Volume 2 Issue 2, December 2012

# International Journal of Engineering and Advanced Technology

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



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

**Address:**
# 22, First Floor, ShivLoke Phase-IV,
Khajuri Kala, BHEL-Piplani, Bhopal (M.P.)-462021, India
**Website:** www.blueeyesintelligence.org
**Email:** director@blueeyesintelligence.org, blueeyes@gmail.com
**Cell #:** +91-9669981618, **WhatsApp #:** +91-9669981618, **Viber #:** +91-9669981618
**Skype #:** beiesp, **Twitter #:** beiesp

## Technical Advisory Board

## Managing Editor



## Editorial Board

| S. No | Volume-2 Issue-2, October 2012, ISSN: 2249-8958 (Online)<br>Published By: Blue Eyes Intelligence Engineering & Sciences Publication Pvt. Ltd. | Page No. |
|---|---|---|

| | | |
|---|---|---|
| **Authors:** | **Shaik Abdul Khader Jeelani, Adel S. Al-Dosary, J.Karthikeyan** | |
| **Paper Title:** | **Empirical Evaluation of Performance of Construction Management At-Risk (CM at -Risk) Project Delivery System With and Without Agency-CM** | |

**Abstract:** A project delivery system is a comprehensive process of assigning the contractual responsibilities for designing and constructing a project. Design-Bid-Build (D-B-B), Design-Build (D-B), and Construction Management at risk (CM- at - Risk) are the three principal project delivery systems. Agency CM is as a construction management system, and is a way to manage the process of construction.

Agency-CM doesn't take any performance risk in guaranteeing project cost, project schedule and project quality. Generally Agency CM is remunerated on monthly fee/ lump sum fee or by the percentage of the project cost that has conflict of interest with the final project schedule and final project cost. Considerable amount of fee is paid to the Agency CM in order to improve the efficiency of the project. This necessitates a comprehensive investigation in to the performance of projects delivered with Agency CM and projects delivered without Agency CM.

Agency-CM can be used with any type of Project Delivery system. This paper presents the evaluation of the project performance metrics such as Project Cost, Project Schedule and Project quality where CM –at - Risk Project Delivery System was used with Agency CM and without Agency CM. It compared the Cost Growth, Time Growth, and quality performance of 200 CM-at-Risk projects of which 100 projects where Agency CM was used and 100 projects where Agency CM was not used. Analysis of data pertaining to project performance metrics was done by using SPSS statistical software.

An understanding of this study may help an owner/client better select the suitable CM-at-Risk Project Delivery System either with or without Agency Construction Management.

**Keywords:** Agency Construction Management, Project Delivery Systems, CM-at-Risk with Agency CM, Project performance metrics, CM-at-Risk without Agency CM, Construction Projects, Design-Build, Design-Bid-Build

**1.**

**References:**

1. Page-11, Chapter-1,The Associated General Contractors of America (AGC) Publication-Second Edition- Project Delivery System for Construction.-2004
2. Pages31-32, Chapter-3,The Associated General Contractors of America (AGC) Publication-Second Edition- Project Delivery System for Construction.-2004
3. Pages33, Chapter-3,The Associated General Contractors of America (AGC) Publication-Second Edition- Project Delivery System for Construction.-2004
4. Page5 & 6,Chuck Kluenker, Risk Vs Conflict of Interest- What Every Owner Should Consider When Using Construction Management-CM eJournal, January,2001
5. Fouad Mansoor Al Sinan –'Evaluation of construction management Contracts in developing Countries.(Ph.D Thesis ,Purdue University, USA).May,1986
6. Kyungsoon Chang – Multiattribute Weighing Models for best value selection in public sector Design- Build projects.(Ph.D Thesis, University of Colorado, USA ).-2004
7. Joseph A. Mannarino- "Evaluation of the Construction management delivery system and establishing a model for selection- A qualitative approach (Ph.DThesis,University of New York at Buffalo,USA)- May2001.
8. Edmond W.M.Lam- "Bench marking Design- Build procurement systems in Construction" (The Hongkong Polytechnic University, People's republic of China).-2004
9. Adetokunbo Adegboyega Oyetunji " Methodology for Selecting Project Delivery and Contract Strategies for Capital Projects" – Ph.D Dissertation- Texas A&M -University – Agust,2001
10. The university of Reading Design and Build Forum-Comparison of the cost, schedule and quality performance of 332 Design Build and Design Bid Build projects using multivariate analysis techniques built in UK.
11. Mark D Konchar and Victor Sanvido "Comparison of US Project Delivery Systems"(Ph.D Thesis, The Pennsylvania state University ,USA)- December,1997
12. Sami W. Fahmi- "Comparative Analysis of Expected and Actual Performance of Public Design Build Projects"(Ph.D Thesis, University of Calgary, Canada).April,2005
13. Chuck Kluenker, Risk Vs Conflict of Interest- What Every Owner Should Consider When Using Construction Management-CM eJournal, January,2001
14. American Institute of Architects, The Integrated Project Delivery(2007): A guide v.1,AIA National/AIA California Council,62pp
15. Bruns,T.A.(1997) " Preproject planning in the university of Texas System" M.S. Thesis, University of Texas, USA,40-56.
16. Konchar ,M.,& Sanvido V.(1998) " Comparison of US Project delivery systems" Journal Construction Engineering and management,124(6) 435-444.
17. Rojas,E., Kell .I.(2008) " Comparative Analysis of Project Delivery Systems cost performance in pacific northwest public schools." Journal of Construction Engineering management, 397(2), 10-17.
18. Aditi Kulkarni,Zofia K.Rybhowski and James Smith 2012 " Cost Comparison of Collaborative and IPD-like Project delivery methods versus Competitive Non-Collaborative Project Delivery methods. Proceedings for the 20th Annual Conference of the International Group for Lean Construction.
19. Greg Cunningham,AIA, Commissioning Large Public Projects Using Construction Management at Risk-National Conference on Building Commissioning, May4-6,2005
20. US Army Corps Of Engineers-Technical requirements for Design Build Projects.1st July,1998
21. Tyson Building Corporation- Design- Build, Design-Bid –Build and Contract Management- How to select the one that is right for you!
22. AIA Minnesota- A society of the American Institute of Architects-Understanding Project Delivery for design and Construction of Public Buildings
23. J.K.Yates and Leslie C. Battersby-Master Builder Delivery System and Designer Construction Knowledge.
24. Dong-Eun Lee and David Arditi- Total Quality Performance of Design/Build Firms Using Quality Function Deployment.
25. Marwa A. El Wardani; John I. Messner; Michaelk J. Horman- Comparing Procurement Methods for Design Build Projects.
26. Florence Yean Yng Ling; SweeLean Chan; Edwin Chong; and Lee Ping Ee- Predicting Performance of Design Build and Design- Bid-Build Projects.
27. Michael Loulakis – Evaluating Project Delivery Systems an Owner's Manual.
28. Thomas R.Warne,P.E. and Jeffrey L. Beard – Project Delivery Systems Owner's Manual.

29. Al-Sinan,Fouad M; and Hancher, Donn E. Facility Project Delivery Selection Model. Journal of Management in Engineering.

**2.**

**Authors:** **R.Ramachandran, J. Thomas Joseph Prakash**

**Paper Title:** **Designing Of Reconfigurable MPNOC On FPGA For Processing The Wireless Sensor Networks**

**Abstract:** Designing of system on chip with the current algorithm and design methodology cannot meet the requirements of accommodating billion-transistor area in VLSI technology. There is a need of plat form based design and computing system design. It is to implement FPGA based reconfigurable Multiple Processor Network on Chip (MPNOC) which consists of Multiple Processing Units (MPUs),Communication controller (CC) and Memory Units (MU). The processing units are System on Chips; they are communicated each and other or connected with Routers. In this work NoC designed for processing the signals of wireless sensor networks, such as GPS, RF sensor, RFID, and Zigbee outputs. The proposed System was thus designed and simulated in ALTERA IDE's platform. In this work, the SOPC Builder component editor has been used to configure the node elements and to create Custom network interface component. In order to implement the designed Noc in FPGA chip, Altera Quartus II CAD tool was used, which compiles HDL written for configuring NoC , also generates RTL View and timing analyzer for the main components.

**Keywords:** MPNoC, SoC, reconfigurable Network on Chip, Wireless system, WSN

**References:**

1. D. Estrin, R. Govindan, J. S. Heidemann, and S. Kumar, "Next century challenges: Scalable coordination in sensor networks," in MobileComputing and Networking, Seattle, WA USA, 1999, pp. 263–270.
2. I. F. Akyildiz, W. Su, Y. Sankarasubramaniam, and E. Cayirci, "A Survey on Sensor Networks," IEEE Communications, vol. 40, no. 8, pp. 102–114, 2002.
3. J. Hill, R. Szewczyk, A. Woo, S. Hollar, D. Culler, and K. Pister, "System architecture directions for networked sensors," in Proceedings of the ninth international conference on Architectural support for programming languages and operating systems. ACM Press, 2000, pp. 93–104.
4. V. Mhatre and C. Rosenberg, "Homogeneous vs. heterogeneous clustered sensor networks: A comparative study," in IEEE International Conference on Communications (ICC 2004), Paris, France, June 2004.
5. E. Altman, T. Basar, T. Jimenez, and N. Shimkin, "Competitive routing in networks with polynomial costs," IEEE Trans. Automat. Control, vol. 47, no. 1, pp. 92-96, 2002.
6. A. Jantsch and H. Tenhunen, Networks on chip. Kluwer Academic Publishers, 2003.
7. Shasi Kumar et al " A Network on chip architechture and design methodology" proceedings of the IEEE computer Society Annual Symposium on VLSI, 2002.
8. T. Bjerregaard and S. Mahadevan, "A survey of research and practices of network-on-chip," ACM Comp. Surveys, vol. 38, no. 1, pp. 1–51, Mar. 2006.
9. M. Chu, S. K. Mitter, and F. Zhao, "An information architecture for distributed inference on adhoc sensor networks," in Forty-first Annual Allerton Conference on Communication, Control, and Computing, Monticello, USA, 2003, oct.
10. D. Ganesan, D. Estrin, and J. Heidemann, "Dimensions: why do we need a new data handling architecture for sensor networks?" SIGCOMM Comput. Commun. Rev., vol. 33, no. 1, pp. 143–148, 2003.
11. Andre Mota, Leonardo B. Oliveira "WISENEP: A Network Processor for Wireless Sensor Networks".
12. William James Dally and Brian Towles (2004). "13.2.1". Principles and Practices of Interconnection Networks. Morgan Kaufmann Publishers, Inc.
13. Mohapatra, P. Wormhole routing techniques for directly connected multicomputer systems. ACM Computing Surveys, 30(3), Sep. 1998, pp 374-410.
14. http://www.atmel.com/images/doc2486.pdf.

**13-19**

**3.**

**Authors:** Tushar Gupta, Sonam Sharma, Himja Bhardwaj, Pardeshi Rushikesh

**Paper Title:** SIM Card Based Smart Banking Using FPGA

**Abstract:** Automated teller machines (ATMs) are well known devices typically used by individuals to carry out a variety of personal and business financial transactions and/or banking functions. ATMs have become very popular with the general public for their availability and general user friendliness. ATMs are now found in many locations having a regular or high volume of consumer traffic. For example, ATMs are typically found in restaurants, supermarkets, Convenience stores, malls, schools, gas stations, hotels, work locations, banking centers, airports, entertainment establishments, transportation facilities and a myriad of other locations. ATMs are typically available to consumers on a continuous basis such that consumers have the ability to carryout their ATM financial transactions and/or banking functions at any time of the day and on any day of the week..

**Keywords:** ATMs, ATM.

**References:**

1. Faune Hughes, Daniel Lichter,Richard Oswald, and Michael Whitfield, Face Biometrics:A Longitudinal Study, Seidenberg School of CSIS,Pace University, White Plains,NY 10606,USA.
2. GaryG.Yen, Nethrie Nithianandan, Facial Feature Extraction Using Genetic Algorithm, Intelligent Systems and Control Laboratory School of Electrical and Computer Engineering. Oklahoma State University, Stillwater, OK 74074-5032, USA.
3. D.L. Jiang, Y.X. Hu, S.C. Yan, H.J. Zhang, "Efficient 3D Reconstruction for Face Recognition", 0031_3203/2004 Pattern recognitionsociety:doi:10.1016/j.patcog.2004.11.004
4. Animetrics offers FaceR™ CredentialME service on Sprint 3G and 4G networksAugust 12th, 2010
5. Zigelman, G., Kimmel, R., Kiryati, N. Texture mapping using surface flatten-ing via multi-dimensional scaling, IEEE Trans. Visualization andComp. Graphics, 8, pp. 198-207 (2002).

**20-21**

**4.**

**Authors:** Prijith.M, M.S.P.Subathra, Senraj

**Paper Title:** Single Stage Switching Power Supply With Half Bridge Toplogy Simulation for LED Lamp Driver

**Abstract:** Single stage switching power supply with half bridge topology simulation for LED lamp Driver is presented in this paper.LED lamp driver needs only dc supply. In this paper dc supply is obtained as output while giving ac input voltage of 110V. It is formed by combination of ac/dc converter and dc/dc post regulator. Compared

**22-25**

to other switching power supply this reduces cost ,size and simplifies circuit design. It increases efficiency and output voltage can be controlled. The simulation of single stage switching power supply using half bridge topology using Psim software is done and output voltage and power are verified .by using this get an output voltage of 48 V dc output and power range up to 120 W ,and efficiency is above .89 . It is used in LED lamp drivers and piezoelectric element drivers.

