feasibility and practicability

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of the system has been checked and the results are interpreted in this paper. The designed system provides a flexible and low cost solution for us to make our home/office smarter.

Keywords: Home/office automation, WSN, Zigbee, sensor node

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Authors:	**Abhishek Awasthi, Garima Saini**	
Paper Title:	**Microstrip Array Antenna with Left Handed Metamaterial at C-Band**	

Abstract: Left-handed Metamaterial (LHM) is an artificial material where the permittivity and permeability are simultaneously negative at a certain range of frequency. One of the unique properties of the LHM is its negative refraction index which produces focusing effect to the wave propagating through the LHM. With this unique property, the LHM structures are used to increase the low gain of the microstrip antenna. In this work, an LHM structure consists of a modified split ring resonator (MSRR) and two capacitance loaded strip (CLS) is proposed. The MSRR has four slots in the middle of the structure which create wider range of negative permittivity and permeability. The MSRR exhibits negative permeability while the CLS exhibits negative permittivity. For the simulation process CST MICROWAVE STUDIO has been used. The metamaterial antenna presented in this paper is designed to operate at 7.3328 GHz and is employed for ultra-wideband (UWB) applications; which operates in C band. The substrate used is FR4 Board (Fire Retarded 4) with a dielectric constant of 4.7, thickness of 1.6 mm and a tangential loss of 0.019. The design yields return loss <-30dB. Simulations also show that the metamaterial antenna has improvement in gain compared to the arrray patch antenna.

Keywords: Array antenna, Left-handed Metamaterial, Ultra-wideband, slip ring resonator, capacitance loaded strip.

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Authors:	**Ramya Singh, Arushi Srivastava, Vartika Srivastava, Siddhesh Mulik, Guided by Vipul Gohil**	
Paper Title:	**Topical Applications of SCADA**	

Abstract: The task of supervision of machinery and industrialprocesses on a routine basis can be an excruciatingly tiresome job.Always being by the side a machine or being on a 24x7 patrol duty around the assembly line equipment checking the temperature levels, water levels, oil level and performing other checks would be considered a wastage of the expertise of the technician on trivial tasks. In order to reduce the number of checks or not waste manpower on this trivial task engineers have come up with a newtechnique. As a result, SCADA systems were formed. SupervisoryControl and Data Acquisition (SCADA) offers the ease ofmonitoring of sensors placed at distances, from one central location. This paper also discusses the topical real time applications of SCADA which are based in industries worldwide.

This paper discusses four applications of SCADA namely: SCADA based green growth monitoring; Reverse Osmosis desalination plants; SCADA system in Oil Natural Gas Corporation LTD; Implementation of a Fully Automated Greenhouse Using SCADA Tool Like Labview.

81. **Keywords:** SCADA

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Authors:	**Mandeep Singh, Amandeep Singh, Charanjeet Singh**	
Paper Title:	**Practical Implementation of Cognitive Radio Using Energy Detection Technique**	

Abstract: Due to the growing demand of wireless spectrum the Cognitive Radio (CR) is used for the spectrum utilization purpose. Basically the Licensed users use the licensed bands but with the help of CR technology, the licensed bands can also be provided to see users. The main aim of cognitive radio is to sense the spectrum continuously. In this paper, we provide theproposal that how the capacity of the system can be increased by reuse the unused licensed band by simulating a Cognitive radio system. The secondary users can occupy free space (spectrum holes) and also licensed bands by continuously monitoring the spectrum.

82. **Keywords:** Cognitive Radio,Spectrum Sensing,Spectrum Holes,Primary Users,Secondary Users.

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Authors:	**Bilal Abdullah Nasir**	
Paper Title:	**Design of Micro-Hydro-Electric Power Station**	

83.
Abstract: Micro-hydro-electric power is both an efficient and reliable form of clean source of renewable energy. It can be an excellent method of harnessing renewable energy from small rivers and streams. The micro-hydro project designed to be a run -of-river type, because it requires very little or no reservoir in order to power the turbine. The water will run straight through the turbine and back into the river or stream to use it for the other purposes. This has a

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minimal environmental impact on the local ecosystem.

The design procedure of micro-hydro power plant was implemented by a Matlab Simulink computer program to calculate all the design parameters. The choice of the turbine type depending mainly on the site head and flow rate. The turbine power and speed were directly proportional with the site head, but there were specific points for maximum turbine power and speed with the variation of the site water flow rate. The head losses in the penstock could range from 5 to 10 percent of the gross head, depending on the length of the penstock, quantity of water flow rate and its velocity. The turbine efficiency could range from 80 to 95 percent depending on the turbine type, and the generator efficiency about 90 percent.

The design study showed that construction of micro-hydro-electric project was feasible in the project site and there were no major problems apparent at the design and implementation stages of the micro-hydro-electric power plant.

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

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Authors:	Helale Amini, Khalil Mirzaei Varoei
Paper Title:	Criteria and Structure Analysis of the Dialogue among Religions in Mathnavi Ma'navi

Abstract: Mystic Poetry from its birth till its maturity has been irrigated with one main destiny and has been overfilled with divine minutes. One of the effective elements which blossomed mystic poetry, and Mathnavi as an example, is a "dialogue". Mathnavi is a dialogic book which has narration in its infra-structure and its style is in a way that dialogue gives it a special look. In Mathnavi, the tone of voice is completely in harmony with the characterization, and so is the tone of the speaker in harmony with its listeners. The goal of this study is the analysis of Mowlana's ideas about dialogue among different (human and non-human) characters and among the representatives of different schools of thinking and different religions. Additionally it engages to show the internal characteristics and personality of the characters and their actions and reactions to the presented thoughts through dialogue. This study attempts to give a history of dialogue and dialogical approaches among religions. It also explains the characteristics of dialogues through examples. From another viewpoint on which this study is founded dialogue is categorized according to its types (Dialogue and Monologue), the parties of speaking (Human and non-human), aspects of speaking (brevity, equality and verbiage) and thus the dialogues which have communicative and religious confronting representations.

