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1.

Authors: Sujit Das, R. Behera, P.K.Bardhan, S. Patra,B. Oraon,G. Sutradhar

Paper Title: Experimental Analysis of Density of Sintered SiCp Reinforced AMMCS Using the Response Surface Method

Abstract: The continuous development of technology in automotive manufacturing process demands new solutions which is largely de-pendent on the development of lightweight, non-pollution for the environment materials of improved mechanical properties and also with a low cost production. According with these required characteristics of materials, the aims of this paper were to manufacturing Al-SiCp composites by powder metallurgy (P/M) processing route. Since density is a pre-dominant factor in the performance of powder metallurgy components, it has been primarily considered for the present investigation. An experimental investigation have been undertaken in order to understand the variation of density with respect to the variation of process parameters viz., variation of silicon carbide proportion, compacting pressure and sintering time. The relation among the various process parameters with density has been studied. A mathematical model has been developed using second order response surface model (RSM) with central composite design (CCD) considering the above mentioned process parameters. The mathematical model which developed in this investigation would help in predicting the variation in density with the change in the level of different parameters influencing the density variation. This mathematical model also can be useful for setting of optimum value of the parameters for achieving the target density.

Keywords: Powder Metallurgy, Density, Sintering, Response Surface Model, Central Composite Design.

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2.

Authors: Md Minhaj Ahmed

Paper Title: Reactor Physics and the Nuclear Fuel Cycle

Abstract: Questions regarding the feasibility of fusion power are examined, taking into account fuel cycles and breeding reactions, energy balance and reactor conditions, approaches to fusion, magnetic confinement, magneto hydro dynamic instabilities, micro instabilities, and the main technological problems which have to be solved. Basic processes and balances in fusion reactors are considered along with some aspects of the neutronics in fusion reactors, the physics of neutral beam heating, plasma heating by relativistic electrons, radiofrequency heating of fusion plasmas, adiabatic compression and ignition of fusion reactors, dynamics and control of fusion reactors, and aspects of thermal efficiency and waste heat. Attention is also given to fission-fusion hybrid systems, inertial-confinement fusion systems, the radiological aspects of fusion reactors, design considerations of fusion reactors, and a comparative study of the approaches to fusion power. The nuclear fuel cycle, also called nuclear fuel chain, is the progression of nuclear fuel through a series of differing stages. It consists of steps in the front end, which are the preparation of the fuel, steps in the service period in which the fuel is used during reactor operation, and steps in the back end, which are necessary to safely manage, contain, and either reprocess or dispose of spent nuclear fuel. If spent fuel is not reprocessed, the fuel cycle is referred to as an open fuel cycle (or a once-through fuel cycle); if the spent fuel is reprocessed, it is referred to as a closed fuel cycle..

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Keywords: Nuclear Power Reactors, Reactor Technology, Technology Assessment, Thermonuclear Power Generation, Controlled Fusion, Feasibility Analysis, Nuclear Energy, Nuclear Fusion, Nuclear Physics, Plasma Heating, Plasma Physics, Radiation Damage, Relativistic Particles.

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3.

Authors:	**Ram Prasad Verma, Manish Verma, Arvind Dewangan**
Paper Title:	**Thrust Bearing Governed Clinker Extraction System in Producer Gas Plant**

Abstract: In the process of Producer Gas Production; clinker/ash is formed as a waste material. This clinker is removed by equipment named as Ash Bowl which rotates on the "Guide Roller" by the application of hydraulic pressure. This process having many problems like formation of large size clinker which require excess hydraulic pressure, guide roller is unable to scatter the hydraulic pressure equally in all the direction on the ash bowl to crush the clinker, more hydraulic pressure is required for the movement of the ash bowl, more time is required to replace the guide roller for its maintenance.

In order to eliminate above mention problems, guide roller has been replaced by the thrust bearing which improves productivity by reducing break down time, reducing total man power required & reducing maintenance cost.

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Keywords:

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4.

Authors:	**P. D. Sahare and Vipin Kumar**
Paper Title:	**Optical and Magnetic Properties of Cu-Doped ZnO Nanoparticles**

Abstract: Effect of Cu^{2+} ions doping on the photoluminescence (PL) and magnetic behavior of ZnO based host material nanoparticles have been investigated. A simple chemical route has been employed for the synthesis of Cu^{2+} incorporated ZnO nanoparticles for the present study. The prepared synergetic nanoparticles were analyzed for structural confirmation under X-ray diffraction (XRD) and Raman spectroscopic investigations. XRD patterns of the prepared nanoparticles of different Cu^{2+} concentrations reveal some shifting in the peak positions compared to that of the pure ZnO, which is attributed to the structural deformation in the presence of Cu^{2+} ions. Furthermore, transmission electron microscopy (TEM) studies have been performed for studying their morphology. TEM studies clearly show the formation of spherical and quasi spherical shaped nanoparticles of ~ 50 nm diameters. It is revealed from PL studies that the band-edge/UV emission decreases, whereas, the visible emission is found to increase with increase of the doping concentration. The decrease in the band-edge emission can be attributed to the substitution of Zn^{2+} by Cu^{2+} ions in the ZnO lattice. Beside, these optical properties, magnetic properties of ZnO nanoparticles has also been found to be affected by Cu doping, investigated using vibrating sample magnetometer (VSM). It has been observed from VSM study that the ferromagnetic behaviour of ZnO nanoparticles is found to enhance with increase in doping concentration.