**Keywords:** stage switching power supply, half bridge topology

**References:**


1. X. Qu, S. C. Wong, and C. K. Tse, "Resonance-assisted buck converter for offline driving of power LED replacement lamps," IEEE Trans. Power Electron., vol. 26, no. 2, pp. 532–540, Feb. 2011.
2. D. G. Lamar, J. S. Zuniga, A. R. Alonso, M. R. Gonzalez, and M. M. H. Alvarez, "A very simple control strategy for power factor correctors driving high-brightness LEDs," IEEE Trans. Power Electron., vol. 24, no. 8, pp. 2032–2042, Aug. 2009.
3. S. Y. Hui, D. Y. Lin, W. M. Ng, and W. Yan, "A 'Class-A2' ultra-low-loss magnetic ballast for T5 fluorescent lamps—A new trend for sustainable lighting technology," IEEE Trans. Power Electron., vol. 26, no. 5, pp. 622–629, Feb. 2011.
4. M. A. Al-Saffar, E. H. Ismail, and A. J. Sabzali, "Integrated buck-boost quadratic buck PFC rectifier for universal input applications," IEEE Trans. Power Electron., vol. 24, no. 12, pp. 2886–2896, Dec. 2009.
5. Sheng-Yuan Ou, "Analysis and Design of a Novel Single-Stage Switching Power Supply With Half-Bridge Topology", IEEE Trans. Power Electrn., VOL. 26, NO. 11, NOVEMBER 2011.
6. N. Chen and H. S. H. Chung, "A driving technology for retrofit LED lampfor fluorescent lighting fixtures with electronic ballasts," IEEE Trans. Power Electron., vol. 26, no. 2, pp. 588–601, Feb. 2011.
7. B. Su and Z. Lu, "An interleaved totem-pole boost bridgeless rectifier with reduced reverse-recovery problems for power factor correction," IEEE Trans. Power Electron., vol. 25, no. 6, pp. 1406–1415, Jun. 2010.
8. A. A. Boora, A. Nami, F. Zare, A. Ghosh, and F. Blaabjerg, "Voltage sharing converter to supply single-phase asymmetrical four-level diode clamped inverter with high power factor loads," IEEE Trans. Power Electron., vol. 25, no. 10, pp. 2507–2520, Oct. 2010.
9. X. Li and A. K. S. Bhat, "Analysis and design of high-frequency isolated dual-bridge series resonant DC/DC converter," IEEE Trans. Power Electron., vol. 25, no. 4, pp. 850–862, Apr. 2010.
10. M. A. Dalla Costa, T. B. Marchesan, J. S. da Silveira, A. R. Seidel, R. N. do Prado, and J.M. A. A´ lvarez, "Integrated power topologies to supply HPS lamps: A comparative study," IEEE Trans. Power Electron., vol. 25, no. 8, pp. 2124–2132, Aug. 2010.
11. T. Reiter, D. Polenov, H. Pr¨obstle, and H. G. Herzog, "PWM dead time optimization method for automotive multiphase DC/DC-converters," IEEE Trans. Power Electron., vol. 25, no. 6, pp. 1604–1614, Jun. 2010.
12. Y. Xie, J. Sun, and J. S. Freudenberg, "Power flow characterization of a bidirectional galvanically isolated high-power DC/DC converter over a wide operating range," IEEE Trans. Power Electron., vol. 25, no. 1, pp. 54–66, Jan. 2010.
13. H. L. Do, "A soft-switching DC/DC converter with high voltage gain," IEEE Trans. Power Electron., vol. 25, no. 5, pp. 1193–1200, May 2010.
14. Z. Qian, O. A. Rahman, and I. Batarseh, "An integrated four-port DC/DC converter for renewable energy applications," IEEE Trans. Power Electron., vol. 25, no. 7, pp. 1877–1887, Jul. 2010.
15. Guo, X. Lin-Shi, B. Allard, Y. Gao, and Y. Ruan, "Digital sliding mode controller for high-frequency DC/DC SMPS," IEEE Trans. PowerElectron., vol. 25, no. 5, pp. 1120–1123, May 2010.
16. D.Wang, X. He, and J. Shi, "Design and analysis of an interleaved fly back forward boost converter with the current auto balance characteristic," IEEE Trans. Power Electron., vol. 25, no. 2, pp. 489–498, Feb. 2010.
17. H. S. Ribeiro and B. V. Borges, "Analysis and design of a high-efficiency full-bridge single-stage converter with reduced auxiliary components," IEEE Trans. Power Electron., vol. 25, no. 7, pp. 1850–1862, Jul. 2010.


**5.**

| | |
|---|---|
| **Authors:** | **M.Sharanya, B.Basavaraja , M.Sasikala** |
| **Paper Title:** | **An Overview of Dynamic Voltage Restorer for Voltage Profile Improvement** |

**Abstract:** The use of sensitive electronic equipment has increased now a days which has lead to power quality problems. The various power quality disturbances are transients, interruptions, voltage sag, voltage swell, voltage collapse, harmonics etc. To solve these power quality problems various custom power devices are used. Dynamic voltage restorer (DVR) is a custom power device used for the Compensation of voltage sag and swell. In this paper an overview of DVR, its components, functions, compensating strategies and control methods are reviewed in detail and the compensating strategies are compared.

**Keywords:** Power quality, Dynamic voltage restorer, compensating strategies, control methods.

**References:**


1. Anita Pakharia, Manoj Gupta "DYNAMIC VOLTAGE RESTORER FOR COMPENSATION OF VOLTAGE SAG AND SWELL: A LITERATURE REVIEW" International Journal of Advances in Engineering & Technology, Vol. 4, Issue 1, pp. 347-355,July 2012.
2. A. de Almeida, L. Moreira. J. Delgado, "Power Quality Problems and New Solutions"
3. M.A.Taghikhani, "Multi-Loop Control System Design for Phase Advanced Dynamic Voltage Restorer" International Journal of Automation and Power Engineering, 1: 20-27, April 2012.
4. Lin Xu1, Yang Han, "Effective Controller Design for the Dynamic Voltage Restorer (DVR) for Voltage Sag Mitigation in Distribution Utilities" ELEKTROTEHNIŠKI VESTNIK 78(5): 304-311, 2011.
5. Rosli Omar and Nasrudin Abd Rahim, "MITIGATION OF VOLTAGE SAGS/SWELLS USING DYNAMIC VOLTAGE RESTORER (DVR)" ARPN Journal of Engineering and Applied Sciences, VOL. 4, NO. 4, JUNE 2009.
6. Chellali BENACHAIBA, Brahim FERDI, "Voltage Quality Improvement Using DVR" Electrical Power Quality and Utilisation, Journal Vol. XIV, No. 1, 2008.
7. V.J. Gosbell "Unresolved Problems in Power Quality".
8. C. Benachaiba and B. Ferdi, "Power Quality Improvement Using DVR" American Journal of Applied Sciences 6 (3): 396-400, 2009.
9. Shairul Wizmar Wahab and Alias Mohd Yusof, " Voltage Sag and Mitigation Using Dynamic Voltage Restorer (DVR) System" ELEKTRIKA, VOL. 8, NO. 2, 2006, 32-37.
10. Rosli Omar,N.A. Rahim and 3Marizan Sulaiman, "Dynamic Voltage Restorer Application for Power Quality Improvement in Electrical Distribution System: An Overview" Australian Journal of Basic and Applied Sciences, 5(12): 379-396, 2011.
11. Sachin V. Rajani, 2Dr. R.C. Jha, 3Prem Prakash, "DEEPER AND EXTENDED VOLTAGE SAG MITIGATION BY DYNAMIC VOLTAGE RESTORERI NTERFACED WITH ULTRA CAPACITOR" International Journal of Advanced Engineering Technology, Vol.III/ Issue I/January-March, 2012/230-233.
12. Dr. K RAMA SUDHA, K PADMAVATHI, "MODELING AND SIMULATION OF DYNAMIC VOLTAGE RESTORER (DVR) USING NEURO FUZZY INFERENCE SYSTEM" International Journal of Engineering Science and Technology, Vol. 4 No.03 March 2012.
13. Mahmoud A. El-Gammal, Amr Y. Abou-Ghazala, and Tarek I. El-Shennawy, "Dynamic Voltage Restorer (DVR) for Voltage Sag

Mitigation" International Journal on Electrical Engineering and Informatics - Volume 3, Number 1, 2011.
14. Mr.Subhro Paul, Pradip Kumar Saha, Gautam Kumar Panda, "Power Quality Improvement Using New Control Algorithm Based Dynamic Voltage Restorer" International Journal of Advanced Research in Electrical, Electronics and Instrumentation Engineering, Vol. 1, Issue 3, September 2012.
15. M. E. C. Brito, M. C. Cavalcanti, L. R. Limongi and F. A. S. Neves, "Low Cost Dynamic Voltage Restorer" International Conference on Renewable Energies and Power Quality, 28th to 30th March, 2012.
16. B.Rajani, P.Sangameswara Raju," Enhancement of Power Quality by Optimal Placement of Dstatcom For Voltage Sag Mitigation Using Ann Based Approach" International Journal of Soft Computing and Engineering (IJSCE) ISSN: 2231-2307, Volume-2, Issue-3, July 2012.
17. T.Devaraju, Dr V.C.Veera Reddy, Dr M.Vijay kumar " Modelling and simulation of custom power devices to mitigate power quality problems" International Journal of Engineering Science and Technology Vol. 2(6), 2010, 1880-1885
18. Shairul Wizmar Wahab and Alias Mohd Yusof" Voltage Sag and Mitigation Using Dynamic Voltage Restorer (DVR) System" Elektrika , VOL. 8, NO. 2, 2006, 32-37
19. Rosli Omar and Nasrudin Abd Rahim "MITIGATION OF VOLTAGE SAGS/SWELLS USING DYNAMIC VOLTAGE RESTORER (DVR)" ARPN Journal of Engineering and Applied Sciences, VOL. 4, NO. 4, JUNE 2009
20. Chellali BENACHAIBA, Brahim FERDI "Voltage Quality Improvement Using DVR" Electrical Power Quality and Utilisation, Journal Vol. XIV, No. 1, 2008

**6.**

**Authors:** **Aashoo Bais, Kavita Deshmukh, Manish Shrivastava**

**Paper Title:** **Implementation of Decision Tree**

**Abstract:** Data mining is rich field of algorithms and data structures to arrange negotiate and navigate the information from the different source of data. There are various kind of mining approaches are developed and implemented to get the knowledge from the raw data. The application of this knowledge is used to enhance the research, organizational growth and others.
The data and its complexity is increases day by day in an explosive manner, and due to these complexity there are is a need to discover patterns and knowledge from the large data set. The conventional algorithm that are used to mine the patterns from data are becomes less effective due to the complexity of data. Due to this required to introduce some performance study and improvements over the conventional model to get efficient and effective data modeling technique.
In this paper we introduce a modification over the traditional algorithm ID3 and C4.5 to make capable the algorithms to work with large dataset with higher performance. Here we provide the implementation, performance analysis and conclusion after implementation of the work.

**Keywords:** data mining, modification, large datasets, performance issues, implementation, performance analysis.

**30-34**

**References:**
1. A Primer for Decision-making Professionals, By Rafael Olivas 2007, Rev. 5, 04/05/07.
2. Disadvantages to Using Decision Trees written by: N Nayab • edited by: Jean Scheid • updated: 2/9/2011
3. Rain Forest-A Framework for Fast Decision Tree Construction of Large Datasets Johannes Gehrk e Raghu Rama Krishnan Venkatesh Ganti Department of Computer Sciences, University of Wisconsin-Madison johannes,raghu,vganti @cs.wisc.edu
4. S.P. Curram and J. Mingers. Neural networks, decision tree induction and discriminant analysis: an empirical comparison. Journal of the Operational Research Society, 45:440–450, 1994.
5. Knowledge Extraction and Data Mining for the Competitive Electricity Auction Market M.-P. Cheong, Student Member, IEEE, G. B. Sheblé, Fellow, IEEE, and D. Berleant, Senior Member, IEEE
6. Ian H. Witten and Eibe Frank, Data Mining: Practical machine learning tools with Java implementations,, San Fransisco: Morgan Kaufmann, 2000

**7.**

**Authors:** **Manaj Dandapathak, Bishnu Charan Sarkar**

**Paper Title:** **Studies on the Dynamics of a Second Order PLL in the face of Two Input Signals**

**Abstract:** The Dynamics of a second order Phase locked loop (PLL) has been critically examined in the face of two co-channel input signals. Applying the analytical tool based on Melnikov's technique, a range of design parameters of the Phase locked loop has been obtained which ensures the stable loop dynamics. It is observed that the said range depends on the relative amplitude and frequency of the input signals. The analytical predictions are verified through numerical simulation results of the system equations.

**Keywords:** Phase locked loop, Melnikov's function, Voltage control oscillator.

**35-38**

**References:**
1. V.V.Shakhgildyan, L.N.Bellyustina, eds., "Phase locking systems [in Russian]", Radio I Svyaz, Moscow (1982), p-55.
2. L.M. Pecora and T.L. Carroll, Phys. Rev. Lett, 64, No. 8,821 (1990)
3. T. Endo, "A Review of Chaos and Nonlinear dynamics in Phase locked loop" IEEE Trans. Circuits & System, Vol.- 331B, No. 6, pp-859-902,1994
4. B.C. Sarkar and R. Hati, " Chaos from second order PLL in the presence of CW interference", Electron . Lett., vol.35, no,15, pp. 859-902, 1994.
5. T.Endo, L.O. Chua, "Chaos from phase locked loops" IEEE Trans. Circuits& Systems, vol. CAS-35, no.8, pp. 987-1003,1998.
6. Harb BA,& Harb AM, "Chaos and bifurcation in third order phase-locked loop", Chaos, Soliton Fractals, Vol.19, pp 667-672, 2004.
7. M.A.Lieberman and A.J. Lichtenberg, "Regular and Stochastic motion" Springer, Berlin.
8. P.J.Holmes and Jerrold. E. Marsden, " Melnikov's method and Arnold diffusion for perturbation of integrable Hamiltonian systems", Journal of Math,Phys, Vol. 23(4), pp -669-675, 1982
9. Simiu E, Melnikov process for stochasticall perturbed, slowly varing oscillator, application to a model of wind driven coastel currents", Journal of Applied Mechanics, Vol-63, pp-429-35, June,1996.
10. D.W. Joardan and P.Smith, "Nonlinear Ordinary Differential Equations: An Introduction for Scientist and Engineers" 4th edition, Oxford University Press, New York, 2007
11. R.C. Hilborn, "Chaos and Nonlinear Dynamics", 2nd edition, Oxford University Press, New York, 2000.
12. S.H. Strogatz, "Nonlinear Dynamics and Chaos", West View Press, 2007

