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Technical Advisory Board

1.

Authors: Naveen Kumar Sarva, U. Nageswara Rao, D. Ramesh, D. Harihara Santosh

Paper Title: Design of Low Power SRAM Architecture with Isolated Read and Write Operations at Deep Submicron CMOS Technology

Abstract: Low power VLSI design has become the major challenge of chip designs as leakage power has been rising with scaling of technologies. In deep submicron technologies, leakage power becomes a key for a low power design due to its ever increasing proportion in chip's total power consumption. Motivated by emerging battery-operated application on one hand and shrinking technology of deep sub micron on the other hand, leakage power dissipation is playing a significant role in the total power dissipation as threshold voltage becomes low. Here we proposed Novel SRAM architecture called IP-SRAM with separate write sub-cell and read sub-cell. In this paper we designed the total 8 bit SRAM architecture with newly proposed techniques and compare this one with conventional SRAM architecture and we observed that the total power consumption is reduced. Here the total architecture was designed with 180nm technology.

Keywords: IP-SRAM, Deep Submicron Technology, Sub Threshold Leakage Power.

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2.

Authors: Vijay Kumar Verma, Kanak Saxena

Paper Title: Mining Regular Pattern Over Dynamic Data Stream Using Bit Stream Sequence

Abstract: In recent years, data streams have become an increasingly important area of research for the computer science, database and data mining communities. Data streams are ordered and potentially unbounded sequences of data points created by a typically nonstationary generation process. Common data mining tasks associated with data streams include clustering, classification and frequent pattern mining[1]. Recently, temporal regularity in occurrence behavior of a pattern was treated as an emerging area in several applications

A pattern is said to be regular in a data stream, if its occurrence behavior is not more than the user given regularity threshold. Although there has been some efforts done in finding regular patterns over stream data. In this paper we develop a new method called Mining regular Pattern using Bit Stream Sequence with sliding window to generate the complete set of regular pattern over a data stream at a user given regularity threshold. Experimental results show that highly efficiency in terms of execution and memory consumption and also in number of candidate scan

Keywords: Data mining, Data stream, pattern mining, regular pattern, temporal regularity. Sliding window

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3.

Authors: **Prachi Yadav, Nisheet Soni**

Paper Title: **Distribution Automation – A Modern Perspective**

Abstract: Advanced Distribution Automation (ADA) is a term coined by the IntelliGrid project in North America to describe the extension of intelligent control over electrical power grid functions to the distribution level and beyond. It is related to distribution automation that can be enabled via the smart grid. The electrical power grid is typically separated logically into transmission systems and distribution systems. Electric power transmission systems typically operate above 110kV, whereas Electricity distribution systems operate at lower voltages. Normally, electric utilities with SCADA systems have extensive control over transmission-level equipment, and increasing control over distribution-level equipment via distribution automation. However, they often are unable to control smaller entities such as Distributed energy resources (DERs), buildings, and homes.

Keywords: CAN (Control Area Network), GUI (Graphical User Interface), DAS (Distribution Automation System), MATLAB, Vehicular Network Toolbox (VNT)

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4.

Authors: **Gajendra Singh Solanki, Rekha Agarwal, Sandhya Sharma**

Paper Title: **Power Optimization of High Speed Pipelined 8B/10B Encoder**

Abstract: In this paper a modified 8B/10B Encoder is designed. Power consumption of 8B/10B encoder is reduced by deactivating unwanted switching of the clock. The clock signals are great source of power dissipation. Clock signal is not use to perform any digital computation. it is mainly used for synchronization of sequential circuits. Hence clock signal don't carry any information. So, clock-gating techniques can be used to save power by reducing unnecessary clock activities inside the gate module.

Keywords: Clock gating, Pipelining, 8B/10B Encoder

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5.

Authors: **Tapas Ranjan Baitharu, Subhendu Kumar Pani**

Paper Title: **A Survey on Application of Machine Learning Algorithms on Data Mining**

Abstract: In the context of data mining the feature size is very large and it is believed that it needs a bigger population. Hence, this translates directly into higher computational load.Data and information have become major

assets for most of the organizations. The success of any organisation depends largely on the extent to which the data acquired from business operations is utilized. classification is an important task in KDD (knowledge discovery in databases) process. It has several potential applications. The primary objective of this paper is to review the data mining and study of machine learning algorithm .The performance of classifiers is strongly dependent on the data set used for learning

Keywords: Data Mining,Machine learning Algorithm, Knowledge Discovery Databases.

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6.

Authors: Nitin Singh, Raghuvir S. Tomar

Paper Title: Design of a Low-Cost Contact-Less Digital Tachometer with Added Wireless Feature

Abstract: This paper proposes a hardware design of an "Digital Contact-less Tachometer" based on IR sensor for measuring the Revolutions Per Minute (RPM) of a rotating object. Conventional tachometers require direct contact with the rotating object which may affect its RPM and thus affecting the accuracy of the tachometer. This Tachometer design allows the measurement of the RPM without any direct contact with the rotating object. For more stable and accurate results a new algorithm is also proposed in this paper which allows the results to be displayed within a second. The design is also capable of sending RF signals which allows one to send the measured values to a distant place for its further processing. The RF feature also facilitates the data logging for monitoring and controlling the varying values of the RPM. The circuit design is simple, cheap and provide reliable results. Its stability and reliability has been verified through experiments.

Keywords: IR sensors; Opto-coupler; RPM; Tachometer; Rotating object.

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7.