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Keywords: Mowlana, Mathnavi, Dialogue, Religions.

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| 85. | **Authors:** | **Snehal S. Pachegaonkar, Santosh G. Taji, Narayan Sane** | 402-406 |
| | **Paper Title:** | **Performance Analysis of Double Pipe Heat Exchanger with Annular Twisted Tape Insert** | |

Abstract: The purpose of this paper is to analyse heat transfer and pressure drop characteristics of Double pipe heat exchanger with annular twisted tape insert. Experiment has been performed on three set-ups: Plain double pipe heat exchanger used as a reference and two different angled twisted tapes inserts. The effect of twist angle on heat transfer coefficient and pressure drop are determined. Experiment using plain pipe is carried out for comparison. The experimental result reveal that both heat transfer coefficient and pressure drop in the pipe with twisted tape, are higher than those in the plain pipe.

Keywords: Double pipe heat exchanger, twisted tape, heat transfer coefficient, heat transfer enhancement, pressure drop.

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| 86. | **Authors:** | **R.Kayalvizhi, S.Sarika** | 407-409 |
| | **Paper Title:** | **A Novel Approach to Prevent the Discrimination in Data Mining** | |

Abstract: Automatic data collection has become the most wanted method in the banking sector to make automatic decisions like loan granting/denial. The discriminations in the dataset will lead to take the decisions in the partiality manner. The discrimination can be either direct or indirect discrimination. Direct discrimination occurs when decisions are made based on sensitive attributes. Indirect discrimination occurs when decisions are made based on non-sensitive attributes. To overcome the partiality decisions the proposed system produces the anti-discrimination methodologies. The anti-discrimination methodologies prevent the discriminative decisions in the dataset. The proposed system prevents the discrimination without affecting the data quality.

Keywords: anti-discrimination. Rule protection and rule generalization

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| 87. | **Authors:** | **Majid S. Naghmash, Md Hussein Baqir, Mousa Kadhim Wali** | 410-415 |
| | **Paper Title:** | **Low Inter Symbol Interference SDR Receiver using LMS Algorithms** | |

Abstract: In this paper, the low Inter Symbol Interference (ISI) Software Defined Radio (SDR) receiver using Least Mean Square (LMS) algorithms is developed and investigated. The transmission medium will distort the incoming digital signals and the aim of the (LMS) is to remove the effect of Inter Symbol Interference (ISI) in the Software Defined Radio (SDR) receivers. The resulting of this process is an important act in digital signal processing performance techniques. The development of adaptive equalizer to follow the raped growth in modern information systems is the key of error reduction. To increase the data transmission rate, an efficient adaptive equalizer should be used in radio communication systems. In this paper, the channel selection LMS equalizer filter is developed to eliminate the ISI from the software defined radio (SDR) receiver channel. The LMS equalizer is presented and

investigated according to MATLAB simulation. The proposed equalizer shows better performance than the conventional filter with AWGN distortion and inters symbol interference (ISI). The results show a promising basis for rising code, algorithms in 16-QAM modulation scheme.

Keywords: LMS, ISI, SDR Receiver, 16-QAM

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Authors:	**M.Mohanraj, P.Swaminathan, T.Hemanth Kumar**
Paper Title:	**Modelling & Simulation of Solar Photovoltaic Modified Interleaved Buck Converter for Battery Charging Application**

Abstract: This paper proposes a new modified interleaved buck converter which can be used where the operating duty cycle is required below 50%. The switching losses and the stress of the switches has been reduced with the IBC and hence the buck conversion efficiency also is increased to 93.3%. The output current ripple is found to be very small with the modified IBC. The operating principles and different modes of operations of the modified IBC are explained in this paper.

Keywords: Buck converter, interleaved, low switching losses.

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88. | 416-421

Authors:	**E. Suresh Kumar, Bijan Sarkar, Nija K.S.**
Paper Title:	**Quality Improvement of PV Modules by Electroluminescence and Thermal Imaging**

89. | 422-427

Abstract: The ability of a PV module to withstand the effects of periodic hot-spot heating that occurs when cells are operated under reverse biased conditions is one of the quality characteristics that are verified within IEC qualification testing. The extent of hot-spot heating of solar cells is closely related to the properties of the semi-conductor material. Locally concentrated shunt defects are caused by non-uniformity. The extent of defects is correlated with the slope of the reverse IV-characteristic. In this paper the operational behaviour of crystalline cell types were investigated under reverse biased conditions. These conditions occur within the interconnection circuit of modules when cells are mismatched or totally or partially shadowed, possibly leading to thermal overload (hot-spot heating). This study is focused on the electrical as well as the thermal characterisation of solar cells that are operated under the reverse biased conditions. In connection with reverse biased operating conditions this study is focused on the following points: To identify the cell parameters for a comprehensive description of the electrical and thermal operational behaviour. The knowledge of these parameters is important for design of effective bypass diode concepts in modules. This paper is an insight into the applicability of the simplified method to select the worst case hot-spot

cell in a module. The selection of this cell is the first step of hot-spot safety testing.

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

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