**8.**

**Authors:** **K S Jagadeesh, Chandramouli.H, Naveen Ghorpade**

| | | | |
|---|---|---|---|
| | **Paper Title:** | **Design of Multimedia Application for Fast and Efficient Text Input from Touch Screen Input Devices using Character Recognition** | |
| | **Abstract:** We are wasting a lot of our time texting and typing messages through mobile's and keyboards, so we have come up with software which can recognize the set of character u scribble on the screen and make it visible in the normal times new roman format. This would save lot of our time as we write or scribble faster than typing through other input devices and more efficient user interface is also achieved. Character recognition is a task of determining handwritten characters /digits. This is done by having some of the sample sets of characters written by numerous people. The task entails matching the handwritten characters with characters in the sample set and determining the character in the sample set which best matches the Test Character. The aim of the second step of the recognition structure is to extract discriminant information from an image of a character, as well as to reduce its dimensions of representation. This reduction is required in order to make easier the conception of the classification system, when discriminant feature extraction allows to present competently a character to the classifier. This paper envisages using a number of benchmark datasets to carry out the task. The first step is a feature extraction. Features such as shape, orientation, outline, character frontiers etc, have to be extracted from the character image. The features are then used for the pattern classification task. The output gives the class to which the character belongs. The results obtained using neural networks was compared with other methods of classification for character recognition and classification provides highest accuracy of 96%.<br><br>**Keywords:** Feature extraction, transducer, Character Recognition, Pattern Recognition.<br><br>**References:**<br>1. E.Cohen, J.J.Hull, and S.N.Srihari. "Control Structure for interpreting handwritten Address" IEEE Transactions.<br>2. E.Cohen, J.J.Hull, and S.N.Srihari. "Understanding Handwritten Text in a Structured Environment" Proceedings of IEEE.<br>3. J.C.Simon O.Barat and N.Gorski."A System for Recognition of Handwritten" International Conference on Document Analysis System.<br>4. G.Kim and V.Govindaraju. "Bank check Recognition Using Cross Validation between Legal and Courtesy Amount" Automatic Bank check Processing, World Scientific pages.<br>5. S.N.Srihari, Y.C.Shin, V.Ramprasad and D.S.Lee. "Name and Address Block Reader" Proceedings of IEEE. | **39-42** |
| **9.** | **Authors:** | **Phani Madhav Yannam, P.V.Jayasri, K.Rameshbabu, Suraj Bharath.Chada** | |
| | **Paper Title:** | **Estimation of Doppler Centroid Frequency Using SAR Imaging Geometry for RISAT-2** | |
| | **Abstract:** Synthetic Aperture Radar (SAR) is an active microwave sensor which uses coherent imaging techniques to produce high-resolution images of the ground. One of the essential part of SAR Data Processing is the estimation of the Doppler parameters of the received data i.e., Doppler centroid frequency, Fdc. The methodology involves sequence of coordinate rotations and translations to get the radar beam's "view vector" into ECI coordinates. With satellite and target positions and velocities expressed in the same coordinate system, the velocities are projected along the beam vector to find the relative velocity, and then calculate Doppler centroid frequency.<br>The orbit of RISAT-2 is low inclination non-polar, non-sun synchronous orbit and the image data format is different. So, in order to implement the procedure for RISAT-2, the satellite attitude i.e., yaw and pitch are derived from squint angle available in Auxiliary file to arrive at the slant range from the target. A module to calculate the satellite hour angle for both ascending and descending pass has been successfully implemented and integrated into the algorithm which is critical in calculating Fdc.<br><br>**Keywords:** SAR, SAR Geometry, Doppler Centroid Frequency (Fdc), Imaging Range, RISAT-2<br><br>**References:**<br>1. G. Cummings, Frank H. Wong. Details of the Doppler Calculations, Digital Processing of Synthetic Aperture Radar, pp. 553-560.<br>2. W. L. Nelson and W. J. Cole, Autotrack Control Systems for Antenna Mounts with Non-Orthogonal Axes, The Bell System Technical Journal, September 1965, pp.1394-1397.<br>3. I. G. Cumming. Model- Based Doppler Estimation for Frame-Based SAR Processing. IN Proc. Int. Geoscience and Remote Sensing Symp., IGARSS'01, Vol. 6, pp. 2645-2647, Sydney Australia, July 2001<br>4. I. M. Yaglom and A. shields. Geometric Transformations. The Mathematical Association of America, 1962<br>5. C. Caffario, P. Guccione and A. Monti Gaurnieri. Doppler Centroid Estimation for ScanSAR Data. IEEE Trans. on Geoscience and Remote Sensing, 42(1), pp. 14-23, January 2004.<br>6. Lozier, J. C., Norton, J. A., and Iwama, M., The Servo System for Antenna Positioning, B.S.T.J. 42, July 1963, pp. 1253-1281<br>7. G. Cummings, Frank H. Wong. Digital Processing of Synthetic Aperture Radar.<br>8. http://www.asc-csa.gc.ca. | **43-51** |
| **10.** | **Authors:** | **Atul Kamble, Prasad Kadam, Hardik Bhangale** | |
| | **Paper Title:** | **A Survey on CIMDS: Adapting Post Processing Techniques of Associative Classification for Malware Detection** | |
| | **Abstract:** The Malware is program/software that damages or affects the computer system. Nowadays all the fields are computerized. So the valuable data is stored in computer. If the malware attacks on system then there may be chances of loss of data. Therefore it is very essential to provide security to system from Malware. A file that needs to be analyzed is called as Gray list. Along with Malware writing technique the number of gray list is increasing in large scale. In previous work IMDS (Intelligent Malware Detection System) had develop for malware detection. This system is based on analysis of API (Application Programming Interface) calls. But IMDS faces the two problems 1] Handling large set of generated rules to build classifier. 2] Finding the effective rules for classifying new file samples. In this paper we describe post processing techniques that are 1] Rule Pruning 2] Rule Ranking 3] Rule Selection. Then number of classification rule evaluation measures is considered. Here number of selection technique is used to order classification rule contained in classifier. This system is known as CIDCPF for malware detection. According to our knowledge this is first effort that uses post processing technique. It includes chi square, insignificant rule pruning. Then database coverage based upon chi square measure Rule Ranking mechanism is | **52-54** |

applied. Finally Performance Prediction is done by using Best First Rule.
From the experiment it is observed the promising result is obtained on gray list. As compared to other Anti viruses like McAfee, Virus scan, Norton this system gives best result. This indicates that the CIMDS system is more efficient and accurate for Malware detection. This system is data mining base detection system. In particular CIMDS system can greatly reduce the number of generated rules. This makes it easy for virus analyst to identify the useful ones.

**Keywords:** Malware, Association Classification, Antivirus, Rule Pruning, Rule Ranking, Rule Selection.

**References:**

1. Yanfang Ye, Tao Li, Qingshan Jiang, and Youyu Wang, "Adapting Post Processing Techniques of Associative Classification For Malware Detection", J. Comput. Virol., vol. 4, pp. 323–334, Jan. 2008.
2. Y. J. Wang, Q. Xin, and F. Coenen, "A novel rule ordering approach in Classification association rule mining," in Proc. 7th IEEE Int. Conf. Data Mining Workshops 2007, pp. 339–348.
3. U. Bayer, A. Moser, C. Kruegel, and E. Kirda, "Dynamic analysis of Malicious code," J. Comput. Virol., vol. 2, pp. 67–77, May 2006.
4. A. Sung, J. Xu, P. Chavez, and S. Mukkamala, "Static analyzer of vicious executables (save)," in Proc. 20th Annu. Comput. Security Appl. Conf., 2004, pp. 326–334.

**11.**

| **Authors:** | **N.Dhanasekar, Dr.R.Kayalvizhi** |
|---|---|
| **Paper Title:** | **Performance Evaluation of PI controller for Negative Output Triple Lift Luo Converter** |

**Abstract:**
The object of this paper is to design and analyze a Proportional – Integral (PI) control for negative output triple lift Luo converter (NOTLLC),which is the start- of –art-the DC-DC converter. The negative output triple lift Luo converter performs the voltage conversion from positive source voltage to Negative load voltage. In order to improve the dynamic performances of NOTLLC for both static and dynamic specifications, we propose a PI controller. The simulation model of the negative output triple lift Luo converter with its control circuit is implemented in Matlab/Simulink. The PI control for negative output triple lift Luo converter is tested for transient region, line changes, and load changes.

**Keywords:** DC-DC converter, Matlab, Negative output triple lift luo converter, Proportional Integral control simulink.

**55-57**

**References:**

1. F.L.Luo and H.Ye, "Positive output super lift converters," IEEE Transaction on power electronics, Vol.18, No. 1, pp. 105-113, January 2003.
2. K. Ramesh kumar and S. Jeevanantham." PI Control for positive output elementary super lift luo converter,'' World Academy of Science, Engineering and Technology. pp. 732-737, March 2010.
3. R. Kayalvizhi ,S.P.Natarajan and P.Padmaloshani" Development of a Neuro Controller for a Negative output Elementary Luo Converter" Journal of Power Electronics, Vol. 7, No. 2, April 2007
4. Fang Lin Luo and Hong Ye, Advanced DC/DC converters (CRC Press New York Washington D.C).
5. T. S. Saravanan , R. Seyezhai and V. Venkatesh "modeling and control of split capacitor type elementary additional series positive output super lift converter", ARPN Journal of Engineering and Applied Sciences, vol. 7, no. 5, may 2012.
6. P. Comines and N. Munro, "PID controllers: recent tuning methods and design to specification", in IEEE Proc. Control Theory Application, vol.149, no.1, pp.46-53, Jan 2002.
7. N.Dhanasekar, Dr.R.Kayavizhi "Design and simulation of PI control for positive output triple lift luo converter" International journal of modern engineering research, Vol 2,Issue 6,pp 4186 -4188,nov-dec 2012.

**12.**

| **Authors:** | **Noha Kamal, Sherine S. Ismail, Hala Abd ElKader and Mohamed Sharaf** |
|---|---|
| **Paper Title:** | **Telemetry Over SMS-Based GSM Wireless Communication System** |

**Abstract:** this study was performed to implement a modern wireless communication system for data collection and communication by using GSM Communication Network as a platform based on SMS. The system depends on EasyPIC5 microcontroller development board as a modern digital communication system together with a smartg100 (GSM) development boards; both development boards are developed and manufactured by mikroElektronika.
This system is used to measure the water level in a field, and implement telemetry over wireless communication network system which Present a solution for irrigation system as an application. In this research a Pressure Sensor (E-Tape Million Pressure sensor) and handmade sensor are used to measure water level value, and calibrating the results. Water level measurement system includes a control center (Base station), a GSM modems, and a telemetry unit (Sub Station), on the other hand the author developed friendly user interface for the wireless telemetry by means of Visual Basic which connect the base station with substations, and create a data base to save a historical data of measured water level. In this Research the author developed an alarm system by using buzzer and flashing leds to warn if there are any errors at any station. Compared to other telemetry systems, in this system the measured data does not sent continuously but it is only sent when the data value is changed, so it provides a minimum size of data reserved in the room service and reduce the cost, on the other hand the other systems send measured data continuously so it reserve the channel all the time and increase the cost. On the other hand in this system we have two way actions, and alarm system which determine the error, where, and how to fix.

**Keywords:** Telemetry, GSM Communication Network, Easypic5, SmartG100

**58-61**

**References:**

1. http://www.mikroe.com, 28 July 2012.
2. Loft, E.R., Evans, C.J., Ragotzkie, K.E., and J.G. Kie. 1989. Design and accuracy considerations for wildlife telemetry studies: some

examples from ungulates. Trans. West. Sect.Wildl. Soc. 25:91-97.
3. Keating, K.A. 1994. An alternative index of satellite telemetry location error. J. Wildl. Manage. 58:414-421.
4. Keating, K. A., Brewster, W. G., and Key, C. H. 1991. Satellite telemetry performance of animal-tracking systems. J. Wildl. Manage. 160-171
5. Boyle, Dan. "Long Distance Communications - Back to Ionization," International Defense Review, May 1988, pp. 127-29.
6. Vancil, Lloyd E. (1984), VHF meteor scatter communications. Ham Radio, p. 69-74, 119.
7. Crook, Arthur G. (1985), Operational experiences in meteor burst telemetry eight years of SNOTEL project observations. Intl. Assoc. Hydrol Sci.-Pub. No. 160, p. 411-418.
8. "RS232 Tutorial on Data Interface and cables". ARC Electronics. 2010. http://www.arcelect.com/rs232.htm. Retrieved 28 July 2011.
9. Available: http://www.halcyon.com/pub/journals/21ps03-vidmar

**13.**

**Authors:** Prasaanth.N, Parish Vyas, Rahul Tolani, Sandhya Pati

**Paper Title:** Advanced Aid for Visually Impaired for Reading Text Online

**Abstract:** The tremendous growth in technology in today's world has made it feasible to provide the visually impaired with means that enable them to use the computer and all associated technologies like the internet for the same functions as others do. The Human Computer Interaction (HCI) aspects involved in making a computing device available to a visually impaired person differ largely from that for a normal person using a computer. This paper provides detailed information about a developed application which would enable and facilitate the visually impaired in connecting to the e-world. Our paper is an advanced and extensive description of this application that allows them to read websites online through the conversion of text to Braille language. This application has a special feature of voice commands through which user can give input in the form of speech as well as obtain the output in the form of speech. A previous paper on the same is the technical description of the previously developed system. This paper is a proposed and advanced model of the developed system highlighting its flaws and deficiencies and suggesting comprehensive changes and how to implement the same in the application design and construction of the original application.

**Keywords:** Braille, Computer Applications, Human Computer Interaction, Voice Commands.

**References:**

1. Aid for Visually Impaired for Reading Text Online by Prasaanth.N, Rahul Tolani, Parish Vyas.
2. http://www.fcrit.ac.in/ncnte2012/library/comp_papers/paper15.pdf?.rxn=55113228
3. Beginning Braille: A Whole Language-based Strategy by G. Lamb.
4. A Primary Reading Program for Beginning Braille Readers- a white paper by Hilda Caton , Journal of Visual Impairment and Blindness, Vol. 73, No. 8,October 1979, 309
5. The Computerized Braille Tutor: A Computer-based Braille Learning Program by G. Kapperman, A. Heinze, B.B. Hawkins, S. Ruconich.
6. Computerized Braille typesetting: another view of mark-up standards http://www.medicaltalking.com/braille/19479-computerized-braille-typesetting- another-view-mark-up-standards.html
7. http://www.rsb.org.au/Our_Services/Adaptive_Technology/Braille_ quipment/Braille_Hardware.aspx.
8. http://en.wikipedia.org/wiki/Text_Processing_Utility

**62-66**

**14.**

**Authors:** **Shafii Abdullah, Nor Hayati Abdul Hamid**

**Paper Title:** **Modelling of Turbine-generator and Foundation as Single Degree of Freedom Using Ruaumoko Programme**

**Abstract:** A rigid-moment frame supporting the turbine-generator was designed according to BS 8110. This structure is subjected to vibrations of turbine-generators and seismic loading. Turbine-generator with its foundation is model as a single degree of freedom (SDOF) using RUAUMOKO program. RUAUMOKO program is employed in this study to analysis non-linear dynamic behaviour of turbine foundation using time-history analysis and Modified Takeda Model. Mode shape, natural period, natural frequency, nodal displacement, member forces and moment of reinforced concrete turbine foundation were obtained by running this program. The result shows that turbine foundation under Imperial Valley earthquakes does not exceed yield drift limit for monolithic connection and remain within the elastic condition. Thus, RC turbine foundation is safe and able to carry gravity load as designed according to BS 8110. Contradictory, turbine foundation experience exceeding yield drift limit but it is not safe and likely to collapse under San Fernando earthquake loading.

**Keywords:** turbine-generator, turbine foundation,non-linear dynamic analysis, time-history analysis, yield drift limit.

**References:**

1. Livshits, A. (2010), Dynamic Analysis and Structural Design of Turbine Generator Foundation, European Built Environment CAE Conference, London.
2. Bhatia, K.G. (2008), Foundations for Industrial Machines and Earthquake Effects, ISET Journal of Earthquake Technology, Paper No. 495, Vol. 45, No. 1-2, March-June 2008, 13-29.
3. Carr, A.J. (2007), Ruaumoko Manual (Vol. 1, Vol. 2, Vol. 3, Vol. 4 and Vol. 5), University of Canterbury, Christchurch, New Zealand.
4. Sulaiman, E.A. (2010), Modeling Performance of 3-Storey Precast Tunnel Form Building (IBS) Using Ruaumoko Program, Master Dissertation, Faculty of Civil Engineering, University Teknologi MARA, Malaysia.
5. Chopra, A.K. (2007), Dynamic of Structures, Theory and Applications to Earthquake Engineering, Pearson Prentice Hall, Upper Saddle River, New Jersey.
6. British Standards (1997), Structural Use of Concrete BS 8110, Part 1: Code of Practice for Design and Construction, British Standard Institution, London.