Authors: Anuradha S. Kherde, Pritesh R. Gumble

Paper Title: An Efficient Design of R-2R Digital to Analog Converter with Better Performance Parameter in (90nm) 0.09-µm CMOS Process

Abstract: CMOS technology favors digital circuitry but imposes a challenge to the analog designer faced with limitations such as process gradients and random device variations. With increasing complexity comes an increase in the number of devices in a system, and hence, an increase in the die size required for that system. As the die space available becomes more and more critical, the need to optimize each function in the system for area consumption. The DAC is optimized for large integrated circuit systems where possibly dozens of such DAC would be employed for the purpose of digitally controlled analog circuit calibration. An R-2R Ladder is a simple and inexpensive way to perform digital – to – analog conversion by using repetitive arrangements of precision resistor networks in a ladder-like configuration. The application of Microwind 3.1 for realizing R2R DAC bridges the gap between theory and the real circuit. This paper provides a detailed view of a 4 bit R2R ladder with optimum accuracy by using Microwind 3.1.This paper describes the design of a DAC which is of contemporary nature with reasonable speed, resolution and linearity with lower power, low area. This paper provides a detailed view of a 4 bit DAC with optimum accuracy by

	using Microwind 3.1. For all about Pre Layout simulation has been realized using 90 nm (0.09um) CMOS process Technology. **Keywords:** Digital-to-analog converters (DAC),R-2R, DNL, INL, etc. **References:** 1. Brandon Greenley, Raymond Veith, Dong-Young Chang, and Un-Ku Moon, A Low- Voltage 10-Bit CMOS DAC in 0.01-mm2 Die Area, IEEE TRANSACTIONS ON CIRCUIT AND SYSTEMS—II: EXPRESS BRIEFS, VOL. 52, NO. 5, MAY 2005 2. Ankit Upadhyay, Rajanikant M. Soni, 3-bit R-2R Digital to Analog Converter with Better INL&DNL, International Journal of Engineering and Advanced Technology (IJEAT) ISSN:2249 – 8958, Volume-2, Issue-3, February 2013	
8.	**Authors:** **HawrazKarim M. Amin, V.C. Agarwal, Omar Q. Aziz** **Paper Title:** **Effect of Opening Size and Location on the Shear Strength Behavior of R.C Deep Beams without Web Reinforcement** **Abstract:** This paper is carried out to study the effect of opening Sizes and Locations on the Shear strength behavior of reinforced concrete deep beams without web reinforcement, the opening size and location were main factors included in the present work, Variation of Parameters (l/d, a/d, fc and maximum size of aggregate) which affect the behavior of R.C deep beams are taken into account, a nonlinear analysis using the finite element method with (Ansys+CivilFEM) release 12.0 program was used to predict the ultimate Shear and mode of failure for reinforced concrete deep beams with openings, Materials nonlinearities due to cracking, crushing of concrete and yield conditions of the reinforcing steel are considered. The capabilities of the proposed model have been examined and demonstrated by analyzing available experimental eleven reinforced concrete deep beams without openings which showed a good agreement with difference for ultimate Shear a bout (6.4%), then after validation the program 99 models were created with square web openings having 3 sizes at 3 locations in each model to study their effect on the shear stress, (Ansys+CivilFEM) software was found completely efficient in handling such analysis and the proposed simulation of the material in the present study are capable of Predicting the behavior of reinforced concrete Deep Beams with Openings of Different Sizes and Locations, the results showed that location of openings has a large effect, where this effect is the largest when openings is provided at shear zone where sharp decrease in the ultimate Shear was observed and Mid-span location showed small effect and the ultimate Shear increases with decrease for the size of openings. The effect of parameters (l/d, a/d, fc, and maximum size of aggregate) are observed where changing l/d from 2.42 to 8.4 and (a/d) from 1 to 2.5 has high significant effect in decreasing the shear strength but increasing (a/d) from 1.5 to 2.25 for (l/d) of 4.61 and maximum size of aggregate from 9.5mm to 19mm has a very little effect while increasing the compressive strength of concrete increases the ultimate Shear Strength in different rates for varied opening locations and sizes. **Keywords:** deep beams, web opening effect, Shear strength behavior, (Ansys+CivilFEM) **References:** 1. ACI committee 318 (2008). "Building Code Requirements for Structural Concrete (ACI 318-08) and Commentary", American Concrete Institute, Detroit, U.S.A. 2. Amer M. Ibrahim, Mohammed Sh. Mahmood (2009). "Finite Element Modeling of Reinforced Concrete Beams Strengthened with FRP Laminates", College of engineering, Diyala University, Iraq. 3. ANSYS (2004). "ANSYS Help", Release 9.0. 4. 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9.	**Authors:** **Kondra Mohan Raju, E. Madhukar** **Paper Title:** **Classification of Users in Online Video Social Networks** **Abstract:** There are many online video social networks, in which Youtube is the most popular. These networks provide users to upload their own videos respect to a particular discussion. The feature provided by the networks gives the user to upload any kind of content. This creates polluted content into the system. For Example, Spammers may upload unrelated content as response to popular which increases the count of view. There is another kind of users called promoters, will gain visibility to a particular content by uploading many number of responses to increase	**39-40**