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Keywords: ZnO nanoparticles; Cu^{2+} doping; Photoluminescence; Magnetic properties; M-H loops; Surface defects.

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5.

Authors: **Tiruveedula Gopi Krishna, Mohamed Abdeldaiem Abdelhadi, Sabahaldin A.Hussain**

Paper Title: **Towards OLAP - Based Data Mining Using Multidimensional Database and Fuzzy Decision Trees**

Abstract: In this paper, a new approach for data mining is described, coupling fuzzy multi-dimensional databases and fuzzy data mining systems, and achieving knowledge discovery from imperfect data. An architecture based on fuzzy multidimensional databases is given. It uses these kinds of data repositories to extract relevant knowledge from large data sets from the real world. According to several works that highlighted the great interest of the OLAP framework in the knowledge discovery process, this approach enhances the existing solutions. It provides a way to

deal with data from the real world, and to apply flexible operations on data sets stored as multidimensional arrays, generating more understandable fuzzy rules. In recent works an extension of multidimensional database has been defined in order to handle imperfect information and flexible multidimensional queries.

Keywords: Olap, Fuzzy Rules, Multidimensional Database, Data Mining

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6.	**Authors:**	**Agnes Jacob, P. Mythili**
	Paper Title:	**An Improved Hindi Speech Emotion Recognition System**

Abstract: This paper presents the results of investigations in speech emotion recognition in Hindi, using only the first four formants and their bandwidths. This research work was done on female speech data base of nearly 1600 utterances comprising neutral, happiness, surprise, anger, sadness, fear and disgust as the elicited emotions. The best of the statistically preprocessed formant and bandwidth features were first identified by the KMeans, K nearest Neighbour and Naive Bayes classification of individual features. This was followed by artificial neural network classification based on the combination of the best formants and bandwidths. The highest overall emotion recognition accuracy obtained by the ANN method was 97.14%, based on the first four values of formants and bandwidths. A striking increase in the recognition accuracy was observed when the number of emotion classes was reduced from seven. The obtained results presented in this paper, have not been reported so far for Hindi, using the proposed spectral features as well as with the adopted preprocessing and classification methods.

Keywords: Formant, Emotion, KMeans, K nearest Neighbour, Naive Bayes, Artificial neural network.

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7.	**Authors:**	**B. Rajneesh Kumar, S. Ranganatha**
	Paper Title:	**A Study of Stiffness and Damping Characteristics of Conventional Fluid and Smart Fluid Applied to Squeeze Film Damper**

Abstract: Turbo machinery and other high speed engines play a vital role in industries worldwide. These high speed engines received considerable attention from the scientific and industrial community in order to extract better performance and higher reliability. Due to competitiveness and rapid technological advancement, the dynamic behavior of these machines is greatly dependent on the fluid film bearings. These fluid film bearings are used for its long life, low power consumption and versatile dynamic behavior. Despite of significant advancement in lubrication technology and advent of meticulous design procedures, bearings do fail in operation. Accordingly tribologists and practicing lubrication experts around the world are nowadays involved in design of general bearing system using entirely a design approach based on electrorheological fluids instead of conventional fluids to suit the requirement of high speed and heavy load operation. Smart fluid technology is an emerging field of research that leads to the