**67-76**

**15.**

**Authors:** **Md. Sadak Ali Khan, A.Suresh, N.Seetha Ramaiah**

**Paper Title:** **Analysis of Magneto Rheological Fluid Damper with Various Piston Profiles**

**Abstract:** Control of seismic, medical and automobile vibrations represents a vast area of research that is growing rapidly. Magneto rheological (MR) dampers are a new class of devices that match well with the requirements and constraints of applications, including the necessity of having very low power requirements. The performance of MR

**77-83**

damper depends on its magnetic and hydraulic circuit design. In this paper a finite element model is used to examine and investigate the 2- D axi-symmetric MR damper. Nine different configurations of piston for MR damper are simulated in order to investigate how the profile of the piston affected the maximum pressure drop that the damper could provide. The piston velocity and the input current to the coil are varied to evaluate the resulting change in magnetic flux density (B) and pressure drop (ΔP). The simulation results of the different configuration of piston show that the performance of single coil with filleted piston ends was better than that of other configurations for the same magnitude of input current and piston velocity.

**Keywords:** Magneto-rheological (MR) fluid, MR damper, Magnetic flux density, magnetic field intensity.

**References:**

1. Hiroshi Sodeyama,Kohei Suzuki,Katsuaki Sunakoda "Development of Large Capacity semi- active Seismic damper using Magneto – Rheological Fluid", Journal of Pressure Vessel Technology, Vol. 126 ,pp 105-109,Feb 2004
2. Maher Yahya Salloom & Zahurin Samad "Finite element modeling and simulation of proposed design magneto-rheological valve" International Journal advanced manufacturing Technology, Vol 54 numbers 5-8,pp421 – 429, May2011
3. H.yoshioka, J.C. Ramallo, B.F. Spencerdol;"Smart Base Isolation strategies Employing Magnetorheological Dampers" Journal of engineering mechanics, pp 540-551May 2002
4. Laura M, Jansen and Shirley J. Dyke "Semi active control strategies for MR Dampers Comparative Study "Journal of Engineering Mechanics, Vol. 126, No. 8, pp795-803, August 2000
5. B.F. Spencer Jr., S.J. Dyke, M.K. Sain and J. D. Carlson "Phenomenological Model for Magnetorheological Damper" Journal of engineering mechanics Vol.123, No. 3,pp230-238, March, 1997
6. N.Seetharamaiah, Sadak Ali Khan and K.Narayanarao, "Design of Small Capacity MR Fluid Damper" International Journal on Mechanical and Automobile Engineering Vol. 01, N0.1 , Nov. 2008-, 29-36,pp29-36, Jan2009
7. Chun-Yu lai and W.H. Liao "Vibration Control of a Suspension system via Magneto rheological Fluid Damper" Journal of Vibration and Control, Vol 8, pp527-547, 2002
8. Butz.T and Von Stryk.O "Modelling and simulation of Electro and Magnetorheological fluid dampers", zamm, Vol. 82, No. 1, pp. 3-20, 2002
9. Laura M, Jansen and Shirley J. Dyke "Semi Active Control Strategies for MR Dampers: Comparative study", Journal of engineering mechanics, Vol.126 No.8, pp 795-803, Aug2000
10. Henri GAVIN, Jesse HOAGG and Mark DOBOSSY "Optimal Design of MR Dampers" Smart structures for improved Seismic performance, pp225-236, Aug2001

**16.**

| | |
|---|---|
| **Authors:** | **Manisha Sharma, Vandana Chouhan** |
| **Paper Title:** | **Objective Evaluation Parameters of Image Segmentation Algorithms** |

**Abstract:** Image segmentation is the process of partitioning an image into multiple segments, so as to change the representation of an image into something that is more meaningful and easier to analyze. Several general-purpose algorithms and techniques have been developed for image segmentation. However ,evaluation of segmentation algorithms thus far has been largely subjective , leaving a system designer to judge the effectiveness of a technique based only on intuition and results in the form of few example segmented images .This is largely due to image segmentation being a ill defined problem-there is no unique ground truth segmentation of an image against which the output of an algorithm may be compared .There is a need for researchers to know on what parameters there suggested techniques can be evaluated .In this paper we have surveyed 100 papers to present various evaluation parameters. This paper presents 13 performance evaluation parameters that can be used to perform a quantitative comparison between image segmentation.

**Keywords:** Segmentation, MRI.

**References:**

1. Dr. S.V Kasmir Raja, A ,Shaik Abdul Kadir,"Moving towards region –based image segmentation techniques –a study ", Journal of theoretical and applied information technology,
2. D .Jayadevappa, S.Srinivas.Kumar and D.S Murty,"A hybrid segmentation model based on watershed and gradient vector flow for the detection of brain tumor."International journal of signal processing, image processing and pattern recognition, vol2, no.3, sept 2009.
3. Dr.S.Padamavati,Dr.P.Subashini,Mrs.A.Sumi,"Empirical Evaluation of suitable segmentation algorithm for IR Images", IJCSI, Vol7, Issue4, No.2, July2010
4. S.L.A Lee, A.Z.Kouzani, E.J.Hu," Empirical Evaluation of segmentation algorithms for lung modeling", 2008 International conferences on systems, man and cybernetics (SMC 2008)
5. Hossein Mobahi,Shankar R.Rao, Allen.Y.Yang, Shanker.S.Sastry, Yi Ma," International journal of computer vision
6. Jifeng Ning,Lei Zhang, David Zhang,Chengke Wu," Interactive image segmentation by maximal similarity based region merging", Pattern recognition 43(2010)445-456.
7. Francisco J.Estrada and Allan D. Jepson," Quantitative Evaluation of a novel image segmentation algorithm.
8. K.Selvanayaki,Dr.M.Karnan," CAD system for automatic detection of brain tumor through magnetic resonance image –a review., International journal of engineering science and technology vol 2(10)2010,5890-5901.
9. Anjum Sheikh, R.K.Krishna, Subroto Dutt," Energy efficient approach for segmentation of brain tumor using ant colony optimization", ijctee volume 1,I ssue3.
10. Alejandro Veloz, Antonio Orellana, Juan Vielma, Rodrigo Salas and Steren Chabert," Brain tumors: How can images and segmentation techniques help?".
11. Michael R Kaus, Simon K warefield," Automated segmentation of MRI of brain tumors".
12. Bhagwati Charen Patel and GR Sinha," Comparative performance evaluation of segmentation methods in breast cancer images", IJMI 0975-2927 Volume3 Issue 3 2011,130-133
13. Allan Hanbury, Julian Stottinger," On segmentation evaluation metrics and region count"
14. Qingqiang Yang, Wenxiong Kang," General research on image segmentation algorithms", I.J Images, graphics and signal processing 2009, 1, 1-8.
15. B.Sathya, R.Manavalan," Image segmentation by clustering methods: performance analysis", International Journal of computer applications vol 29-no 11, sept 2011.
16. Rajeshwar Dass,Priyanka, Swapna Devi," Image segmentation techniques", IJCET VOL3 Issue 1 Jan 2012'
17. Zhou Wang, Alan C.Bovik, Hamid .R.Sheikh, Eero. P.Simoncelli," Image quality assessment: from error visibility to structural similarity", IEEE Transactions on image processing, vol.13 no.4, April 2004.
18. Ritu Agrawal, Prof. Manisha Sharma," Comparison and analysis of fuzzy clustering techniques for color image segmentation in terms of

PSNR and accuracy", International journal of advanced research in computer science vol 2, no. 6 Nov-Dec 2011.
19. Malik Sikander Hayal Khiyal, Aihab Khan and Amna Bibi," Modified watershed algorithm for segmentation of 2D images", Information Science and information technology, vol. 6, 2009.
20. Bjoern H Menze, Koen Van Leempul, Danial Lashkari," A generative model for brain tumor segmentation in multi-modal images"
21. Vijay Kumar Chinnadurai, Gharpure Damayanti Chandrashekhar," Improvised levelset method for segmentation and grading of brain tumors in dynamic contrast susceptibility and apparent diffusion coefficient magnetic resonance images", International journal of engineering science and technology , vol.2(5), 2010, 1461-1472.
22. Kaihua Zhang, Huihuisong, Lei Zhang," Active contours driven by local image fitting energy", Pattern recognition October 2009.
23. Kaihua Zhang, LeiZhang, Huihuisong, Wengang Zhou," Active contours with selective local or global segmentation: A new formulation and levelset method"
24. T.Logeswari and M. Karnan ," An enhanced implementation of brain tumor detection using segmentation based on soft computing", International journal of computer theory and Engineering vol.2, no. 4 Aug 2010,1793-8201.
25. Li Wang, Chunming Li, Quansen sun,Deshen Xai and Chiu-Yen Kao,"Brain MR Image Segmentation using local and global intensity fitting active contours/surfaces"
26. Chunming Li, Chiu-Yen Kao,JohnC .Gore and Zhaohua Ding,"Implicit active contours driven by local binary fitting energy"
27. Hassan Khotanlou, Olivier Colliot, Jamal Atif and Isabella Bloch,"3D brain tumor segmentation in MRI using fuzzy classification, symmetry analysis and spatially constrained deformable models", Fuzzy sets and systems 160(2009)1457-1473.
28. Chuin-Mu Wang, Ruey –Maw Chen,"Vector seeded region growing for parenchyma classification in brain MRI" , International journal of advancements in computing technology", volume 3, no.2, March2011.
29. K.Aloui and M.S Naceur,"3D brain tumor segmentation using level sets method and meshes simplification from volumetric MR images."' World academy of science, Engineering and technology 57, 2009.
30. Jianbo Shi and Jitendra Malik," Normalized cuts and image segmentation ", IEEE transaction on pattern analysis and machine intelligence vol.22, no. 8 Aug 2000.
31. T.Logeswari and M.Karnan,"An improved implementation of brain tumor detection using segmentation based on soft computing", Journal of cancer research and experimental oncology vol2 (1) pp006-041, Mzrch2010.
32. P.Tamijeselvy, V.Palanisamy, T.Purusothaman," Performance analysis of clustering algorithms in brain tumor detection of MR Images, European journal of scientific research ,I SSN1450-216X,VOL.62.No.3(2011), 321-330.

| | | |
|---|---|---|
| **Authors:** | **Manoj Singhal** | |
| **Paper Title:** | **Binary Decision Diagram based Reliability Evaluation** | |

**Abstract:** In this paper, I have considered a computer communication network which has perfect vertices and imperfect links. It means communication links may fail with known probability. I have found the reliability of the given network by using an exact method (inclusion-exclusion formula) and with binary decision diagram. I have found that the reliability obtained by both the method is same. Binary decision diagram based reliability evaluation involves three main steps. First ordering the given communication link by applying a heuristic approach. I have proposed a heuristic approach to generate the minimum size binary decision diagram. Second generate the reliability function with the help of min-paths from source to sink. At last apply Shannon's decomposition to compute the reliability of the given network.

**Keywords:** Binary Decision Diagrams (BDD), Directed Acyclic Graph (DAG), Computer communication Network (CNN), Modified Binary Decision Diagram (MBDD), Ordered Binary Decision Diagram (OBDD), Dual Binary Decision Diagram (DBDD).

**References:**

1. Bobbio, Andrea, Ferraris, Caterina, Terruggia, Roberta.: New Challenges in Network Reliability Analysis. Technical Report, TR-INF-UNIPMN, . 1--8 (2006).
2. Rauzy, A.: New algorithms for fault tolerant trees analysis. Reliability Engineering and System Safety, vol. 5, no. 59 . 203--211(1993).
3. Rauzy, A.: A new methodology to handle Boolean models with loops. IEEE Trans. Reliability. vol. R-52. no. 1. 96--105 (2003).
4. Satyanarayana, A, Chang, M. K.,: Network reliability and the factoring theorem. Networks. vol. 13. 107--120 (1983).
5. Akers, B.: Binary decision diagrams. IEEE Trans. Computers. vol. C-27. .509--516 (1978).
6. Lucet, C. Manouvrier, J.-F.: Exact methods to compute network reliability. in Statistical and Probabilistic Models in Reliability. D. C. Ionescu and N. Limnios. Eds. Birkhauser Boston. 279--294 (1999).
7. Yeh, F., Lu, S., Kuo, S.: OBDD-based evaluation of k-terminal network reliability. IEEE Trans. Reliability. vol. R-51 no. 4. 443--451 (2002).
8. Hardy, G., Lucet, C., Limnios N.: Computing all-terminal reliability of stochastic networks with binary decision diagrams. In: Proc.11th International Symposium on Applied Stochastic Models and Data Analysi. pp. 1468--1473 (2005).
9. Imai, H., Sekine, K., Imai, K.: Computational investigations of all terminal network reliability via BDDs. IEICE Transactions on Fundamentals. vol. E82-A no. 5. 714--721 (1999).
10. Carlier, J., Lucet, C.: A decomposition algorithm for network reliability evaluation. Discrete Applied Mathematics. vol. 65. 141--156 (1996).
11. Gadani, J. P.: System effectiveness evaluation using star and delta transformations. IEEE Trans. Reliability. vol. R-30 no. 1. 43--47 (1981).
12. Provan, J. S.: The complexity of reliability computations on planar and acyclic graphs. SIAM J. Computing. vol. 15 no. 3. 694--702 (1986).
13. Choi, M. S., Jun, C. H.: Some variant of polygon-to-chain reductions in evaluating reliability of undirected network. Microelectron Reliability. vol. 35 no. 1. 1--11 (1985).
14. Singhal, Manoj, Chauhan R. K., Sharma, Girish.: "Computing Network Reliability with Imperfect Nodes Using Modified Binary Decision Diagram", International Journal of Advances in Engineering and Technology, Vol. 3, issue 2, May 2012.
15. Singhal, Manoj, Chauhan R. K., Sharma, Girish.: "Binary Decision Diagrams and Its Variable Ordering for Disjoint Network", International Journal of Advanced Networking and Applications", Vol. 3, issue 6, pp. 1430 – 1437, May-June 2012
16. Singhal, Manoj, Chauhan R. K., Sharma, Girish.: "A New approach for finding the Various Optimal Variable Ordering to generate the Binary Decision Diagrams (BDD) of a Computer Communication Network", International Journal of Computer Applications, Vol. 31, No.3, pp. 1-8, Oct. 2011.
17. Singhal, Manoj, Chauhan R. K., Sharma, Girish.: "Network Reliability Computation using Different Binary Decision Diagrams", International Journal of Distributed and Parallel Systems, Vol. 1, No. 1, pp. 82-91, September 2010.
18. Singhal, Manoj, Chauhan R. K., Sharma, Girish.: "A New Optimal Approach for evaluating the size of BDD (Binary Decision Diagram) for calculating the Reliability of a CCN (Computer Communication Network)", International Journal of Advanced Networking and Applications, Vol. 1, issue 4, pp. 230-235, Jan-Feb 2010.
19. Singhal, Manoj, Chauhan R. K., Sharma, Girish.: "Use of Modified Binary Decision Diagrams in Reliability Evaluation of a Directed Computer Communication Network", The IUP Journal of Computer Sciences, Vol. III No. 3, pp. 22-30, July 2009.
20. Singhal, Manoj, Chauhan R. K., Sharma, Girish.: "Effects of Variable Ordering on Binary Decision Diagrams for Computation of Reliability of a Computer Communication Network" Journal of Computer Science, Vol. 4, issue 6, Sep-Oct 2010.