	the rank of the video. By promoting this, video will appear top in the list. This kind of activities may jeopardize the trust of the users, and social network may fail to provide genuine content. To avoid such kind of activities, we are coming up to detect the spammers and promoters. In our system we built a system same as youtube functionality having users with classification as legitimate, promoters and spammers. To distinguish between the users we allow for content and characterization attributes. These attributes can help in classifying user class. To classify the users we may use supervised classification theory. The theory is implemented on test collection. This approach successfully classified the majority of the prompters and some of the legitimate users misclassified. And most of the spammers detected form legitimate users as distinguishing is hard difficult. **Keywords:** social network, promoters, spammers, video sharing, classification. **References:** 1. Comscore: Americans viewed 12 billion videos online in may2008. http://www.comscore.com/press/release.asp?press=2324. 2. L. Gomes, J. Almeida, V. Almeida, and W. Meira. Workload models of spam and legitimate e-mails. Performance Evaluation, 64, 2007. 3. Thomason. Blog spam: A review. In Conference on Email and Anti-Spam (CEAS), 2007. 4. Castillo, D. Donato, A. Gionis, V. Murdock, and F. Silvestri. Know your neighbors: Web spam detection using the web topology. In Int'l ACM SIGIR, 2007. 5. Z. Gyöngyi, H. Garcia-Molina, and J. Pedersen. Combating web spam with trustrank. In Int'l. Conference on Very Large Data Bases (VLDB), 2004. 6. Y. Lin, H. Sundaram, Y. Chi, J. Tatemura, and B. Tseng. Detecting splogs via temporal dynamics using self-similarity analysis. ACM Transactions on the Web (TWeb), 2, 2008. 7. Y. Xie, F. Yu, K. Achan, R. Panigrahy, G. Hulten, and I. Osipkov. Spamming botnets: Signatures and characteristics. In ACM SIGCOMM, 2008. 8. P. Heymann, G. Koutrika, and H. Garcia-Molina. Fighting spam on social web sites: A survey of approaches and future challenges. IEEE Internet Computing, 11, 2007. 9. C. Wu, K. Cheng, Q. Zhu, and Y. Wu. Using visual features for anti-spam filtering. In IEEE Int'l Conference on Image Processing (ICIP), 2005. 10. Y. Ahn, S. Han, H. Kwak, S. Moon, and H. Jeong. Analysis of topological characteristics of huge online social networking services. In Int'l World Wide Web Conference (WWW), 2007.	
10.	**Authors:**	**Harish P, V.Venkateswarlu**
	Paper Title:	**Design and Motion Planning of Indoor Pipeline Inspection Robot**
	Abstract: This project deals with a design and motion planning algorithm of a caterpillar-based pipeline robot that can be used for inspection of 80–100-mm pipelines in an indoor pipeline environment. The robot system consists of a Robot body, a control system, a CMOS camera, an accelerometer, a temperature sensor, a ZigBee module. The robot module will be designed with the help of CAD tool. The control system consists of Atmega16 micro controller and Atmel studio IDE. The robot system uses a differential drive to steer the robot and spring loaded four-bar mechanisms to assure that the robot expands to have grip of the pipe walls. Unique features of this robot are the caterpillar wheel, the four-bar mechanism supports the well grip of wall, a simple and easy user interface. **Keywords:** Caterpillar wheel, Inspection robot, ZigBee, Atmega. **References:** 1. Young-Sik Kwon, and Byung-Ju Yi, "Design and Motion Planning of a Two-module collaborative Indore pipeline Inspection Robot", IEEE Transaction on Robotics, VOL 28, NO 3, JUNE 2012. 2. A. A. Transeth and K. Y. Pettersen, "Snake robot obstacle-aided loco-motion: modeling, simulations, and experiments," IEEE Trans. Robot., vol. 24, no. 1, pp. 88–104, Feb. 2008. 3. S. Hirose and H. Yamada, "Snake-like robots [Tutorial]," IEEE Robot.Autom., Mag., vol. 16, no. 1, pp. 88–98, Mar. 2009. 4. J. H. Lee, B.-J. Yi, S. R. Oh, and I. H. Suh, "Optimal design and de- velopment of a five-bar finger with redundant actuation," Mechatronics, vol. 11, no. 1, pp. 27–42, 2001. 5. T. Oya and T. Okada, "Development of a steerable, wheel-type, in-pipe robot and its path planning," Adv. Robot., vol. 19, no. 6, pp. 635–650,2005. 6. S. Hirose, H. Ohno, T. Mitsui, and K. Suyama, "Design of in-pipe inspec- tion vehicles for _25, _50, _150 pipes," in Proc. IEEE Int. Conf. Robot. Autom., 1999, pp. 2309–2314. 7. C. Jun, Z. Deng, and S. Y. Jiang, "Study of locomotion control character- istics for six wheels driven in-pipe robot," in Proc. IEEE Int. Conf. Robot., Biomimetics, 2004, pp. 119–124. 8. S. G. Roh and H. Choi, "Differential-drive in-pipe robot for moving inside urban gas pipelines," IEEE Trans. Robot., vol. 21, no. 1, pp. 1–17, Feb.2005. 9. T. Fukuda, H. Hosokai, and M. Uemura, "Rubber gas actuator driven by hydrogen storage alloy for in-pipe inspection mobile robot with flexible structure," in Proc. IEEE Int. Conf. Robot. Autom., 1989, pp. 1847–1852. A. M. Bertetto and M. Ruggiu, "In-pipe inch-worm pneumatic flexible robot," in Proc. IEEE/ASME Int. Conf. Adv. Intell. Mechatronics, 2001, vol. 2, pp. 1226–1231. 10. H. Lim, J. Y. Choi, Y. S. Kwon, E. J. Jung, and B.-J. YI, "SLAM in indoor pipelines with 15mm diameter," in Proc. IEEE Int. Conf. Robot. Autom., 2008, pp. 2616–1619.	**41-47**
11.	**Authors:**	**Chetan Patil, Channabasappa Baligar**
	Paper Title:	**Base Transceiver Station (BTS) Safety and Fault Management**
	Abstract: In mobile communication the Base Transceiver Station (BTS) site and the tower maintenance play an important role. In the present day scenario some problems are being faced in its maintenance. The major problems faced include the theft of wires, the fluctuation of temperatures, unauthenticated entry, fuel amount being unnoticed and the vendor and the technician's time management in case of any of the stated problems. In the project work BTS safety and fault management system the measures are taken to rectify these problems. The method makes use of GSM modem which gives the instant message about the each activity happening in the site. The temperature sensors will sense the temperature of the room and if it rises above the threshold value the GSM module will send the message to the master mobile which is already set in the system. The cell site Base Transceiver Station (BTS) which	**48-52**

are operated by Diesel generator can be controlled manually or can be put in automatic mode. In addition the site is under the surveillance of CCTV camera which turns ON automatically whenever the site door is opened as a safety measure. Door open/close controller is used for the automatic door opening and closing. The site door can be accessed only through the RFID authentication system. The situation in the site is updated to the technician through messages.