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	introduction of Electro-rheological (ER) fluids.ER fluids are such smart materials whose rheological properties (viscosity, yield stress, shear modulus etc.) can be readily controlled upon external electric field which cannot be carried out in case of conventional fluids. This paper presents a comparative study of stiffness and damping characteristics of conventional fluids (damper oil) and electro rheological fluids (functional fluids) of external damper becomes a essential part of analysis. Calculations are carried out for different parameters like clearances, oil film thickness, fluid film width, different eccentric ratios etc. Thus the use of electro-rheological fluids introduces a new philosophy on the fact that the stiffness and damping can be changed by applying high electric field and thus minimizing the vibration of the structure during normal operation. This reduces the amplitude considerable and safe operation for high accuracy and efficiency. **Keywords:** High speed engines, fluid film bearings, conventional fluids, electro-rheological fluids, stiffness and damping, vibration. **References:** 1. Luis San Andres, Oscar de Santiago, "Forced response of a squeeze film damper and identification of force co-efficient from large orbital motions", transactions of the ASME, 126, pp. 292. 2. E.J.Gunter, "Design Of Nonlinear Squeeze Film Dampers For Aircraft Engines", Journal of Lubrication Technology, 99, Pp.57-64, 1977. 3. Fulei Chu, Roy Holmes, "The damping capacity of the squeeze film damper in suppressing vibration of a rotating assembly", tribology international, 33, pp. 81-97, 2000. 4. Jianjum Li, Dewen Jin, Xiaoning Zhang, Jichuan Zhang, and William.A, Gruver , "An Electrorheological Fluid Film Damper For Robots ", IEEE international conference on robotics and automation, 33, pp. 2631-2636, 1995. 5. Jonathan Krimm, Nicholas Szczerba , "Electro Rheological Fluid", Conference Session B2, Pp. 1-8, April 14,2007. 6. C. Carmignani., P.Forte, "Active Squeeze Film Dampers In Rotor Dynamics", AIMETA International Tribology Conference 1, Aquilia, September,20-22, 2000 7. S. Danaila and L Moraru "On the validity of classical hydrodynamic lubrication theory applied to squeeze film dampers", 25th IAHR Symposium on Hydraulic Machinery and Systems, pg.1-8, 2010. 8. Lucien Johnston, Dorothea Adams, Fluidicon GmbH, Darmstadt," Adaptive Components in Transport Technologies – new", Adaptronic Congress 2007, 23 - 24 May, Göttingen 9. Zamm.Z, angew, Butz.T , Von Stryk, "Modeling And Simulation Of Electro And Magneto Rheological Fluid Dampers", math. mech 78,pp.1-22,78,1998. 10. E.Switonski, A.Mezyk, W.Klein, "Application of Smart Materials In Vibration Control Systems", Journal of AMME, 24, pp .291-296. 11. JanuszGoldasz, Bogdan Sapinski," Non dimensional characterization of flow mode magnetorheological/ electrorheological fluid dampers ", journal of intelligent material system and structures September 2012 vol 23 no 14 1545-1562. 12. J.SharanaBasavaraja, S.C. Jain, Satish. C.Sharma, "A Study of Smart Fluid Lubricated Non-Recessed Hybrid Journal Bearing", International Conference On Smart Materials Structures And Systems, July 24-26,2008,Bangalore, India 13. J.A.Tichy "Measurement of squeeze film bearing forces and pressures, including the effects of fluid inertia [ALSE Trans]" page. 520- 526, vol [28] year [1984].	
8.	**Authors:** **Amanjeet Kaur, Anuj Gupta** **Paper Title:** **An Analytical Study of the QOS Parameters of Routing of Protocols in a Wireless Sensor Network** **Abstract:** Wireless Sensor Network is a field where a lot of protocols are working already for the better optimization of the Wireless Network. The performance analysis is done on the basis of few parameters all together called Quality of service. This paper focuses on the analysis and understanding of the quality of service parameters and a brief description of the GA routing protocols to be used in this extension. This paper also focuses on the brief service review of the genetic algorithm based on the kind of services they can provide. **Keywords:** Genetic Algorithm, Protocols, Quality of Service, Routing Wireless Senor Network. **References:** 1. Ali Chamam, and Samuel Pierre,"On the Planning of Wireless Sensor Networks: Energy-Efficient Clustering under the Joint Routing and Coverage Constraint", IEEE TRANSACTIONS ON MOBILE COMPUTING, VOL. 8, NO. 8, august 2009. 2. Jihene Rezgui, Abdelhakim Hafid and Michel Gendreau, "Distribute Admission Control in Mesh Network: Models, Algorithms, and Evaluation", IEEE transaction on vehicular technology, vol.59, no.3, march 2010 3. Gordon l.Stuber, Johan Barry, "Broadband MIMO-OFDM Wireless Communications". 4. Ming Jiang, and Lajos Hanzo, "Multiuser MIMO-OFDM for Next-Generation Wireless Systems", Proceedings of the IEEE | Vol. 95, No. 7, July 2007 5. Giuseppe Campobello1, Alessandro Leonardi and Sergio Palazzo, "Energy saving and Reliability in Wireless Sensor Networks Using a CRT-based Packet Splitting Algorithm", in 2002. 6. Giuseppe Anastasi, Marco Conti and Mario Di Francesco, "Energy Conservation in Wireless Sensor Networks: a Survey" ,University of Pisa, Italy National Research Council (CNR), Italy. 7. Dr. Jayakumari.J, " MIMO-OFDM for 4G Wireless Systems", International Journal of Engineering Science and Technology Vol. 2(7), 2010, 2886-2889. 8. A.Sharmila and Srigitha S.Nath, " Performance of MIMO Multi -Carrier CDMA with BPSK Modulation in Rayleigh Channel", International Conference and control Engineering (ICCCE 2012),12 & 13 April,2012. 9. Lizhong Zheng, David N. C. Tse , "Diversity and Multiplexing: A Fundamental Tradeoff in Multiple-Antenna Channels" "IEEE transactions on information theory, vol. 49, no. 5, may 2003"	**35-37**
9.	**Authors:** **Mitali** **Paper Title:** **An Analytical Review on the Techniques Opted ForThe Detection of Cloning In Spread Sheets** **Abstract:** Spreadsheets are widely used in industry: it is estimated that end-user programmers outnumber programmers by a facto . However, spreadsheets are error-prone, numerous companies have lost money because of spreadsheet errors. One of the causes for spreadsheet problems is the prevalence of copy-pasting. This paper focuses on the methods of identifying data clone in spread sheets and their efficiency. The paper also presents suitable algorithms for data cloning in the data mining region.	**38-39**