21. Singhal, Manoj, Chauhan R. K., Sharma, Girish.: "An Alternate Approach to Compute the Reliability of a Computer Communication Network Using Binary Decision Diagrams", Communications in computer and Information Science, Vol. 94, part 4, pp.160-170 Springer-verlag Berlin Heidelberg 2010.
22. Coudert, O. Madre, J. C.: Implicit and incremental computation of primes and essential primes of Boolean functions. In: Proc. of the 29th ACM/IEEE Design Automation Conference, pp. 36--39 (1992).
23. Theologou, O. Carlier, J.: Factoring and reductions for networks with imperfect vertices. IEEE Trans. Reliability. vol. R-40 210--217 (1991).
24. Bryant, R. E.: Symbolic Boolean manipulation with ordered binary-decision diagrams. ACM Computing Surveys. vol. 24 no. 3. . 293--318 (1992).
25. Wood, R. K.: A factoring algorithm using polygon-to-chain reductions for computing K-terminal network reliability. Networks vol. 15. 173--190 (1985).
26. Hariri, S., Raghavendra, C. S.: SYREL- A symbolic reliability algorithm based on path and cut set methods. IEEE Trans. Computers. vol. C-36 no. 10. 1224--1232 (1987).
27. Ahmad, S. H.: Simple enumeration of minimal cut sets of acyclic directed graph. IEEE Trans. Reliability. vol. R-27 no. 5. 484--487 (1988)..
28. Friedman, S. J., Supowit, K. J.: Finding the optimal variable ordering for binary decision diagrams. In: Proc. 24th ACM/IEEE Conference on Design Automation, pp.348–356 (1987).
29. Friedman, S. J., Supowit, K. J.: Finding an optimal variable ordering for binary decision diagrams. IEEE Trans. Computers. vol. C-39 no. 5. 710--713 (1990).
30. Zang, X., Sun H., Trivedi K. S.: A BDD-based algorithm for reliability Graph Analysis. Technical Report [Online]. http://www.ee.duke.edu/~hairong/workinduke/relgrap.

**18.**

**Authors:** **Nikhil Talele, Ajinkya Shukla, Sumant Bhat**

**Paper Title:** **Can Quantum Computers Replace the Classical Computer?**

**Abstract:** The first computer originated as an ordinary calculator in 19th century. Subsequently, the rapid evolution of computers began. The massive amount of processing power generated by computer manufacturers has always failed to quench the thirst for speed and computing capacity. If, as Moore's Law states, the number of transistors on a microprocessor continues to double every 18 months, then soon we will find the circuits on a microprocessor being measured on an atomic scale. Today's advanced lithographic techniques can squeeze fraction of micron wide logic gates and wires onto the surface of silicon chips. Thus it can be seen that very soon we will be facing the need to create quantum computers which can harness the power of atoms and molecules to perform memory and processing tasks. Quantum computers have the potential to perform calculations a billion times faster than any silicon-based computer. Also, theories suggest that every physical object, even the universe, is in some sense a quantum computer. If this is the case, then according to Turing's work which says that all computers are functionally equivalent; computers should be able to model every physical process. Scientists have already built basic quantum computers that can perform certain calculations; but a practical quantum computer is still years away. In this paper, we will be discussing about the history, development and the future scope of quantum computing. The pros and cons of this future technology have also been compared and our analysis has been put forth.

**Keywords:** Quantum Computing, history, current trends, advantages, disadvantages, applications, future scope.

**93-96**

**References:**

1. D. Deutsch, Proc. Roy. Soc. London, Ser. A 400, 97 (1985).2. R. P. Feynman, Int. J. Theor. Phys. 21, 467 (1982).
2. J. Preskill, "Battling Decoherence: The Fault-Tolerant Quantum Computer," Physics Today, June (1999).
3. Shor, P. W., Algorithms for quantum computation: Discrete logarithms and factoring, in Proceedings of the 35th Annual Symposium on Foundations of Computer Science, IEEE Computer Society Press (1994).
4. Nielsen, M., "Quantum Computing," (unpublished notes) (1999).
5. QUIC on-line, "Decoherence and Error Correction," (1997).
6. D.G. Cory et al., Physical Review Letters, 7 Sept 1998.
7. J. Preskill, "Quantum Computing: Pro and Con," quant-ph/9705032 v3, 26 Aug 1997.
8. Chuang, I. L., Laflamme, R., Yamamoto, Y., "Decoherence and a Simple Quantum Computer," (1995).
9. D. Deutsch, A. Ekert, "Quantum Computation," Physics World, March (1998).
10. "The Quantum Computer An Introduction" by Jacob West, April, 28, 2000.
11. "Breakthrough in development of quantum computers - A Hitachi-Cambridge team develops a new silicon qubit", (News releases), August 19, 2005.
12. International journal of scientific & technology research volume 1,"Revealing New Concepts In Cpytography & Clouds"", issue 7, August 2012.
13. "I.B.M. Researchers Inch Toward Quantum Computer", Kenneth Chang, February 28, 2012.
14. "Quantum Cryptography", Artur Ekert.
15. "Will Computers Take A Quantum Leap?", Seth Lloyd

**19.**

**Authors:** **N. Janardhan, P.Ushasri, M.V.S. Murali Krishna, P.V.K.Murthy**

**Paper Title:** **Performance of Biodiesel in Low Heat Rejection Diesel Engine with Catalytic Converter**

**Abstract:** Investigations were carried out to evaluate the performance of a low heat rejection (LHR) diesel engine consisting of air gap insulated piston with 3-mm air gap, with superni (an alloy of nickel) crown and air gap insulated liner with superni insert with different operating conditions of jatropha oil based bio-diesel with varied injection timing and injection pressure. Performance parameters were determined at various values of brake mean effective pressure (BMEP) of the engine. The effect of void ratio, temperature of catalyst, space velocity on the reduction of oxides of nitrogen (NOx) in the exhaust of the engines was studied. Exhaust emissions of smoke and oxides of nitrogen (NOx) were determined at various values of BMEP. The emission levels of NOx in LHR engine were controlled by means of the selective catalytic reduction technique using lanthanum ion exchanged zeolite (catalyst-A) and urea infused lanthanum ion exchanged zeolite (catalyst-B) with different versions of the engine at peak load operation of the engine. Conventional engine (CE) showed deteriorated performance, while LHR engine showed improved performance with bio-diesel at recommended injection timing of 27obTDC (before top dead centre) and pressure of 190 bar. The performance of both version of the engine improved with advanced injection timing and higher injection pressure when compared with CE with pure diesel operation. Peak brake thermal efficiency

**97-109**

increased by 10%, smoke levels decreased by 15% and NOx levels increased by 41% with vegetable oil operation on LHR engine at its optimum injection timing, when compared with pure diesel operation on CE at 27obTDC and 190 bar. NOx emissions reduced by 40-50% by this technique with catalyst-A and catalyst-B.

**Keywords:** Alternate fuels, Brake thermal efficiency, Catalytic reduction, Exhaust gas temperature.

**References:**


1. Ramadhas, A.S.S., Jayaraj, S. and Muraleedharan, C., "Use of vegetable oils as I.C. engine fuels-A review", Renewable Energy, 29, 2004, pp.727-742.
2. Pugazhvadivu, M. and Jayachandran, K., "Investigations on the performance and exhaust emissions of a diesel engine using preheated waste frying oil as fuel", Renewable energy, 30(14), 2005, pp.2189-2202.
3. Agarwal, D. and Agarwal, A.K, "Performance and emissions characteristics of jatropha oil (preheated and blends) in a direct injection compression ignition engine", Int. J. Applied Thermal Engineering, 27, 2007, pp.2314-23.
4. Surendra, R, K. and Suhash, D.V, "Jatropha and karanj bio-fuel: as alternate fuel for diesel engine", ARPN Journal of Engineering and Applied Science, 3(1), 2008.
5. Misra, R.D. and Murthy, M.S, "Straight vegetable oils usage in a compression ignition engine—A review", Renewable and Sustainable Energy Reviews, 14, 2010, pp. 3005–3013.
6. Murali Krishna, M.V.S, "Performance evaluation of low heat rejection diesel engine with alternate fuel", PhD Thesis, J. N. T. University, Hyderabad, 2004.
7. Shailendra Sinha and Avinash Kumar Agarawal., "Performance evaluation of a biodiesel (rice bran oil methyl ester) fuelled transportation diesel engine", 2005, SAE Paper No. 2005-01-1730.
8. Gajendra Babu, M.K., Chandan Kumar. and Lalit M. Das., "Experimental investigations on a karanja oil methyl ester fuelled DI diesel engine", 2006, SAE Paper No. 2006-01-0238.
9. Raheman, H. and Ghadege, S.V., "Performance of compression ignition engine with mahua bio diese", Fuel, 86, 2007, pp.2568-2573.
10. Banapurmath, N.R., Tewari, P.G. and Hosmath, R.S., " Performance and emission characteristics of direct injection compression ignition engine operated on honge, jatropha and sesame oil methyl ester" Journal of Renewable energy, 33, 2008, pp.1982-1988
11. Murugesan, A., Umarani, C., Subramanian,R. and Nedunchezhian, N., "Bio-diesel as an alternate fuel for diesel engine", Renewable and Sustainable Energy Reviews, 13(3), 2009, pp.653-662
12. Sahoo, P.K., Das, L.M.,Babu, M.K.G., Arora, P., Singh, V.P., Kumar, N,R. and Varyani, T.S., "Comparative evaluation of performance and emission characteristics of jatropha, curanja and polanga based biodiesel as fuel in tractor engine", Fuel, 88(9), 2009, pp.1698-170.
13. Mustafa Canakei, Ahmet Necati Ozsezen, Erol Areaklioglu. and Ahmet Erdil., "Prediction of performance and exhaust emissions of a diesel engine fueled with biodiesel produced from waste frying oi", Expert systems with Applications, 36 (5), 2009, pp.9268-9280.
14. Venkatramn. and Devaradjane, G., "Experimental investigation of performance and emission characteristics of diesel-pungam oil , methyl esters diesel blends fueled DI engine at optimum engine operating parameter", International Journal of Green energy and environment, 1, 2010, pp.7-12.
15. Taymaz., Cakir, K., Gur, M. and Mimaroglu,A., "Experimental investigation of heat losses in a ceramic coated diesel engine", Surface and Coating Technology, 169 (2), 2003, pp.168-170.
16. Saad, P., Kamo,L., Mekari, M. and Bryzik, W., "Ceramic Coated Piston Rings for Internal Combustion Engine", ASME Paper WTC 2005-64343, World Tribology Congress III-2005.
17. Saad, D., Saad,P., Kamo, L., Mekari,M., Bryzik,W., Schwarz,E. and Tasdemir,J., "Thermal barrier coatings for high output turbocharged diesel engine", 2007, SAE Paper No. 2007-01-1442.
18. Kamo, L., Saad, D., Saad, P., Bryzik, W. and Mekari, M., " Diesel engine cylinder bore coating for extreme operating conditions", 2007, SAE Paper No. 2007-01-1439,
19. Parlak, A., Yasar, H. and Idogan O., "The effect of thermal barrier coating on a turbocharged Diesel engine performance and exergy potential of the exhaust gas", Energy Conversion and Management, 46(3), 2005, pp. 489–499.
20. Ekrem Bu¨yu¨kkaya, Tahsin Engin and Muhammet Cerit., "Effects of thermal barrier coating on gas emissions and performance of a LHR engine with different injection timings and valve adjustments", Energy Conversion and Management, 47, 2006, pp.1298–1310.
21. Ciniviz, M., Hasimoglu, C., Sahin, F. and Salman, M. S., "Impact of thermal barrier coating application on the performance and emissions of a turbocharged diesel engine", Proceedings of the Institution of Mechanical Engineers Part D-Journal of Automobile Engineering, 222 (D12), 2008, pp.2447–2455.
22. Hanbey Hazar., "Effects of bio-diesel on a low heat loss diesel engine", Renewable Energy, 34, 2009, pp.1533–1537.
23. Rajendra Prasath, B. P. Tamilporai, P. and Mohd.Shabir, F., " Analysis of combustion, performance and emission characteristics of low heat rejection engine using biodiesel", International Journal of Thermal Science, 49, 2010, pp.2483-2490.
24. Modi, A.J. and Gosai, D.C., "Experimental study on thermal barrier coated diesel engine performance with blends of diesel and palm bio-diese", SAE International Journal of Fuels and Lubricants, 3 (2), 2010, pp.246-259.
25. Can Haşimoğlu. Murat Ciniviz., Adnan Parlak., İbrahim Özsert. and Yakup İçingür., "Part load performance characteristics of a low heat rejection diesel engine fuelled with biodiesel", Journal of Energy Engineering, 137(2), 2011, pp.37-42
26. Mohamed Musthafa, M., Sivapirakasam, S.P. and Udayakumar, M., "Comparative studies on fly ash low heat rejection diesel engine on performance and emission characteristics fueled by rice bran and pongamia methyl ester and their blend with diesel", Journal of energy, 86, pp. 2343-2351.
27. Parker, D.A. and Dennison, G. M., 1987, "The development of an air gap insulated piston", SAE Paper No. 870652
28. Bhaskar, T., Nagalingam, B. and Gopala Krishan, K.V., 1993, "The effect of two ignition improving additives on the performance of jatropha oil in low heat rejection diesel engine", 4th International Conference on Small Engines and their Fuels, Thailand, 1993, pp14-19.
29. Rama Mohan, K., "Performance evaluation of air gap insulated diesel engine with pure diesel", PhD Thesis, Kakatiya University, Warangal, 1995.
30. Rama Mohan, K., Vara Prasad, C.M., Murali Krishna, M.V.S., 1999. "Performance of a low heat rejection diesel engine with air gap insulated piston", ASME Journal of Gas Turbine and Power, 121, 1999, pp.530-540.
31. Krishna Murthy, P.V., 2010, "Studies on low heat rejection diesel engine with bio-diesel", PhD Thesis, J.N.T. University, Hyderabad, 2010.
32. Fulekar, M. H., 1999, "Chemical pollution – a threat to human life", Indian Journal of Environmental Protection, 1, 1999, pp.353-359.
33. Sharma, B.K., "Engineering Chemistry", Pragathi Prakashan (P) Ltd, Meerut, 2005.
34. Khopkar, S.M., "Environmental Pollution Analysis", New Age International (P) Ltd, Publishers, New Delhi, 2004.
35. Herzog, P.P, et al., "NOx reduction strategies for DI diesel engine", SAE Paper No 920470, 1992.
36. Ghosh, B.B. and Nag, P., "NOx reduction in S.I. engine exhaust using zeolite with urea infusion", Proceedings of 15th National Conference I.C Engines and Combustion. Chennai, 1997, pp.357-362.
37. Yvonne, T., Beate,B. and Weitkamp., " Microporous and Mesoporous materials", 30(3), 1999.
38. Lin, H. and Steven, B.O., "Reduction of NOx in diesel exhaust of gases and fuel injection systems", US Patent 6919047, 2005.


| | | | |
|---|---|---|---|
| **20.** | **Authors:** | **E. Suresh Kumar, Bijan Sarkar** | |
| | **Paper Title:** | **Proportional Hazards Modeling of Environmental Impacts on Reliability of Photovoltaic Modules** | |
| | **Abstract:** The effect of operational environment on the reliability performance of solar photovoltaic module can be analysed . The first step is to identify which factors have the most significant influence on the reliability performance of photovoltaic modules and systems and how large is the effect. The available information about the | | **110-115** |

operating conditions of the PV modules can be uniformly formulated based on two alternatives , good/desired (+1) and bad/undesired (-1) conditions. With respect to reliability, the available method PHM (Proportional Hazards Model) can be used for predicting the effect of environment on the system reliability. The reliability characteristics of PV modules can be influenced by environmental conditions such as temperature , snow, wind etc and these influences therefore need to be seriously considered in the prediction of reliability in the design phase. The conventional reliability equation deals with over a time interval and is a measure of the probability for failure-free operation during the given interval, i.e., it is a measure of success for a failure free operation. It is often expressed as $R(t) = \exp(-t/MTBF) = \exp(-\lambda t)$, where MTBF is the Mean Time Between Failure and $\lambda$ is the failure rate, which is the reciprocal of MTBF. In this paper an attempt is made to modify the time equation of reliability with incorporating environmental impacts like temperature, wind and snow.