The method can greatly improve the BTS site operating efficiency, reduces the delay and fuel consumption. The project has better performance and involves less hardware complexity. The project gives a single comprehensive solution that remotely controls and monitors the subsystems inside each base station site and enables network operators to coordinate and manage the conditions at all base station sites across their network. This system does not demand any changes in the existing infrastructure but just adds more features to it.

Keywords: Automation, ARM, BTS, Mobile tower, Authentification.

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Authors:	**Ankush A.Mohod, Nilesh N.Kasat**
Paper Title:	**Optical Character Recognition of Printed Text in Devanagari Using Neuro - Fuzzy Integrated System**

Abstract: In this paper, we deal with the recognition of printed Devanagari characters using Neuro-fuzzy integrated system. The paper shows measurement of the effectiveness of classifier in terms of precision in recognition. An attempt is made to adopt Neuro-fuzzy integrated system for classification purpose. In this paper, we have considered sample test image and the characters in the test image are recognized relative to the database created by the user using Neuro-fuzzy integrated system.

Keywords: Character Recognition, Printed Devanagari text, Histogram, GLCM

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13.

Authors:	**Irshad C.K., Gymmy Joseph Kattoor, Abdul Malik K.V.**
Paper Title:	**Impact of the Proposed Cargo Port on the Traffic Characteristics of Ponnani Town and Abatement Measures**

Abstract: Traffic impact assessment is a powerful tool for engineers to determine the possible impacts of a project on the traffic and transportation infrastructure and to identify the road way improvements required to ensure that the road network will operate safely and efficiently for upcoming years. This study examines the impact that a cargo port at Ponnani would have on roadway travel and transportation infrastructure, both today and in the future, throughout the region and recommend abatement measures. The study will use a spread sheet based model to determine the number of road vehicles especially cargo trucks that would be added to the existing traffic flows as a result of the proposed cargo port. The assessment will be focused on the daily and peak hour traffic associated with the project after it will be commissioned on 2017. Specific travel demand forecasts for the Ponnani town would be assessed both for the existing traffic situation and for the traffic attracted due to the initiation of the cargo port.

Keywords: Traffic impact assessment, Cargo port, Cargo traffic.

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Authors: **Rashwinder Singh, Danvir Mandal**

Paper Title: **Comparison of Genetic Algorithm and Particle Swarm Optimization for Pattern Recovery in Failed Antenna Arrays**

Abstract: In an active antenna array, when a few radiating elements doesn’t work due to some problem. Then the entire radiation pattern gets distorted, mostly due to increased SLL. In this paper, Genetic Algorithm is implemented and compared with Particle Swarm Optimization for linear array synthesis for far field side lobe notch using amplitude only to get the desired radiation pattern with specified SLL. Genetic Algorithm gives optimal solution of the problem than PSO. Numerical results are presented to show the effectiveness of both optimization techniques.

Keywords: Array Antenna, beam pattern resynthesis,Transmitter/Receiver Module (TRM), failure compensation, Genetic Algorithm(GA),Particle Swarm Optimization (PSO), Beam Width First Null (BWFN) and Side Lobe Level (SLL).

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15.

Authors: **Nahro Radi Husein, V. C. Agarwal, Anupam Rawat**

Paper Title: **An Experimental Study on Using Lightweight Web Sandwich Panel as a Floor and a Wall**

Abstract: This experimental investigation was focused on the strength capability of lightweight web sandwich panel (LWSP). This study deals with the LWSP’s strength under flexural loading (one point load & third point load) by treating these LWSPs as a floor and also, studying LWSP strength under axial load by treating these LWSPs as a wall. Thirteen specimens of LWSP was casted in this study with size of (500 mm*400 mm*100 mm), with core size of (450 mm*105mm*60 mm), three prism core are used in each panel. Ten specimens are LWSP with aerated concrete as a core and three LWSP with thermocol as a core which are encased by ferrocement with difference water cement ratio (w/c) and difference waterproofing admixture. The performance of the LWSP is investigated in terms of first crack load, load-deflection curve for flexural load with (one point loading and third point loading), modules of rupture, ultimate flexural load, axial load-deformation curve and the failure mode. The unit weight of the LWSPs which have aerated concrete as a core is (1850-1950) Kg/m3 and the unit weight of the LWSPs which have thermocol as a core (1250-1300) Kg/m3.

Keywords: Aerated Concrete, Ferrocement, Lightweight Web Sandwich Panel (LWSP), sandwich, Thermocol.

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16.

Authors: **Ali Hussein Qader,V.C. Agarwal, Amer M. Ibrahim**

Paper Title: **Nonlinear Behavior of Continuous Composite Steel Concrete Beam with External Prestress**

Abstract: This paper presentsa nonlinear finite-element analyses have been carried out to investigate the behavior up to failure of continuous composite steel-concrete beam with external Prestressing tendon, in which a concrete slab is connected together with steel I-beam by means of headed stud shear connectors, subjected to symmetrically static loading. ANSYS computer program (version 12.1) has been used to analyze the three dimensional model. This covers: load deflection behavior, strain in concrete, strain in steel beam and failure modes. The nonlinear material and geometrical analysis based on Incremental-Iterative load method, is adopted. One model had been analyzed to verify its capability and efficiency. The results obtained by finite element solutions have shown good agreement with experimental result.

Keywords: ANSYS. 12.1, externally Prestressing, Composite steel-concrete beam, Finite element.

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17.

Authors: **Jan Haase**

Paper Title: **Wireless Sensor Networks – An Important Part of Current Automotive and Building Automation Tasks**

Abstract: In the areas of building automation and automotive applications the use of systems of (embedded) systems is very common. However, until recently, in many cases the communication between the participating systems was cable-based. Due to developments in the area of wireless sensor networks, the communication can be converted step-by-step to be wireless. This leads to many advantages, like reduced space requirements, less weight, etc. On the other hand it introduces new problems like possible occasional connection problems, vulnerability in terms of data security, etc.
This survey paper gives an overview on current activities and works in the area of wireless sensor networks for automotive and building automation applications.