Keywords: Data Clone, Data Mining , Fatal Errors, Spread Sheets.

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Authors:	**Biswajit Nayak, Mitali Madhusmita, Debendra Kumar Sahu, Rajendra Kumar Behera, Kamalakanta Shaw**
Paper Title:	**Speaker Dependent Emotion Recognition from Speech**

Abstract: The speech signal is the fastest and the most natural method of communication between humans. Hence speech can use for fast and efficient way of interaction between human and machine. Speech is attractive and effective medium due to its several features expressing attitude and emotions through speech is possible. In human machine interaction automatic speech emotion recognition is so far challenging but important task which paid close attention in current research area. In this paper we have analysed emotion recognition performance on eight different speakers. IITKGP-SEHSC emotional speech database used for emotions recognition. The emotions used in this study are anger, fear, happy, neutral, sarcastic, and surprise. The classifications were carried out using Gaussian Mixture Model (GMM). Mel Frequency Cepstral Coefficients (MFCCs) features are used for identifying the emotions. It can be observed that, the percentage of accuracy is 75.00% for 32 centered GMM, 72.00% for 16 centered GMM and 66.67% for 8 centered GMM.

Keywords: Emotion Recognition, Gaussian Mixture Model (GMM), Male-scale Frequency Cepstral Coefficient (MFCC), IITKGP-SEHSC (Indian Institute of Technology Kharagpur Simulated Hindi Emotional Speech Corpus).

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11.

Authors:	**Renuga Devi. R, Hemalatha. M**
Paper Title:	**A Novel Algorithm for Automatically Detecting Number of Clusters for Mining Communities in Heterogeneous Social Networks**

Abstract: Social media have attracted millions of user's attention in recent years. In a distributed social network a community mining is one of the major research areas. Mining of network communities is a major problem now a day. This problem should be avoided. Several methods were proposed, but most of the methods of community mining consider the homogeneous network. But in distributed network there are multiple networks are interconnected with each other which are known as heterogeneous networks. Each network represents a specific kind of relationship. Same time each relationship plays an important place in a distinct situation. Mining of such an important community in a distributed environment is a difficult task. To overcome the above mentioned problem, this paper presents a novel Convergence aware Dirichlet Process Mixture Model (CADPM) for automatically mining the network communities in heterogeneous networks. The earlier Dirichlet Process (DP) mixture model is unsuitable in some situation. The number of clusters for community mining is unknown in prior. So the CADPM is proposed to handle the large number of data-cases.

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Keywords: Community, Dirichlet Process, Heterogeneous Network, Hidden Communities, Social Network.

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	Authors:	**Jingqing Zhang, Rui Hu, Jian Wang, Jinshan Li**
	Paper Title:	**Secondary M6C Precipitation in Ni-20Cr-18W-1Mo Superalloy**

12.

Abstract: The carbide precipitation behavior in Ni-20Cr-18W-1Mo superalloy solution treated at 1280 oC and then aged at 800 and 1000 oC has been investigated using SEM, EDS and TEM in the present work. Since the content of W and Mo is high enough (>6-8 wt.%) and the value of proportion (Cr at.% /(Cr+Mo+0.7W) at.%) is 0.8206, satisfying the condition for the formation of secondary M6C, it is granular and W-rich M6C as secondary phase instead of lamellar and Cr-rich M23C6 that precipitates at grain boundaries when the aging temperature is not lower than 1000 oC. The precipitation of secondary M6C is suggested through a direct reaction between the metal elements and carbon atoms mechanism, in which the decomposition of primary M6C carbide provides the necessary elements. M is mainly W element with modest level of Ni, Cr and Mo. The result provides a foundation for improving the mechanical property of the alloy.