**Keywords:** Mean Time Between Failures, Failure rate, Weibull distribution, Proportional Hazards Model, Time to failure (TTF) Ttime between failures (TBF).

**References:**

1. John H. Wohlgemuth (2008) - Reliability of PV Systems, Reliability of Photovoltaic Cells, Modules, Components, and Systems, edited by Neelkanth G. Dhere,Proc. of SPIE Vol. 7048, 704802, (2008) • 0277-786X/08/$18 • doi: 10.1117/12.795248, 2008 SPIE Digital Library.
2. Wei Huangy, Mircea R. Stan, Kevin Skadron, Karthik Sankaranarayanan, Shougata Ghoshyz, Sivakumar Velusamy (2004) - Compact Thermal Modeling for Temperature Aware Design, DAC2004 June 7–11, 2004, San Diego, California, USA. Copyright 2004 ACM 1581138288/ 04/0006 ...$5.00.
3. Jurgen Symynck1, Filip De Bal (2011) - Weibull analysis using r, in a nutshell, The XVI-th International scientific conference Tehnomus,Stefan cel Mare University of Suceava , Romania, May 13-14, 2011.
4. Robert N. Meroney a and David E. Neff ( 2010) - Wind effects on roof-mounted solar photovoltaic arrays: CFD and wind-tunnel evaluation, The Fifth International Symposium on Computational Wind Engineering (CWE2010) Chapel Hill, North Carolina, USA May 23-27, 2010
5. Ross, M. M. D (1995) - Snow and Ice Accumulation on Photovoltaic Arrays: An Assessment of the TN Conseil Passive Melting Technology, report # EDRL 95-68 (TR), Energy Diversification Research Laboratory, CANMET, Natural Resources Canada, Varennes, September 1995, 273 pp.
6. Alireza Ghasemi, Soumaya Yacout, M. Salah Ouali (2009) – Parameter Estimation for Condition Based Maintenance with Proportional Hazard Model, International Conference on Industrial Engineering and Systems Management, IESM' 2009, May 13 - 15, 2009, Montreal – Canada.
7. Montri Wiboonrat (2008) - Transformation of system failure life cycle, ISSN 1750-9653, England, UK International Journal of Management Science and Engineering Management Vol. 4 (2008) No. 2, pp. 143-152.
8. W.M. Rohoumaa, I.M. Molokhiab, A.H. Esuri (2007) - Comparative study of different PV modules configuration reliability, Elsevier ScienceDirect Desalination 209 (2007) Pages : 122–128.
9. A. Adekpedjou, K. D. Zamba (2012) - A Chi-Squared Goodness of Fit Test for Recurrent Event Data, Journal of Statistical Theory and Applications, Volume 11, Number 2, 2012, pp. 97-119 ISSN 1538-7887.
10. K. A. H. kobbacy, B. B. Fawzi and D. F. Percy (1997) - A full history proportional hazards model for preventive maintenance scheduling, quality and reliability engineering international, VOL. 13, 187–198 (1997).
11. Xueli Gao, Javad Barabady, Tore Markset (2010) - An approach for prediction of petroleum production facility performance considering artic influence factors, Elsevier Reliability and System Safety Journal 95 (2010) ,Pages : 837 – 846.

**21.**

**Authors:** **K. Vsn Raghu Babu, T. Ravi**

**Paper Title:** **Threats and Countermeasures in GSM Networks**

**Abstract:** Mobile networks not only provide great benefits to their users but they also introduce inherent securityissues. With respect to security, the emerging risks of denialof service (DOS) attacks will evolve into a critical danger asthe availability of mobile networks becomes more and moreimportant for the modern information society. This paperoutlines a critical flaw in GSM networks which opens theavenue for distributed denial of service attacks. We proposea way to mitigate the attacks by adding minimalauthentication to the GSM channel assignment protocol.

**Keywords:** security, denial of service, attack, wireless networks, GSM, GPRS, 2G, DREAD

**References:**

1. Alan Burnett, Securing the Wireless Internet, Roke Manor Research Ltd, UK, 2003
2. UpkarVarshney, "Network access and security issues in ubiquitous computing", Workshop on Ubiquitous Computing Environment, Cleveland, 2003
3. ValerBocan, "Developments in DOS research and mitigating technologies", PeriodicaPolitehnica, Transactions on Automatic Control and Computer Science, Vol. 49 (63), 2004
4. Niels Ferguson, Bruce Schneier, Practical Cryptography, Wiley Publishing, Inc., 2003
5. Ghosh and Swaminatha, "M-commerce Security", Communications of the ACM, February 2001
6. Gunnar Heine, GSM Networks: Protocols, Terminology and Implementation, Alcatel SEL Germany, 1998
7. Alcatel University, Introduction to the Alcatel GSM Network, 2003
8. Oliver Spatscheck and Larry Peterson, "Defending against denial of service in Scout", In Proceedings of 3rd USENIX/ACM Symposium on OSDI, pp.59-72, Feb 1999.
9. 3rd Generation Partnership Project, Specification of the GSM-MILENAGE Algorithms: An example algorithm set for Authentication and Key Generation functions A3 and A8, http://www.gsmworld.com/using/algorithms/docs/ 55205-600.pdf
10. William Stallings, Cryptography and Network Security, Principles and Practices, Third Edition, Prentice Hall, 2003.

**116-120**

**22.**

**Authors:** **S.Ashwin, S.Aravind Kumar, S.Arun Kumar**

**Paper Title:** **Soft Computing Techniques Based Computer Aided System for Efficient Lung Nodule Detection – A Survey**

**Abstract:** Early detection and treatment of lung cancer can significantly advance the survival rate of patient. However, this is a challenging problem due to structure of cancer cells. Lung cancer detection, classification, scoring and grading of histopathological images is the standard clinical practice for the diagnosis and prognosis of lung cancer. It is a very complex and time-consuming duty for a pathologist to manually perform these tasks. Robust and

**121-127**

efficient computer aided systems are therefore indispensible for automatic lung cancer detection. The delineation of anatomical structures and other regions of interest is a key component in CAD systems. This is achieved through soft computing techniques which automatically and accurately highlight potential actionable lung nodules and rapidly compute measurements of detected regions. Soft computing systems like neural networks and fuzzy systems are valuable in lung cancer screening to improve sensitivity of pulmonary nodule detection beyond double reading, at a low false-positive rate when excluding small nodules. Several pilot studies have shown that these CAD modules can successfully locate overlooked pulmonary nodules and serve as a powerful tool for diagnostic quality assurance. This paper reviews the literature pertaining to the different types of novel neural network and fuzzy based automated CAD systems for robust lung nodule detection. Furthermore, prevailing research trends and challenges are acknowledged and guidelines for future research are discussed.

**Keywords:** Computer Aided Detection (CAD), fuzzy, Lung Nodule, neural network, sensitivity

**References:**


1. http://www.cancer.org/acs/groups/content/@epidemiologysurveilance/documents/document/acspc-031941.pdf.
2. J.H. Austin, N.L. Mueller, P.J. Friedman, et al., "Glossary of terms for CT of the lungs: recommendation of the Nomenclature Committee of the Fleischner Society", Radiology 1996, 200:327-331
3. Azian Azamimi Abdullah and Hasdiana Mohamaddiah, "Development of Cellular Neural Network Algorithm for Detecting Lung Cancer Symptoms" IEEE EMBS Conference on Biomedical Engineering & Sciences (IECBES 2010), Kuala Lumpur, Malaysia..
4. Noriaki Miyake et al, "Automatic Detection of Lung Nodules in Temporal Subtraction Image by Use of Shape and Density Features", 2009 Fourth International Conference on Innovative Computing, Information and Control, Pp. 1288- 1292.
5. Hany Ayad Bastawrous et al, "Detection of Ground Glass Opacities in Lung CT Images Using Gabor Filters and Neural Networks", Instrumentation and Measurement Technology Conference Ottawa, Canada, 17-19 May 2005, Pp 251-256
6. Giuseppe Coppini et al, "Neural Networks for Computer-Aided Diagnosis: Detection of Lung Nodules in Chest Radiograms", IEEE Transactions On Information Technology In Biomedicine, Vol. 7, No. 4, pp 344-357, 2003
7. Manuel G. Penedo et al, "Computer-Aided Diagnosis: A Neural-Network-Based Approach to Lung Nodule Detection", IEEE Transactions On Medical Imaging, Vol. 17, No. 6, pp 872-880, 1998
8. D. E. Rumelhart, G. E. Hinton, and R. J. Williams, "Learning representations by back-propagarion errors," Nature, vol. 323, pp. 533–536, 1986.
9. Rahil Hosseini et al, "An Automatic Approach for Learning and Tuning Gaussian Interval Type-2 Fuzzy Membership Functions Applied to Lung CAD Classification System", IEEE Transactions On Fuzzy Systems, Vol. 20, No. 2, pp 224- 234, 2012
10. Rahil Hosseini et al, "A Fuzzy Logic System for Classification of the Lung Nodule in Digital Images in Computer Aided Detection" , Fourth International Conference on Digital Society, pp 255- 259, 2010
11. M. Arfan Jaffar et al, "Lungs Nodule Detection by using Fuzzy Morphology from CT scan Images", International Association of Computer Science and Information Technology - Spring Conference, pp57- 61, 2009
12. S.M. Smith and J.M. Brady. SUSAN - a new approach to low level image processing. Int. Journal of Computer Vision, 23(1):45--78, May 1997
13. Xujiong Ye et al, "Shape-Based Computer-Aided Detection of Lung Nodules in Thoracic CT Images", IEEE Transactions on Biomedical Engineering, Vol. 56, No. 7, pp1810- 1820, 2009
14. Hiram Madero Orozco et al, "Lung Nodule Classification In Frequency Domain Using Support Vector Machines", the 11th International Conference on Information Sciences, Signal Processing and their Applications: Main Tracks, pp 870- 875, 2012.
15. Zhang Jing, Li Bin and Tian Lianfang, "Lung Nodule Classification Combining Rule-based and SVM", IEEE Fifth International Conference on Bio-Inspired Computing: Theories and Applications (BIC-TA), pp 1033 – 1036, 2010
16. Kenji Suzuki, "Segmentation of Lesions with Improved Specificity in Computer-Aided Diagnosis Using a Massive-Training Artificial Neural Network (MTANN)", Seventh International Conference on Machine Learning and Applications, pp 523-527,2008
17. M. Antonelli, G. Frosini, B. Lazzerini and F. Marcellon, "A CAD System for Lung Nodule Detection based on an Anatomical Model and a Fuzzy Neural Network", 1 -4244-0363-4/06/$20.OO ©2006 IEEE
18. K.Kanazawa et al, "Computer-Aided Diagnosis for Pulmonary Nodules Based on Helical CT Images", 0-7803-4258-5/98/$10.00 0 1998 IEEE
19. C.Clifford Samuel, V.Saravanan, M.R.Vimala Devi," Lung Nodule Diagnosis From CT Images Using Fuzzy Logic", International Conference on Computational Intelligence and Multimedia Applications, pp 159-163, 2007
20. Li Cuifang et al, "Experimental Investigation of Fuzzy Enhancement for Nonsolid Pulmonary Nodules", IEEE Symposium on Robotics and Applications(ISRA), pp756-759, 2012.
21. Jyh-Shyan Lin, Panos A. Ligomenides," A Hybrid Neural-Digital Computer-Aided Diagnosis System for Lung Nodule Detection on Digitized Chest Radiographs", 1063-7125/94 $3.00 0 1994 IEEE
22. Takeshi Hara, Hiroshi Fujita and Jing Xu, "Development of automated detection system for lung nodules in chest radiograms", 0-8186-8218-3/97 $10.00 0 1997 IEEE
23. Amal A. Farag et al, "Data-Driven Lung Nodule Models for Robust Nodule Detection in Chest CT", International Conference on Pattern Recognition,pp2588-2591,2010
24. Jamshid Dehmeshki , Hamdan Amin , Manlio Valdivieso and Xujiong Ye, "Segmentation of Pulmonary Nodules in Thoracic CT Scans: A Region Growing Approach," IEEE Transactions on Medical Imaging, vol.27, no. 4, pp. 467-480, April 2008.
25. http://www.nhlbi.nih.gov/health/health-topics/topics/cct/


**23.**

**Authors:** Sachin Jadhav, Shrikant Ganmukhe, Sanket Badwe, Bhushan Bhavsar

**Paper Title:** Automation of Screen-Shot Analysis for Anti-Virus Toaster Windows

**Abstract:** There are many antivirus products available in market. They provide different type of security levels to the user's data. For their own improvement they need to compare their product with their competitors to know the difference of security levels detected for the same type malware. To do such comparisons, the companies need to analyse the actions taken by the antivirus with toaster window displayed on desktop and hence they need to compare a large number of screen-shots of those actions. This project is used for automation of all these process to provide effective and better way of screen shot analysis by extracting text from them. Hence, the purpose of this project is to analyse and classify the actions taken by an antivirus for particular malware with the help of screen shots of those actions. It reduces the manual efforts and provides an automated way recognizing the activities done by an antivirus.

**Keywords:** This project is used for automation of all these process to provide effective and better way of screen shot analysis by extracting text from them.