Keywords: Wireless sensor networks, WSN, Building Automation, Automotive

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Authors: **Nageswara Rao Eluri, K. Venkata Rao, M. SomaSundara Rao, Mohammed Abazeed Bazeed**

Paper Title: **A New Approach to Communicate Secret Message (Key) Among a Group Using Chain Matrix Multiplication Based on Public Key Crypto System**

Abstract: Group key management is a fundamental building block for secure group communication systems. It is required for many applications such as teleconference, group meeting etc. Proposed System, Secure Group Communication in public key cryptography systems is proposed for dynamic groups which are secure. In this scheme a group is established and a master key is generated using the dynamic approach chain matrix multiplication and text messages are transmitted between users of group with help of Master key and also between sub groups. In our approach, group key will be updated when a user joins or leaves the group. Confidentiality can be achieved through changing re-keying when user joins or leaves the group.

Keywords: Key Distribution, Chain matrix Multiplication, Server/Client communication, RSA, Encryption and Decryption.

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Authors: **J. Reddaiah, Dr. G. Harinath Gowd, S. Praveen Kumar, V. Vishnuvardhan**

Paper Title: **Design & Analysis of Master Cylinder of Hydraulic Braking System Using ANSYS**

Abstract: Master cylinder is a component of hydraulic braking system and it is just a simple piston inside a cylinder. Master cylinder is the key element of braking system which initiates and controls the braking action. A reservoir is attached to the master cylinder to store brake fluid. A master cylinder having a reservoir and a cylinder formed from a single piece of molded material. The objective of the present work is to minimize the weight to increase mileage in case of general road cars and to increase the speed of the vehicle in case of sports cars. Saving grams at different parts in a car helps us in saving some kilograms at the end of the design. The plastics have good elastic properties and are strong enough to use for master cylinder. The use of plastics in the manufacturing of master cylinder reduces the weight of the master cylinder. The master cylinder is modeled in PRO-E and the analysis is carried using ANSYS work bench. The automobile components like master cylinder can be easily modeled in PRO-E and can be easily analyzed using ANSYS.

Keywords: Hydraulic braking system, Master cylinder, Pro-E, ANSYS.

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Authors: **Chao-Tsung Kuo, Tso-Bing Juang**

Paper Title: **Lower-Error Antilogarithmic Converters Using Binary Error Searching Schemes**

Abstract: In this paper, lower-error and ROM-free antilogarithmic converters with multiple regions of piecewise-linear approximation are proposed. By employing Binary Error Searching schemes, the error percent ranges of our proposed antilogarithmic converters could achieve 1.6808%, 0.5681%, 0.137% and 0.098% for 2-region, 4-region, 8-region and 16-region approximations respectively, which can outperform previously proposed methods in the literature. Area comparisons with previously well-known antilogarithmic converter using six-region approximation methods in the literature, our proposed antilogarithmic converter with four-region approximation can provide 1.7x error reduction with only 30% extra hardware overhead under the same delay constraints. These antilogarithmic converters are all designed and synthesized using TSMC 0.18 □ m process. Our proposed converters can be applied in the real-time 3-D graphics and DSP computations to ease the tremendous computation efforts.

Keywords: Antilogarithm, Logarithm, Computer arithmetic, very large scale integration (VLSI) design.

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Authors: **R. Sharadha, CH. Bhanu Prakash, M. J. C. Prasad**

Paper Title: **FPGA Implementation of AES Algorithm**

Abstract: This paper presents the FPGA implementation of AES algorithm Cryptography is the science of secret codes, enabling the confidentiality of communication through an insecure channel. It protects against unauthorized parties by preventing unauthorized alteration of use. Generally speaking, it uses a cryptographic system to transform a plaintext into a cipher text, using most of the time a key. To increase the computational speed parallelism and pipelining architecture have been implemented. The simulation is done using Xilinx 13.2 version.

Keywords: AES, FPGA, encryption, decryption, Rijndael, block cipher.

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Authors: **Debaswapna Mishra, Narendra.Kumar Kamila**

Paper Title: **AGILE Software Development Using Scrum Methodology**

Abstract: This paper examines software developers with an understanding of the SCRUM development practices and methods in the increasingly complex and customer demanding faster time to market scenarios. Scrum has risen from being a method used by a number of enthusiasts at the Easel Corporation in 1993, to one of the world's most popular and well-known frameworks for development of software. The continued expansion of the global rollout of Scrum is testimony to the fact that Scrum delivers on its promise. While it is often said that Scrum is not a silver bullet, Scrum can be like a heat-seeking missile when pointed in the right direction. It's inspect and adapt approach to continuous quality improvement can do serious damage to outmoded business practices. By focusing on building communities of stakeholders, encouraging a better life for developers, and delivering extreme business value to customers Scrum can release creativity and team spirit in practitioners and make the world a better place to live and work. Scrum has emerged from a rough structure for iterative, incremental development to a refined, well-structured, straightforward framework for complex product development. We see from a deep research that it leads folks to adjust, test, and adjust it again until it is solid. This framework is fully defined in last decade and is of immense value to organizational success. This study is aimed at bringing a through and detailed understanding of SCRUM, its advantages over other development methodologies and the execution from a practitioner's standpoint.
The study is presented in two main stages. The first stage describes the evolution of software development techniques and how they have been applied throughout the software development lifecycle, progressing up to Agile Software Development practices and SCRUM based Development. The second stage of the study presents a detailed set of tools, artifacts and practices used in real world scenarios.