Keywords: Ni-20Cr-18W-1Mo superalloy, carbide, secondary M6C, grain boundary

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13.

Authors: **Yahia Raad Abbas Alani, V.C. Agarwal**

Paper Title: **Nonlinear Finite Element Study on the Circular Concrete Filled Steel Tubular Columns**

Abstract: The present study is an attempt to understand the behavior of this type of columns . In this research modeling of 11 circular cross-section model of the columns , these models are taken from pre - publication research , the models been simulated nonlinearly by the finite element method , with the help of the ANSYS software. models has been loaded in a concentric axial compression way, the failure loads were extracted , and has been compared to the results obtained from the experimental data. It been found from the nonlinear modeling by ANSYS program a significant influence of the proportion of the D/t on the axial load capacity of the concrete filled steel tubular , where concluded that the axial load capacity of the columns Increases significantly when lowering the value of the of D/t under the value 47 , but when increasing the value of the D/t over 47 the axial load capacity of the columns increases in small rates.

All the specimens been simulated had the length to diameter ratio (L/D) not exceeding the value of 4.5 to act as a short column, and , therefore, no slenderness effect would be taken in account .

Keywords: Concrete-filled steel tubesComposite columns, Nonlinear analysis , Strength , finite element analysis , ANSYS software.

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Authors:	**Junaid Kameran Ahmed, V.C. Agarwal, P.Pal, Vikas Srivastav**
Paper Title:	**Static and Dynamic Analysis of Composite Laminated Plate**

Abstract: This work presents a static and dynamic analysis of Graphite /Epoxy composite plates. In the present work the behavior of laminated composite plates under transverse loading using an eight-node diso-parametric quadratic element based on First Order Shear Deformation Theory was studied, the element has six degrees of freedom at each node: translations in the nodal x, y, and z directions and rotations about the nodal x, y, and z axes . The static analysis includes the parametric studies on laminated plates to estimate the maximum deflection. The parametric study represented by variation in (aspect ratio, layer orientation, layer number, dimension of the plate and mesh size). The modeling of the plates was done by using ANSYS 12.0, and the results were compared with Finite Element Method code.The dynamic part of this study represented by evaluating the natural frequency of the plates. The boundary conditions considered in static and dynamic study, are simply supported and clamped boundary condition. In this study investigations were carried out on both square and rectangular composite laminated plates. The study start with isotropic plate of mild steel, and followed with orthotropic plate of Graphite/Epoxy composite .The results obtained from ANSYS program as well as Finite Element Method code, show a good agreement with the experimental results. The minimum deflection was found at an angle of 15 degree for clamped plate, and in case of simply supported plate the minimum deflection was found for angle 45 degree. It is also observed that the deflection for clamped boundary condition is less than in simply supported boundary condition for both isotropic and orthotropic plates. In isotropic plate the deflection in clamped plate is about 50% of simply supported. And for orthotropic plate the deflection for clamped is about (25 to 30)% of simply supported.

Keywords: Composite (Graphite/Epoxy) laminated plate, rectangular and square plate, Isotropic plate, Orthotropic plate, Free vibration (Natural frequency).

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Authors:	**P.V. Hareesh Kumar**
Paper Title:	**The Sound Channel Characteristics in the South Central Bay of Bengal**

Abstract: Environmental data collected along 92.5^{o}E between 2.7^{o}N and 12.77^{o}N during late winter show a permanent sound velocity maximum around 75 m and an intermediate minimum between 1350 m and 1750 m. The axis of the deep sound channel is noticed around 1700 m. The shallower axial depth (~1350 m) between 7.5^{o}N and 10.5^{o}N coincides with the cyclonic eddy. Within the sonic layer (SLD), Eastern Dilute Water of Indo-Pacific origin and Bay of Bengal Watermass are present whereas its bottom coincides with the Arabian Sea Watermass. Sound speed gradient shows good relationship with temperature gradient (correlation coefficient of 0.87) than with salinity gradient. A critical frequency of 500 Hz is required for the signal to be transmitted through a channel of 50 m thickness and it increases to ~1 kHz for a layer of 20 m. Within SLD, salinity there is 1.54 m/s increase in sound per 1 psu increase in salinity. In the thermocline, the sound speed decreases by 1.95 m/s per degree drop in temperature, whereas at deeper depths pressure effect dominates (@ 1.4 m/s per 100 m depth).

Keywords: Bay of Bengal, Sonic Layer Depth, SOFAR Channel, Critical frequency, Watermass.