**References:**
1. Text Extraction from Hetrogenous ImagesUsngMathmetical Morphology- G. RAMA MOHAN BABU, P. SRIMAIYEE, A. SRIKRISHNA
2. A New Approach forVideo Text Detection. In Proc. of International ConferenceOn Image Processing, -M. Cai, J. Song and M. R. Lyu. Rochester, New York,USA, pp. 117-120, 2002.
3. Method for Extracting Product Information from TV Commercial- Kohei Arai, Herman Tolle
4. Text detection in images using sparse representation with discriminative dictionaries- Ming Zhao ,Shutao Li , James Kwok Ming Zhao, Shutao Li, James Kwok
5. A Robust Algorithm for Text Detection in Images- JulindaGllavata, Ralph Ewerth and Bernd Freisleben

**24.**

**Authors:** Pradip P.Patel,Sameena Zafar

**Paper Title:** Miniaturized Compact Monopole Antenna for Multiband Applications

**Abstract:** Modern telecommunication system require antenna with wider bandwidth and smaller dimensions. Various antennas for wide band operation have been studied for communication and radar system. The fractal antenna is preferred due to small size, light weight and easy installation. A fractal micro strip antenna is used for multiband application in this project provides a simple and efficient method for obtaining the compactness. A sierpinski carpet based fractal antenna is designed for multiband applications. It should be in compactness and less weight is the major point for designing an antenna. This antenna is providing better efficiency.

**Keywords:** component; Sierpinski gasket, fractal, multiband antenna

**References:**
1. Pramendra Tilanthe and P. C. Sharma, "Design of a single layer multiband microstrip square ring antenna" IEEE explore-www.ieee.org, Applied Electromagnetic Conference (AEMC), year: 2009, PP: 1– 4.
2. Duixian Liu and Brian Gaucher, "A New multiband Antenna for WLAN/Cellular Applications", Vehicular Technology Conference, 2004;VTC2004-Fall; IEEE 60th, Year: 2004, Vol: 1, PP: 243 – 246.
3. C. Puente, J. Romeu, R. Pous, A. Cardama, "On the behavior of the Sierpinski multiband antenna,"IEEE Trans. Antennas Propagat., vol. 46, pp. 517-524, Apr. 1998
4. D. H. Werner, S. Ganguly, "An overview of Fractal Antenna Engineering Research", IEEEAntennas and Propagation Magazine, vol. 45, pp.38-57, 2003.
5. Philip Tang and Parveen Wahid, "Hexagonal Fractal Multiband Antenna," Antennas and Propagation Society International Symposium, IEEE, vol. 4, pp. 554-557, June 2002.
6. Asit K.Panda, Manoj K.Panda, Sudhansu S.Patra "A Compact Multiband Gasket Enable Rectangular Fractal Antenna"IEEE2011 International Conference on Computational Intelligence and Communication Systems. Page(s):11-13
7. B.R.Franciscatto,T.P.Voung and G.Fontgalland "High gain sierpinski gasket fractal shape antenna design for RFID"IEEE2011.
8. J. Anguera; C. Borja; C. Puente, "Microstrip Fractal-Shaped Antennas," A Review, Antennas and Propagation, 2007, EuCAP 2007, The second European Conference on 11-16 Nov. 2007 Page(s):1 – 7

**132-135**

**25.**

**Authors:** **Vineesh V, A. Immanuel Selvakumar**

**Paper Title:** **Design of Micro Hydel Power Plant**

**Abstract:** The asynchronous condition of hydro power plant depends upon the speed variation in turbine generator set which is effected by the gate states of hydraulic turbine. This paper deals with the technical feasibility of a small hydropower plant for domestic use (micro-hydro), how it can be implemented in Valara waterfall, Kerala, India. Included within this document is an introduction to micro hydro system, design and simulation of hydraulic turbine and generator and how they apply specifically to power generation. The proposed site has a very large potential for power generation, yet the source of micro hydro energy remain untapped.

**Keywords:** Micro hydro power, hydraulic turbine, alternator, rural electrification.

**References:**
1. Sakurai.T, Fuanto.H 'Fundamental Characteristics of Test Facility For Micro Hydro electric Power Generation System' IPEMC 2009.
2. Okonkwo, G N, Ezeonu S O "Design and Installation of Mini Hydro Electric Power Plant", Scholar Journal of Engineering Research Vol 1(1), April 2012
3. Chauhan D S, Gagan Singh "Simulation and Modelling of Hydro Power Plant to study Time Response during Different Gate States" International Journal of Advanced Sciences and Technologies Vol 10 Issue No. 1, 42-47 2007
4. Priyano Sutikno, Ibrahim Khalil " Design, Simulation Simulation and Experimental of the Very Low Head Turbine with Minimum Pressure and Free Vortex Criterions', International Journal of Mechanical and Mechatronics Engg IJMME – IJENS Vol 11, 2011
5. Yin Chin Choo, Kashern M Muttaqi, Negnevitsky M 'Modelling of hydraulic governor – turbine for control Stabilization', ANZIAM J 49 (EMAC2007) pp C681-C698, 2009
6. Angus Simpson, Michael Gibbard, John Pheat " Development of an integrated Hydraulic Electrical Model for Hydro Power Plant", Water Power pp1150-1159, 1997
7. Yu, Yao-nan 'Electric Power System Dynamics' Academic Press, New York, 1983
8. Oliver Paish, "Small Hydro Power- Technology and Current Status: Elseiver Journal Renewable and Sustainable Energy Reviews
9. Fraenkal P Paish, O Bokalders V, Harvey A, Brown A, Edward R," Micro Hydel Electric Power Plant- a guide for development workers" IT Publications Ltd. London, 1991
10. Arun Kumar, Verma H K "Performance Testing of Small Hydropower Plant" International Conference on Small Hydro power- Hydro Srilanka 22-24 2007
11. Renata Archetti , 'Microhydro electric power: Feasibility of domestic plant', International Conference on Green Buildings and Sustainable Cities, Elseiver journal Procedia Engineering 21 pp 8-15 2011.
12. Wazed M A, Shamsuddin Ahmed,'Micro Hydro Energy Resources in Bangladesh - A Review', Australian Journal of Basic and Applied Sciences2(4):11209-1222, 2009.
13. CWRDM, "Micro Hydel Scheme at Kakkadampoil- Project report by Centre For Water Resource Development and Management, Calicut.

**136-140**

**26.**

**Authors:** Deepshikha Kushwaha, Ravikant, Kirandeep Singh, Monika Aggarwal

**Paper Title:** Fabrication and Characterization of Pulsed Laser Deposited Lead Free Thin Film Capacitors

**Abstract:** The current study explores the dielectric and ferroelectric properties of pulsed laser deposited (Ba1-x,Srx)TiO3, Ba(Zrx,Ti1-x)O3 and [(Ba1-x,Srx), (Zry,Ti1-y)] O3 thin films deposited on LaNiO3 bottom electrode. The crystallographic study of these films done using XRD reveals that these films were crystalline in nature having

**141-144**

(110) preferred orientation. An improved crystallite structure with intense (110) reflection was observed for BSZT/LNO/Si thin film. The atomic force micrographs indicate that BST, BZT and BSZT thin films have different grain distributions and grain sizes and is in consistence with XRD results. The high value of remnant polarization (Pr) and low value of coercive field (Ec) of BSZT thin film shows that it can be used in memory devices. In addition, excellent dielectric properties with high dielectric constant were observed for the BSZT capacitor. A highest tunability of 68% was measured at a frequency of 1 MHz could be achieved for BZST thin film, showing that BSZT would be suitable candidate for tunable devices.

**Keywords:** Dielectric properties, Pulsed laser deposition, Tunability X-ray diffraction

**References:**


1. H. Basantakumar Sharma, H. N. K. Sarma, A. Mansingh. Fatigue in sol-gel derived barium titanate films. J. Appl. Phys. 85(1). (1999). pp. 341-346
2. S . Kim, T. Fujimoto, T. Manabe, I . Yamaguchi, T. Kumagai, S . Mizuta. Dense and Smooth Epitaxial BaTiO3 Thin Films by the Dipping-Pyrolysis Process. J. Mater. Res. 14(2). (1999). pp. 592.
3. B. H. Hoerman, G. M. Ford, L. D. Kaufmann, B. W. Wessels. Dielectric properties of epitaxial BaTiO3 thin films. Appl. Phys. Lett. 73(16). (1998). pp. 2248.
4. Manoj Kumar, Ashish Garg, Ravi Kumar, M.C. Bhatnagar. Structural, dielectric and ferroelectric study of Ba0.9Sr0.1ZrxTi1−xO3 ceramics prepared by the sol–gel method. Physicsa B. 403 (2008). pp. 1819.
5. T. Ueda, A. Noma,D.Ueda, GaAs MMIC Chip-sets for mobile communication systems with on-chip ferroelectric capacitors. Integr. Ferroelec. 7 (1995). pp 45-60
6. V.N. Keis, A.B. Kozyrev, M. L. Khazov, J. Sok, J. S. Lee, Electron. Lett., 34 (1998) 1107
7. T.B. Wu, C.M. Wu, M.L. Chen, Highly insulative barium zirconate-titanate thin films prepared by rf magnetron sputtering for dynamic random access memory applications .Appl. Phys. Lett. 69 (18). (1996). pp. 2659-2662
8. S. Hoffmann, R. Waser, Dielectric properties, leakage behaviour, and resistance degradation of thin films of the solid solution series Ba(Ti1-yZry)O3. Integrated Ferroelectrics. 17 (1997). pp. 141-152
9. D. Hennings, A. Schnell, G. Simon, J. Am. Ceram. Soc. 65 (11) (1982) 539.
10. J. Zhai, Xi Yao, H. Chen.. Structural and dielectric properties of Ba0.85Sr0.15(Zr0.18Ti0.85)O3 thin films grown by a sol–gel process. Ceramics International. 30 (2004). pp. 1237-1240
11. C. Fu, F. Pan, W. Cai, X. Deng, X. Liu. Microstructures and dielectric properties of BaZr0.2Ti0.8O3. Ceramics. Journal of Physics. 152 (2009). pp. 1-6
12. N.Y. Chan, G.Y. Gao, Y. Wang, H.L.W. Chan. Preparation and characterizations of Ba(Zr,Ti)O3/(Ba,Sr)TiO3 heterostructures grown on (LaAlO3)0.3(Sr2AlTaO6)0.35 single crystal substrates by pulsed laser deposition. Thin Solid Films. 518 (2010). pp. e82-e84
13. Y.H.Gao, J.L.Sun, J.H.Ma, X.J.Meng, J.H.Chu ,Applied Physics A 91 (2008) 541.
14. J.W. Zhai, X.Yao, Z.K.Xu, H.Chen. Enhancement of ferroelectricity in the compositionally graded (Pb,Sr)TiO3 thin films derived by a sol–gel process. Journal of Crystal Growth. 286 (2006). pp. 37-41
15. J.W.Zhai, X.Yao, Z.Xu, H.Chen. Effect of Orientation on the Ferroelectric Behavior of (Pb,Sr)TiO3 Thin Films. Journal of the American Ceramic Society. 89 (2006). pp. 354-357
16. K.T.Kim, C.I.Kim. Dielectric properties of highly (1 0 0) oriented (Pb0.5, Sr0.5)TiO3 thin films grown on LaNiO3 electrodes. Thin Solid Films. 447–448 (2004). pp. 651-655
17. C.M.Wu, T.B.Wu. Low temperature deposition of Ba0.4Sr0.6TiO3 thin films on LaNiO3-buffered electrode by rf magnetron sputtering. Materials Letters. 33 (1997). pp. 97-100
18. Sang Sub Kima,, Tae Soo Kang, Jung Ho Je. Microstructures of LaNiO3 films grown on Si(001) by pulsed laser deposition. Thin Solid Films. 405 (2002). pp. 117-121
19. C.C. Leu, C.Y. Chen, C.H. Chien. Domain structure study of SrBi2Ta2O9 ferroelectric thin films by scanning capacitance microscopy. Appl. Phys. Lett. 82 (2003). pp. 3493-3495
20. L. J. Sinnamon, M. M. Saad, R.M. Bowman, J.M.Gregg. Exploring grain size as a cause for "dead-layer" effects in thin film capacitors. Appl. Phys. Lett. 81 (2002). pp.703-705
21. C.C. Choi, J.Lee, B.H. Park, T.W. Noh, Integr. Ferroelectr. 3 (1997) 39
22. K.M. Johnson. Variation of Dielectric Constant with Voltage in Ferroelectrics and Its Application to Parametric Devices . J. Appl. Phys. 33 (1962). pp. 2826-2831
23. J. Yang, J.H. Chu, M.R. Shen. Analysis of diffuse phase transition and relaxorlike behaviors in Pb0.5Sr0.5TiO3 films through dc electric-field dependence of dielectric response. Appl. Phys. Lett. 90 (2007). pp. 242908-242910
24. A. Chen, A.S. Bhalla, R.Y. Guo, L.E. Cross. Dielectric loss of SrTiO3 single crystals under direct current bias. Appl. Phys. Lett. 76 (2000). pp. 1929-1931.


**27.**

**Authors:** **Pushpendra Kumar, Priyanka Tyagi, Smriti Joshi**

**Paper Title:** **Introducing Direct Mapping Sorters For Parallel Sorting Algorithms**

**Abstract:** Sorting is one of the most basic problems of computer science and has been discussed continuously since the evolution of computer science. Several algorithms have been devised and applied and the work is still unfinished. For the parallel computing sorting is of same relevance as for sequential and very primitive problem domain too. Grain size is very important aspect of any parallel algorithm and is decisive in term of complexity. For the sorting problems minimum unit for sorting is two elements, since we apply a swap operation if required, and the two elements are sorted. This is considered to be the single step operation. In this paper we will increase primitive unit to four elements and four elements will be sorted in a single step. By applying this technique we can improve the performance of many parallel algorithms.

**Keywords:** Parallel sorting; Bitonic; shear sort; Direct mapping.

**145-148**

**References:**


1. Kenneth E. Batcher. Sorting Networks and their Applications.volume 32 of AFIPS '68 (Spring), pages 307–314, New York, NY, USA, 1967. ACM.
2. Z. Hong and R. Sedgewick. Notes on merging networks. In Proc. 14th ACM Symp. on Theory of Computing(STOC).
3. D. E. Knuth. The Art of Computer Programming, volume 3. Addison Wesley, Reading Massachusetts, 1973.
4. M. S. Paterson. Improved sorting networks with O(logn) depth. Algorithmica,
5. D.A. Bader, D.R. Helman, and J. J´aJ´a. Practical Parallel Algorithms for Personalized Communication an d Integer Sorting. ACM Journal of Experimental Algorithmics, 1(3), 1996.
6. Hagen Peters, Ole Schulz-Hildebrandt, Norbert Luttenberger "A novel sorting algorithm for many-core architectures based on adaptive

bitonic sort".
7. J. Angermeier, E. Sibirko, R. Wanka, and J. Teich Bitonic Sorting on Dynamically Reconfigurable Architectures Technical Report CS-2011-01,December 2011

**28.**

**Authors:** **K.Krishna Bhavani Siram**

**Paper Title:** **Cellular Light-Weight Concrete Blocks as a Replacement of Burnt Clay Bricks**

**Abstract:** Burnt Clay Brick is the predominant construction material in the country. The CO2 emissions in the brick manufacture process have been acknowledged as a significant factor to global warming. The focus is now more on seeking environmental solutions for greener environment. The usage of Cellular Light-weight Concrete (CLC) blocks gives a prospective solution to building construction industry along with environmental preservation. In this paper, an attempt is made to compare CLC Blocks and Clay Bricks, and recommend a replacement material to red brick in construction industry.