Keywords: Agile, Scrum, Product development

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Authors: **Aziz Oriche, Abderrahman Chekry, Md. Khaldi**

Paper Title: **Agent of Semantic Annotation of Educational Resources Based On Ontology**

Abstract: Our goal is to describe the content of learning objects (LO) by semantically annotating with unambiguous information to facilitate the exploitation of these resources by software agents, these resources are defined by XML tags that structure is a tree DOM (Document Object Model) and on the same domain. We assume to have a domain ontology defined concepts, relations between these concepts and properties. We defined the intelligent agent AGSA featuring an annotation module representing a set of declarative rules to annotate nodes and their relationships. Metadata for this module are concepts expressed the father/son relationships type concepts/sub concepts between LO.

Keywords: Semantic Annotation, Metadata, Multi-agent systems, Ontology, learning object (LO).

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Authors: **Sagar Devidas Bole**

Paper Title: **Mitigation of Inrush Current in Transformer**

Abstract: Nature of magnetizing inrush current is non-symmetrical. The magnitude of magnetizing inrush current is five to ten times the rated magnetizing current and sometimes it is more than full load current of transformer due to addition of transient component. Control and reduction of inrush currents of energizing transformers and reactors is an important problem in electric power systems where different methods are utilized for this purpose. This paper compares two different methods to minimize the inrush current through the simulation result done with MATLAB simulink.

Keywords: switching transient, inrush current, Point-On-Wave.

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Authors: **Rathod Raju Ambadas, R. P. Chaudhari**

Paper Title: **PIC Microcontroller Universal Board**

Abstract: A Microcontroller is a device which integrates a number of the components of a microprocessor system onto a single microchip and optimized to interact with the outside world through on-board interfaces; i.e. it is a little

gadget that houses a microprocessor, ROM (Read Only Memory), RAM (Random Access Memory), I/O (Input Output functions), and various other specialized circuits all in one package.

Microcontrollers are used in automatically controlled products and devices, such as automobile engine control systems, implantable medical devices, remote controls, office machines, appliances, power tools, toys and other embedded systems. By reducing the size and cost compared to a design that uses a separate microprocessor, memory, and input/output devices, microcontrollers make it economical to digitally control even more devices and processes. Mixed signal microcontrollers are common, integrating analog components needed to control non-digital electronic systems.

Keywords: ROM, RAM, I/O.

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26.

Authors: **Ullas P, ShashiKiran B N, Darshan A M, Bharath Kumar S**

Paper Title: **Threshold Energy Based LEACH Algorithm for Wireless Sensor Networks**

Abstract: This Paper Presents A New Protocol Called Threshold Energy Based Leach Algorithm (Tela) For Wireless Sensor Networks (Wsn) Which Aims To Reduce Energy Consumption Within The Wireless Network. Efficiency Of A Wireless Network Mainly Depends On Energy Of Nodes. In Cluster Based Protocols, Changing Of Clusters And Cluster Head Also Consumes More Energy But The Procedure Depends On Random Time. So, In This Proposed Protocol, We Are Reducing The Wastage Of Energy While Selecting Or Changing The Clusters/Cluster Heads. We Evaluate Both Leach Andtela Through Simulations Using Ns-2 Simulator Which Shows That Tela Performs Better Than Leach Protocol.

Keywords: Clustering, Energy, LEACH protocol, TELA, NS-2.

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Authors: **Mohammed Aboud Kadhim, Maha M. Mohammad Ali**

Paper Title: **Design and Improvement of WiMAX OSTBC– OFDM Transceiver Based Multiwavelet Signals by Tomlinson-Harashima Precoding on SFF SDR Development Platform**

Abstract: In this paper, a new robust transceiver design with Tomlinson-Harashima precoding (THP) for multiple-input multiple-output (MIMO) for fixed (Worldwide Interoperability for Microwave Access) WiMAX Transceiver Based on multiwavelet signals is investigated.THP is adopted to mitigate the spatial inter symbol interference. All

cases are based on the IEEE 802.16d standard using Orthogonal Frequency-Division Multiplexing (OFDM) based multiwavelet to further reduce the level of interference and increase spectral efficiency and 16-Quadrature amplitude modulation (QAM) half-values of coding rates, using Small Form Factor (SFF) Software Defined Radio (SDR) Development Platform. The proposed THP design achieves considerably lower bit error rate or bit error ratio (BER) and higher signal-to-noise power ratio than not using THP. The proposed TH pre-coding system was modeled-tested, and its performance is found to comply with International Telecommunications Union channel models (ITU) that have been elected for the wireless channel in the simulation process. Finally, the performance advantage of the proposed robust with THP design over non-robust design is demonstrated by simulation results

Keywords: THP, WiMAX, SFF SDR, OFDM, OSTBC, DMWT, Precoding.

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Authors:	**S.Mondal, N.Sk, P.K. Karmakar**
Paper Title:	**Estimation and Comparison of Antenna Temperature and Water Vapor Attenuation at Microwave Frequencies over Northern and Southern Latitude**

Abstract: Radiosonde data available from British Atmospheric Data Centre (BADC) over Chongging, (29.0 N), China and Porto Alegre(29.0 S), Brazil were analyzed to determine the variation of antenna temperature and water vapor attenuation in the frequency range 5 GHz -40 GHz during two different season namely, winter season and rainy season. Antenna temperatures at 5, 10, 20, 22.235, 23.834, 30, 35 and 40 GHz have been determined for the different value of water vapor content during January-February and July-August over these two places. Antenna temperature and attenuation increases with increase in frequency, thereafter, becoming maximum at the water vapor resonance line of 22.235 GHz. With further increase of frequency beyond 22.235 GHz and up to 31 GHz, the antenna temperature and attenuation decreases. Again after 31 GHz, Antenna temperature and attenuation is increasing in nature.

Keywords: Antenna temperature, Attenuation, Water vapor, Water vapor content.