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Authors: **V V S Vijaya Krishna, K Sai Krishna**

Paper Title: **Design and Verification of High Speed Multiplier**

Abstract: Multiplier is one of the essential element for all digital systems such as digital signal processors, microprocessors etc. In this paper, a new high speed multiplier using booth recoding technique is presented. This algorithm can be implemented by using the radix-8 booth recoding process. The proposed multiplier reduces the partial product array by almost 3/4th the size of the bits. This reduction increases the speed of the multiplier. The proposed method can be extended to any higher radix encodings, as well as to any size square and rectangular multipliers. The proposed multiplier is compared with the standard multiplier and two's complement multiplier using radix-4 MBE technique, demonstrated the good delay performance. These results show that the proposed multiplier is faster compared to other multipliers. The performance of the proposed multiplier is examined using verilog simulator in XILINX 12.4 version.

Keywords: Multiplication, radix-8 booth recoding, partial product array

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Authors: **M.Tej Kumar, S. Leela Lakshmi**

Paper Title: **Design and Implementation of Zigbee Protocol in Wireless Sensor Networks**

Abstract: Recently, there has been a growing demand to incorporate multimedia content delivery over the Wireless Sensor Networks (WSNs). This feature could not only enhance several existing applications in the commercial, industrial, and medical domains, but could also spur an array of new applications. However, the efficient gathering of still images, audio, and video information in WSNs imposes stringent requirements on the throughput and energy consumption. Most wireless communication standards with high or moderate data throughputs do not focus primarily on energy efficiency. The IEEE 802.15.4 WPAN standard provides a widely accepted solution for low-cost and low-power wireless communication, with a potential to cater to many types of application scenarios. To design a wireless interactive data acquisition and control system is a challenging part of any measurement, automation and control system applications. Advancement in technology is very well reflected and supported by changes in measurement and control instrumentation. Data acquisition and control system based on AVR microcontroller (Atmega168) is presented. This makes use of the built in ADC of the microcontroller and thus the resolution is 10 bits i.e. one part in 1024. . The controlling program on an arduino read this input at pre-decided time intervals. The controlling program reads these values and process accordingly. Microcontroller programs are also developed and tested successfully.

Keywords: WSNs, Zigbee, Data acquisition, Controlling, 802.15.4

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18.	**Authors:**	**K.Sambashivudu, Md.Javeed, R.Kiran**	
	Paper Title:	**Implementation of 2D Non-linear Morphological Image Processing on FPGA Based Architecture**	
	Abstract: Image processing requires high computational power and the ability to experiment with algorithms. Recently, reconfigurable hardware devices in the form of field programmable gate arrays (FPGAs) have been proposed as a way of obtaining high performance at an economical price. FPGA technology has become a viable target for the implementation of real time algorithms suited to video image processing applications. Morphing is a Technique used to transfer from one image to another. However, most morphological tools such MATLAB are not suited for strong real-time constraints. The unique architecture of the FPGA has allowed the technology to be used in many applications encompassing all aspects of video image processing. Among those algorithms, linear filtering based on a 2D convolution, and non - linear 2D morphological filters, represent a basic set of image operations for a number of applications. This paper reports on the design and realization of an FPGA based image processing for implementation of morphological image filtering using a FPGA NexysII, Xilinx Spartan 3E, with educational purposes. The system is connected to a USB port of a personal computer, which in that way form a powerful and low-cost design. The FPGA technologies offer basic digital blocks with flexible interconnections to achieve high speed digital hardware realization. The FPGA consists of a system of logic blocks, such as look up tables, gates, or flip-flops and some amount of memory. The image will be transferred from PC to FPGA board using UART serial communication/JTAG cable. After performing the required filtering/processing the result will be transferred back to computer. In PC both the results will be validated. A comparison between results obtained from MATLAB simulations and the described FPGA-based implementation is presented. **Keywords:** Morphology, Image processing algorithms, Field Programmable Gate Array (FPGA), filtering, Simulation. **References:** 1. K. T. Gribbon, D. G. Bailey and C. T. Johnston, "Design Patterns for Image Processing Algorithm Development on FPGAs", TENCON 2005, pp. 1-6, November 21-24, 2005. 2. A. Castillo, J. Vázquez, J. Ortegón y C. Rodriguez,"Prácticas de laboratorio Para estudiantes de ingeniería con FPGA", IEEE Latin America Transactions, Vol. 6, No.2, pp. 130-136, 2008. 3. Bruce A. Draper, J. Ross Beveridge, A.P. Willem Böhm, Charles Ross, Monica Chaw the, "Accelerated Image Processing on FPGAs", IEEE Transactions on Image Processing, Vol. 12, No. 12. Pp. 1543-1551, 2003. 4. D.G. Bariamis, D.K. Iakovidis, D.E. Maroulis, S. A. 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19.	**Authors:**	**Cezarina Adina TOFAN**	
	Paper Title:	**Quality Management through Computer Simulation**	
	Abstract: The development of CAD technique (Computer Aided Design) and CAE (Computer Aided Engineering) creates new possibilities for an important integration of reiability from the projection process of stamps and dies. **Keywords:** Reliability, CAD technique, quality	**77-79**
20.	**Authors:**	**K. Raja Kumari, S. Leela Lakshmi**	
	Paper Title:	**Comparison of Power Consumption in Array Multiplier with and without SVL Circuit**	
	Abstract: In this paper, we performed the comparative analysis of power consumption of array multiplier circuit implemented with two adder modules and Self Adjustable Voltage level circuit (SVL). The adder modules chosen were 10 transistor- Static Energy Recovery CMOS adder and 8 transistor CMOS (SERF) circuits. At first, the circuit was simulated with adder modules without applying the SVL circuit. And secondly, SVL circuit was incorporated in	**80-83**

the adder modules for simulation. In the multiplier architecture chosen, less power consumption was observed being consumed by the SERF adder based multipliers applied with SVL circuit.

Keywords: 10 Transistor SERF Adder, 8 transistor adder, SVL Circuit.

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21.

Authors: **Anchal Kaytal, Amanpreet Kaur**

Paper Title: **A Quantitative Study of the Automatic Speech Recognition Technique**

Abstract: In the last two decades, few researchers have worked for the development of Automatic Speech Recognition Systems for most of these languages in such a way that development of this technology can reach at par with the research work which has been done and is being done for the different languages in the rest of the world. Punjabi is the 10th most widely spoken language in the world for which no considerable work has been done in this area of automatic speech recognition. Being a member of Indo-Aryan languages family and a language rich in literature, Punjabi language deserves attention in this highly growing field of Automatic speech recognition. The Speech is most prominent & primary mode of Communication among of human being. Today, speech technologies are commercially available for an unlimited but interesting range of tasks. These technologies enable machines to respond correctly and reliably to human voices, and provide useful and valuable services.

Keywords: ASR, Punjabi Speech Recognition, Recognition Techniques

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22.

Authors: M. Jahnavi, P. S. Indrani, M. J. C. Prasad

Paper Title: Implementation of Concurrent Online MBIST for RFID Memories using March SS Algorithm

Abstract: This paper presents the implementation of online test scheme for RFID memories based on Memory Built in Self Test (MBIST) architecture. This paper also presents the, Symmetric transparent version of March SS algorithm, implementation of Memory BIST. The comparison between the different march algorithms and the advantage of the March SS algorithm over all other is also presented. The solution was implemented using Verilog HDL and was, in turn, verified on Xilinx ISE 13.2 simulator, and synthesized.

Keywords: Memory testing, RFID memories, Transponder

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3. Said Hamdioui1;2 Ad J. van de Goor2 Mike Rodger "March SS: A Test for All Static Simple RAM Faults" Proceedings of the 2002 IEEE International Workshop on Memory Technology, Design and Testing (MTDT 2002)
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23.

Authors: Vaishali, Vivek Kumar

Paper Title: Analysis of Electric Field Strength and Magnetic Field Strength in the Vicinity of Cellular Base Trans-receive Station

Abstract: Today, for the present world generation cell phone is the essential and necessary handheld device. Within few years, the number of mobile users increases drastically. Due to the increase of the number of mobile users, the number of BTS towers also increases. These towers emit electromagnetic radiation which is highly dependable upon their radiated power. This paper investigates about the amount of electromagnetic field emits by the tower and compare that values with the guidelines and limits that are to be set by International Commission on Non Ionized Radiation Protection (ICNIRP).

Keywords: Specific Absorption Rate (SAR), Dosimety, Maximum Permissible Exposure (MPE), Radio Frequency (RF) wave, ICNIRP, Electromagnetic Field (EMF).

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24.

Authors: Abdolhamid Sohrabi,AzimRezaei Motlagh, Majid Tavakoli, Amir Rezaei Motlagh

Paper Title: Current Follower Trans conductance AmplifiersCurrent-Mode Multiplier Circuit

Abstract: Multiplier-divider circuits is using in digital signal processing base on neural networks and communications (amplifiers with variable gain, modulators, detectors and,…).In this paper, the design of a simple analog current modemultiplier/divider circuit using only two current followertrans conductance amplifiers (CFTAs) is presented. With theselection of the applied input currents, the proposed circuit canperform four-quadrant current multiplication, division andcurrent-controlled current amplification, all from the samecircuit configuration. The circuit is also insensitive to ambienttemperature variations. Additionally, the CFTA non-idealityeffects and the non-ideal gain and parasitic component effects onthe proposed circuit are studied. The performances of therealized circuit are examined by PSPICE simulations.

Keywords: Analog signal processing, CFTA, multiplier, reconfigurable circuits.

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25.