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Authors: **Mansi Manocha, Parminder Kaur**

Paper Title: **Palm Vein Recognition for Human Identification Using NN**

Abstract: In the ubiquitous network society, where individuals can easily access their information anytime and anywhere, people are also faced with the risk that others can easily access the same information anytime and anywhere. Because of this risk, personal identification technology, which can distinguish between registered legitimate users and imposters, is now generating interest. Currently, passwords, Personal Identification cards are used for personal identification. However, cards can be stolen, and passwords and numbers can be guessed or forgotten. To solve these problems, biometric authentication technology, which identifies people by their unique biological information, is attracting attention. Palm vein recognition is that it is not affected by dryness or roughness of skin or by physical injury on surface of the hand but sometimes the temperature and humidity can affect the quality of the captured image.

Keywords: Feature Extraction, Palm Vein Recognition System, NN.

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Authors: **Sakshi Batra, Harpinder Kang Khattra**

Paper Title: **An Improved Data Transfer Technique Using Steganography with Watermarking and Visual Cryptography**

Abstract: Steganography is the art and science of writing hidden messages in such a way that no one, apart from the sender and intended recipient, suspects the existence of the message. It is a form of security through obscurity. The word Steganography in the modern day usually refers to information or a file that has been concealed inside a digital Picture, Video or Audio file. Essentially, the information-hiding process in a steganographic system starts by identifying a cover medium's redundant bits. The embedding process creates a stego medium by replacing these redundant bits with data from the hidden message. In this paper a new type of cryptographic scheme is proposed, which can decode concealed images without any cryptographic computations. The scheme is perfectly secure and very easy to implement. Further watermarking is also applied on the data so as to provide much security. Digital watermarking is the process of inserting a digital signal or pattern (indicative of the owner of the content) into digital content. The signal, known as a watermark, can be used later to identify the owner of the work, to authenticate the content, and to trace illegal copies of the work.

Keywords: Cryptography, Steganography, Water marking, security.

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Authors: **A.VeeraLakshmi, S.Priya**

Paper Title: **Leakage Reduction And Stability Improvement Techniques Of 10t Sram Cell: A Survey**

Abstract: Reduction of leakage power is very important for low power applications. Because these high leakage currents are the major contributor of total power consumption of the circuit. This paper explains about various leakage reduction techniques as well as stability improvement techniques of the different SRAM cells. Some of the leakage reduction techniques discussed in this paper are dynamic VDD, multiple Vth, SVL (Self- Controllable Voltage Level) and AVL (Adaptive Voltage Level). The stability improvement techniques are word-line adjustment, dual voltage supply, NBL (Negative Bit line) and bit interleaving technique. These techniques are applied on different SRAM cells (6T, 7T, 8T and 10T) and the results are compared. For simulation, MICROWIND 3.1 tool is used.

Keywords: Leakage reduction, write ability, SRAM, leakage power.

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32.

Authors: **Rubina.A. Shaikh, Sajid Shaikh**

Paper Title: **Wireless Stand-alone Real Time Remote Patient Health Monitoring System**

Abstract: Statistics reveal that every minute a human is losing his/her life across the globe. More close in India, everyday many lives are affected by heart attacks and more importantly because the patients did not get timely and proper help . Care of critically ill patient, requires spontaneous& accurate decisions so that life-protecting & lifesaving therapy can be properly applied. This paper is based on monitoring of remote patients, after he is discharged from hospital. I have designed and developed a reliable, energy efficient remote patient monitoring system. It is able to send parameters of patient in real time. It enables the doctors to monitor patient's parameters (temp, heartbeat, ECG) in real time. Here the parameters of patient are measured continuously (temp, heartbeat, ECG) and wirelessly transmitted using ZigBee.

Keywords: Sensors, ARM7 microprocessor, GSM modem, ZigBee

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Authors: **Anand Mohanrao Magar, Nilesh J. Uke**

Paper Title: **Use of AST for Translating Executable UML Models to Java Code in Eclipse and Testing Strategy for UML Models**

Abstract: Executable UML, coupled with Model-Driven Architecture is the foundation for a new software development methodology in which domain (business) experts would be involved in the crafting of high-level models and technologists would be concerned with translating the models to 3rd or 4th generation code. Editors like Eclipse provides modeling framework and code generation facility for building tools and other applications based on a structured data model. Eclipse Modeling Framework (EMF) is a framework to create meta-models with code-generation capabilities. Eclipse Modeling Framework is not an Model Driven Architecture framework but is the building block on top of which other tools may build. The Graphical Editing Framework (GEF) provides technology to create rich graphical editors and views for the Eclipse Workbench UI bundled with draw2d.
Our work specifies translatable approach for executing UML models in Eclipse editor. The Abstract Syntax Tree (AST) maps plain Java source code in a tree form. This tree is more convenient and reliable to analyze and modify programmatically than text-based source. Eclipse plug-in Editor have Java Perspective and UML perspective merged together. Our plug-in contains UML editor which makes use of EMF and GEF based implementation. Class diagram which can be easily translated to Java code. These models are further modified to have action semantics and by modifying AST final Java source code which is directly executable in Eclipse Editor is generated. For testing xUML models, best strategy is to use model based testing.

Keywords: Abstract Syntax Tree, xUML, Model Based Testing

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Authors: **Lovenish Kumar, Sunita Rani**

Paper Title: **Implementation of Improved AODV Protocol Based on WiMax Using Network Simulator 2**

Abstract: Wireless Bandwidth allocation and routing mechanisms are two main parameters that decided the quality of service (QOS) in wireless sensor network. Monitoring, surveillance and many other military and civilians needs are main area of wireless sensor networks. Security mechanism for the sensor network must be energy efficient because sensor has limited power. Energy efficiency protocol must require self configuration and autonomic functionality to operate properly. In this paper improve the AODV protocol (IAODV) by creating a Cycle on a node where the congestion probability is high i.e. at near sink node to find all those nearer nodes where buffer occupancy is high and proposed to minimize the delay, increase the throughput and increase the packet delivery Fraction (PDF) as compared to AODV protocol.