Authors: **Jothi K R, Dr. Ebenezer Jeyakumar A**

Paper Title: **A Survey on Broadcasting Protocols in VANETs**

Abstract: Vehicular Ad-Hoc Networks [VANET] is one of the fastest emerging technologies for research as there are many issues and challenges to be addressed by the researchers before the technology becomes commercialized. The challenges in VANET are, designing suitable routing protocols appropriate to the traffic model, providing security of the data and emergency messages, avoiding the collision of messages, avoiding flooding of messages, etc. The progress of research in the field of VANET promises to deliver a robust, safety, efficient and intelligent transportation in the future. This paper gives the review of various Rebroadcasting policies in VANETs. The reason for analyzing the broadcasting protocols is that, in most of the emergency situations, there is less time to make a handshake with other nodes in the networks, as the emergency message is to be delivered fast and efficient. Therefore broadcast based routing protocol plays a major role in almost all the safety applications. A detailed understanding of the existing protocol is needed before contributing new protocol for the upcoming research field.

Keywords: VANET, Broadcasting, Intelligent Transportation.

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26.

Authors: **Milan Motta, Shadab Imam**

Paper Title: **Modelling and Flexibility Analysis of Hydro Cracker Unit**

Abstract: Hydro cracking is an extremely versatile catalytic process in which feed stock ranging from Naphtha to

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Vacuum Residue can be processed in presence of Hydrogen and catalyst to produce almost any desired products lighter than the feed. Primary function of Hydrocracker unit (HCU) is to maximize middle distillate production. First stage feed heater is a twin cell cabin heater with horizontal radiant tubes supported through 3 nos ladder type coil supports. Radiant Coil vibration was observed in tubes some remedial measures pertaining to mechanical aspects were studied and implemented. However, a need of comprehensive study to identify and minimize the coil vibration problem was felt to ensure reliable operation of the heater. In this work, Flexibility analysis of Heater Radiant Coil by modeling applied end conditions and various temperature cases was performed to verify the mechanical design and to understand the probable reasons of coil lifting. Fatigue analysis of the vibrating coil with maximum stress amplitude obtained by Flexibility analysis was performed. The maximum possible slug forces was calculated and dynamic analysis of reactor inlet piping along with heater coils was carried out to check whether slug, if any, has any impact. Maximum tube metal temperature for a definite span of operation was estimated. Purpose of this work is carried to identify the probable reasons of heater radiation tube lifting and vibration and to suggest remedial measures to continue safe operation of the heater. Heater tubes have a life of definite span which is directly related to the operating tube metal temperature. Due to furnace running on high tube metal temperature, rupture design study was also carried out for remaining life assessment of the tube. Based on the flexibility analysis of radiant tubes and maximum tube metal temperature calculation, heater operation could be sustained safely without unit interruption due to heater

Keywords: Fired Heater, Hydro Cracking, Tube Lifting, CAESAR Analysis

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27.

Authors:	**Hoda Ghasemieh, Fatemeh Panahi*, Mohsen Mohseni Saravi, Maryam Daghestani**
Paper Title:	**The Effect of Clear Cutting on Runoff Height (Case Study: Noshahr, Iran)**

Abstract: Cut and exploitation methods used in forest trees affect hydrologic properties. In this study, clear cutting effects on runoff rate is performed in a 2100 m2 area and a similar plot is selected beside it as a control plot. Then the rate of runoff was measured during two consequent years within different temporal stages. Mann-Whitney tests were used for the comparison of two groups which was significant and non-significant in the first and second years, respectively. The results of correlation test also showed that the height of runoff in cut plot is higher than the control plot. In the second year, the rate of runoff in cut plot became closer to the rate in control plot because of herbal plants growth so the results were not significant while in the first year, the rate of runoff increased because of plant cover remove.

Keywords: Runoff, Clear cutting, Curve Number, Asympthotic method

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28.

Authors:	**R.Lokeshkumar, M.Shanmugapriya, P.Sengottuvelan**
Paper Title:	**A Novel Approach for Query Suggestions for Personalizing the Web**

Abstract: Web recommender systems predict the needs of web users and provide them with recommendations to personalize their pages. Such systems had been expected to have a bright future, especially in ecommerce and E-learning environments. However, although they have been intensively explored in the Web Mining and Machine learning fields, and there have been some commercialized systems, the quality of the recommendation and the user satisfaction of such systems are still not conclusive. In this paper we proposed a more robust approach that leverages

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search query logs for automatically identifying query groups for a number of different users and record the query logs and their respective sessions. The system uses query reformulation and click graphs which contain useful information on user behavior when searching online. Such information can be used effectively for the task of organizing user search histories into query groups. The proposed technique finds value in combining with keyword semantic similarity and filtering which applies knowledge gained from these query groups in various applications such as providing query suggestions for web personalization by favoring the ranking of search results.

Keywords: Web Mining, Collaborative filtering, Personalization, Ranking pages, recommended systems.

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