Keywords: Wireless sensor network, WiMax 802.16, AODV, IAODV, PDF.

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Authors:	**Imranullah Khan, Tan Chon Eng**
Paper Title:	**The Performance Improvement of Long Range Inter-relay Wireless Cooperative Network using Three Time Slot TDMA based Protocol**

Abstract: Time division multiple access (TDMA) amplify and forward based protocols for cooperative wireless networks have been investigated previously by various researchers. However, the analysis for these protocols is not considered for long range cooperative wireless networks over Rician fading channel. Therefore, the aim of this paper was to propose three time slot TDMA based transmission protocol for inter-relay cooperative wireless network with longer distances between source to relays and destination as well as between relays to destination. It is concluded that the proposed protocol shows less BER performance for long range inter-relay cooperative network over Rician fading channel as compared to two time slot long range cooperative network. Moreover, the proposed protocol shows better performance in terms of less BER values when the inter-relay distance is minimum.

Keywords: Cooperative inter-relay wireless communication, AF Protocol, TDMA, Path Loss Models, BER.

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36.

Authors: **B. Jagadeesh Chandra Prasad, B.V. Sanker Ram**

Paper Title: **Inter-turn Fault Analysis of Synchronous Generator using Finite Element Method (FEM)**

Abstract: A turn fault in the stator winding of a generator causes a large circulating current to flow in the shorted turns. If left undetected, turn faults can propagate, leading to phase-ground or phase-phase faults. Incipient detection of turn's faults is essential to avoid hazardous operating conditions and reduce down time. At present the synchronous generators are protected against almost all kind of faults using differential methods of protection. All kind of faults develops into inter winding fault by damaging inter winding insulation. So it is necessary to protect the synchronous generator from inter winding faults which represents the protection against all kind of faults. There are different method based techniques for analyzing generator incipient/inter turn faults on stator side. They are circuit based, field based, wavelet based, artificial intelligence based, fuzzy based, artificial neural networks based. Machine performance characteristics that could be monitored to diagnose the stator inter-turn fault in generator include line current, terminal voltage, torque pulsations, temperature rise due to excessive losses, shaft vibrations, air-gap flux and speed ripples. So in this we are developing a mathematical model or method based on online/offline condition monitoring system by analyzing various conditions and collecting various samples of voltage and current (i.e. normal and abnormal) for protection of generators against faults (i.e. means incipient/inter turn faults) on stator side. The main Objective is to develop a mathematical model or method based on online/offline condition monitoring system by analyzing various conditions (i.e. normal and abnormal) for protection of generators against faults (i.e. means incipient/inter turn faults) on stator side.

Keywords: Synchronous generator, windings, internal winding faults, fault detection, fault diagnosis, incipient faults, ANSYS

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37.

Authors: **Mamta G. Pawar, Monarch K. Warambhe, Gautam R. Jodh**

Paper Title: **Design and Analysis of Clutch Using Sintered Iron as a Friction Material**

Abstract: Clutch system is among the main systems inside a vehicle. Clutch is a mechanical device located between a vehicle engine and its transmission and provides mechanical coupling between the engine and transmission input shaft. Clutch system comprise of flywheel, clutch disc plate and friction material, pressure plate, clutch cover, diaphragm spring and the linkage necessary to operate the clutch. The clutch engages the transmission gradually by allowing a certain amount of slippage between the flywheel and the transmission input shaft. However, the slipping mechanism of the clutch generates heat energy due to friction between the clutch disc and the flywheel. At high sliding velocity, excessive frictional heat is generated which lead to high temperature rise at the clutch disc

surface, and this causes thermo-mechanical problems such as thermal deformations and thermo-elastic instability which can lead to thermal cracking, wear and other mode of failure of the clutch disc component.
In this project, the modeling of clutch is done in detailed using modeling software. After that the FEM analysis is done for sintered iron friction material. The stresses & deformation obtained for this friction material is then compared to analysis software result. The analysis is done for worn out friction disc.

Keywords: Coefficient of friction, von-misses stress, young's modulus and poisons ratio.

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38.

Authors: **Kiran Babu T.S, Ragav Krishna.R**

Paper Title: **Protection Against Online Password Guessing Attacks by Using Graphicals Passwords**

Abstract: Usable security has unique usability challenges because the need for security often means that standard human-computer-interaction approaches cannot be directly applied. A very pivotal usability goal for authentication systems is to support users in selecting secure passwords. Users often create predictable and easy to remember passwords that are easy for attackers to hack or guess, but system-assigned passwords which are inherently strong are difficult for users to remember. We are proposing alternative methods wherein graphical pictures are used as security agents (passwords). Graphical passwords fundamentally use images or representation of images as passwords. Pictures are more lucid and easy to remember for the human brain than textual character. There for, this paper merges persuasive cued click points and password guessing resistant protocol. The pith and main intent of this work is to reduce the guessing attacks as well as encouraging users to select passwords that are random and thus logically become more difficult to guess. The rudimentary security threats including brute force attacks and dictionary attacks can be successfully abolished using this method.

Keywords: Authentication, graphical passwords, guessing attacks, computer security.

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Authors: **Kiran Babu.T.S, Ragav Krishna.R**

Paper Title: **A Comparative Overview of Popular Attacks Relevant to Adhoc -Networks**

Abstract: The wireless ad hoc network become mundane, yet the core issue is the security. There are different types of attacks provided by different researcher but still faces research challenges. In Adhoc networks, nodes have limited resources like bandwidth, battery power and storage capacity. In this paper we pay attention to common attacks which occur in networks layer of OSI model such as Black hole attack, gray hole attack, Flooding attack, Jamming ,Wormhole attack, Collosion attack traffic monitoring and analysis & DOS. We discuss about the counter measures against them.

Keywords: Attacks, Blackhole, DOS, Grayhole, Wormhole, Adhoc-Networks.

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