**Keywords:** CLC Technology, Foam Concrete, CLC Blocks, Cellular Light weight Concrete, Light Weight Bricks.

**References:**

1. IS 2185 (Part 4) : 2008 – Concrete Masonry Units – Specification., Part 4- Preformed foam cellular concrete blocks
2. IS 9103 : 1999 – Concrete Admixtures – Specification.
3. IS 12269 : 1987 – Specification for 53 grade ordinary Portland cement
4. Xiaoheng Wang (2010), Environmental Pollution from rural brick-making Operations and their health effects on workers
5. M. S. Shetty, Concrete Technology Theory & Practice, Published by S. CHAND & Company, Ram Nagar, New Delhi
6. IS 456 : 2000 – Plain and reinforced Concrete – Code of Practice
7. Neville. A.M., Properties of Concrete, 4th Edition, Pitman Publishing Limited, London 1997
8. Van Deijk S., Foamed Concrete. A Dutch View. Pp 2-8. BRE, 1992.
9. Kearsley E. P. The use of foamcrete for affordable development in third world countries. Proceedings of the International Conference on Concrete in the service of mankind, University of Dundee, Scotland, September 1996 (Dhir R. K. and McCarthy M. J. (eds)), E&FN Spon, London, 1996
10. Jones M.R. & McCarthy A. Preliminary views on the potential of foamed concrete as a structural material. Mag. Concr. Res. 57 (1), pp 21-31, 2005.
11. Aldridge, D., Introduction to foamed concrete: What, Why, and How?, In: Dhir, R. K., Newlands, M. D., McCarthy, A., Editors; Use of foamed concrete in construction, London: Thomas Telford, 2005, 1-14.
12. Jones, M. R., McCarthy, A. Behaviour and assessment of foamed concrete for construction applications, In:Dhir, R. K., Newlands, M. D., McCarthy, A., Editors; Use of foamed concrete in construction, Thomas, London,2005, 61-88
13. IS: 516-1959 "Methods of Tests for Strength of Concrete", Bureau of Indian Standards, New Delhi.
14. IS: 3495 (Part 1): 1992 – Method of tests of burnt clay building bricks., Part 1- Determination of Compressive Strength
15. IS: 3495 (Part 2): 1992 – Method of tests of burnt clay building bricks., Part 2- Determination of Water Absorption
16. R.A.Barnes., Innovation and development in concrete materials and design, Proceedings of the International Conference on concrete construction, Kingston University. London, UK, September 2008



**29.**

**Authors:** **Md. Rabiul Islam, T. H. M. Sumon Rashid**

**Paper Title:** **Prospects and Potential Analysis of Solar and Biomass Energy at Pabna District, Bangladesh: A Realistic Way to Mitigate District Energy Demand**

**Abstract:** Energy is one of the major concerns for the developing future of any nation and electricity is the most useful form of energy. Due to facing serious energy shortage, Bangladesh Government tried to give a temporary solution such as quick rental power plant to alleviate the present critical situation which costs more unit price than usual. Currently, Bangladesh power production based on Natural gas (75.99%) suffered by inadequate storage and supply. To make the energy system of the country sustainable, Government and other developing partners of Bangladesh searching alternating source of energy which is mandatory. By Inherently suitable geographic location and as an agricultural country, solar and biogas definitely be the promising renewable energy source of Bangladesh. This paper focuses on the fact that how proper district based investigation on these resources and its proper utilization can help to give an easy realistic solution on the way of sustainable energy security of Bangladesh.

**Keywords:** Biomass Energy, Bangladesh, Cattle Dung, Rice Husk, Sustainable Energy, Solar Energy.

**References:**

1. Eusuf, M. 1997. Prospect and problem of Solar Energy in Bangladesh: Implementation stage of solar systems. Bangladesh Centre for Advanced Studies, Dhanmondi, Dhaka-1209, Bangladesh.
2. Rafique, S., "Potential Sources of Energies in Bangladesh: Utilization And Environmental Issues", WREC VII , 2002
3. Wikipedia of Bangladesh (http://en.wikipedia.org/wiki/Pabna_District ) access date-13th November, 2012.
4. Statistical Report Book, 2011 of Power Development Board (BPDB), Pabna Regional office, Bangladesh.
5. Handbook on Survey of Renewable Energy at Pabna and Sirajgonj District, Pabna Science and Technology University, Pabna, Bangladesh 2012.
6. Statistical Report Book, 2011 of Department of Livestock Services (DLS), Pabna, Bangladesh.
7. Statistical Year Book 2011, Bangladesh Bureau of Statistics (BBS), Dhaka, Bangladesh .
8. Prospect and Potential of Biogas Energy and Its Technology: A Sustainable Clean Energy Future of Bangladesh. [ INTERNATIONAL JOURNAL OF ADVANCED RENEWABLE ENERGY RESEARCH , Hasan Ahmed and Khalid Md. Bahauddin, Vol.1,Issue.6,PP. 313-322,2012]
9. Assessment of Rice Husk Energy Use for Green Electricity Generation in Bangladesh, Md. Ahiduzzaman, A.K.M. Sadrul Islam. [ 2nd International Conference on the Developments in Renewable Energy Technology, ( ICDRET'12), January 5-7,2012, Dhaka, Bangladesh ]
10. Islam,K. (2008), Senior Advisor, SED project, GIZ, Dhaka.
11. Singh, R. I (2007).Combustion of Bio-Mass in an Atmospheric Fbc: An Experience & Study, Paper presented at the International Conference on Advances in Energy Research Indian Institute of Bombay, December 12-15, 2007.



**30.**

**Authors:** **Manchineni Vijay Kumar, Suresh Angadi**

**Paper Title:** **Study of Uart Transimitter in Microcontroler**

**Abstract:** UART- Universal Asynchronous Receiver Transmitter, generally it is used for better transmission of serial data that is it either transmit or receives data serially with the help of shift register. It consist frame format, one

start bit (usually low), 5-8 data bit, one optional parity bit and one stop bit (opposite polarity of start bit). Asynchronous means by using start and stop bit we transmit data, there is no need of sending (PAD) that is ASCII (SYN) for synchronizing transmitter and receiver. It transmits 9600 to 38400bps for transmitting data bit. Whole process of serial transmission is based upon the principle of shift register.

**Keywords:** UART, RDR, USART, DTE, DCE

**References:**

1. http://www.spel.com/Technology.html
2. http://en.wikipedia.org/wiki/Universal_asynchronous_receiver/transmitter
3. http://www.latticesemi.com/
4. http://www.freebsd.org/doc/en/articles/serial-uart/index.html

**31.**

**Authors:** Amit.S. Ufade, B.K.Khadse, S.R.Suralkar

**Paper Title:** Restoration of Blur Image Using wavelet Based Image Fusion

**Abstract:** In this paper we describe Transformation domain fusion technique to restore images taken from any camera. Here first comparison of image restoration method is carried out, for this wiener filter and blind de convolution methods are selected ,then to improve the result of restoration image fusion using transformation domain technique i.e. wavelet based image fusion are suggested. The effectiveness of every stage is tabulated and compared using Spatial Frequency Root mean square error and Peak signal to noise ratio.

**Keywords:** Image restoration; Image fusion; point spread fusion; wavelet ;RMSE;PSNR;SF

**References:**

1. Robust image de blurring with inaccurate blur kernel by hui-ji and kang wang IEEE Transaction on image processing vol.21 no.4 April 2012.
2. Direct method for restoration of motion –blurred images Y.yitzakay,I.mor,A.Lantzman and N.S.Kopeika Optical society of America -0740-3232/98/06/512-08 vol.no15 ,no.6/june1998.
3. Identification of Blur-Parameter from motion Blurred Images by Y.Yitzhaky and N.S Kopeika Graphical Models and imag processing vol.59,no.5 septemebr ,pp-310-320,1997 Article no-IP970435.
4. Improved method of parameter identification andrestoration of motion Blurred Image XV.gui-li,Zhu dong me,wang bio, International Symposium on Photoelectronic Detection and Imaging 2009: Advances in Infrared Imaging and Applications,edited by Jeffery Puschell, Hai-mei Gong, Yi Cai, Jin Lu, Jin-dong Fei, Proc. of SPIE Vol. 7383, 73831R © 2009 SPIE • CCC code: 0277-786X/09/$18 • doi: 10.1117/12.835092.
5. "Digital Image Processing Using MATLAB" R. C. Gonzalez, R. E. Woods, S. L. Eddins, Pearson, 3rd Edition 2005.
6. "Fundamental of Digital Image Processing", A. K. Jain PHI 2005.
7. "A Novel Blind De convolution Scheme for Image Restoration Using Recursive Filtering" Deepa Kundur, Student Member, IEEE, and Dimitrios Hatzinakos, Member, IEEE. IEEE Transactions on signal processing vol46, no2, febrauary 1998.
8. Multi-Focus Image Fusion using Gradients of Wavelet Coefficients by Muhammad Iqbal, Muhammad Younus JavedProceedings ofthe 12th IEEE International Multitopic Conference, December 23-24,2008.
9. Feature level fusion of multimodal medical images in lifting wavelet transform domain by Sudipta Kor Proceedings of the 26th Annual International Conference of the IEEE EMBS San Francisco, CA, USA September 1-5, 2004.
10. "Novel Cooperative Neural fusion Algorithms for Image Restoration, Image Fusion", Y. Xia, and M. S. Kamel Feb 2007.
11. Discrete wavelet transform –based structural similarity for image quality assessment. Chun-Ling Yang12, Wen-Rui Gao1, Lai-Man Po2. 978-1-4244-1764-3/08©2008 IEEE.
12. Image Fusion using Complex Wavelets Paul Hill, Nishan Canagarajah and Dave Bull BMVC 2002.
13. Image fusion-based contrast enhancement. by Amina Saleem, Azeddine Beghdadi and Boualem Boashash,springer eurasip.Journal on Image and Video Processing 2012, 2012:10 http://jivp.eurasipjournals.com/content/2012/1/10.
14. Image denoising by supervised adaptive fusion of decomposed images restored using wave atom, curvelet and wavelet transform by Preety D. Swami • Alok Jain Springer-Verlag London Limited 2012, Received: 6 March 2012 / Revised: 23 May 2012 / Accepted: 24 May 2012.

**159-161**

**32.**

**Authors:** **Preeti, Sandeep Dogra, Rashmi Jain**

**Paper Title:** **DC Drives: Microcontroller Based Control**

**Abstract:** This paper is to present a microcontroller based control for DC drives to effectively control the output when there is sudden change in the input parameters. An assembly language program has been built for the programmable microcontroller which controls the various functions of DC drive. The main objective of control is to get the desired output and keep the motor or drive safe in case of any fault occurred. An eight bit microcontroller has been used for the controller purpose. Introducing a microcontroller based scheme facilitates the new DC drive system to deal with the various changes in the system and helps in maintaining the safe operation of the system.

**Keywords:** Assembly Language, DC drive, Microcontroller, Speed Control.

**References:**

1. T. Castabnet and J. Nicolai, "Digital Control for Brush DC Motor," IEE£ Transaction On Industry Application", Vol, 30, No 4, July/August 1994.
2. Krishnan and Thadiappan, "Speed Control of DC Motor Using Thyristor Dual Converter," IEEE Trans., Vol, T-IECI, pp, 391-399, Nov. 1976.
3. A. H. M. S. Ula and J. W. Steadman, "Design and Demonstrate of a Microcontroller Control for an Industria1 Sized DC Motor," IEEE Transaction on Energy Conversion, Vol. 3, No. I, March 1988.

A. H. M. Ula and J. W. Steadman, "Design and Demonstration of a Microcomputer for an Industrial Sized DC Motor", IEE£ Transaction on Energy Conversion, Vol, 3,No. I, March 1988.

4. J. Nicolai and T. Castagnel, "A Flexible Microcontroller Based Chopper Driving a Pcmlanent Magnet DC Motor," The European Power Electronics Application, 1993.
5. Khoei and Hadidi, "MicroProcessor Bascd Closed-Loop Speed Control System for DC Motor Using Power Mosfet," Umia UniversityICECS 1996, pp.1247-1250.
6. Akhilendra Yadav, Gurleen Kaur, Akanksha Sharma, "Microcontroller Based Open-Loop Speed Control System For Dc Motor," IJREAS Volume 2, Issue 6 (June 2012) ISSN: 2249-3905.

**162-164**

7. Bimbhra. P.S., Power Electronics. New Delhi, Khanna Publishers, 2006.
8. B.Haas, M. Etezadi-Amoli and D. McPherson, "An Inexpensive Imbedded Motor Controller using a Tachometer Feedback," 38th IEEE conference on power symposium, NAPS, North America, 17-19, Sep.2006.
9. Muhammad H. Rashid, ''Power Electronics Circuits,Devices,and Applications," Prentice Hall, 3rd edition, 2003.

**33.**

**Authors:** **Deepika Tewari, Sanjay Kumar Srivastava**

**Paper Title:** **A Visual Recognition of Static Hand Gestures in Indian Sign Language based on Kohonen Self-Organizing Map Algorithm**

**Abstract:** Indian Sign Language (ISL) or Indo-Pakistani Sign Language is possibly the prevalent sign language variety in South Asia used by at least several hundred deaf signers. It is different in the phonetics, grammar and syntax from other country's sign languages. Since ISL got standardized only recently, there is very little research work that has happened in ISL recognition. Considering the challenges in ISL gesture recognition, a novel method for recognition of static signs of Indian sign language alphabets and numerals for Human Computer Interaction (HCI) has been proposed in this thesis work. The developed algorithm for the hand gesture recognition system in ISL formulates a vision-based approach, using the Two-Dimensional Discrete Cosine Transform (2D-DCT) for image compression and the Self-Organizing Map (SOM) or Kohonen Self Organizing Feature Map (SOFM) Neural Network for pattern recognition purpose, simulated in MATLAB. To design an efficient and user friendly hand gesture recognition system, a GUI model has been implemented. The main advantage of this algorithm is its high-speed processing capability and low computational requirements, in terms of both speed and memory utilization.

**Keywords:** Artificial Neural Network, Hand Gesture Recognition, Human Computer Interaction (HCI), Indian Sign Language (ISL), Kohonen Self Organizing Feature Map (SOFM), Two-Dimensional Discrete Cosine Transform (2D-DCT).

**References:**

1. Geetha M, Manjusha U C, A Vision Based Recognition of Indian Sign Language Alphabets and Numerals Using B-Spline Approximation , IJCSE, Vol. 4 No. 03 March 2012.
2. Noor A. Ibraheem, Rafiqul Z. Khan, Vision Based Gesture Recognition Using Neural Networks Approaches: A Review, International Journal of human Computer Interaction (IJHCI), Volume (3) : Issue (1) : 2012.
3. J. Rekha, J. Bhattacharya and S. Majumder, Shape, Texture and Local Movement Hand Gesture Features for Indian Sign Language Recognition , IEEE 2011.
4. Bhawna Gautam, "Image Compression using Discrete Cosine Transform and Discrete Wavelet Transform" National Institute Of Technology, Rourkela, May 2010.
5. Swastik Das and Rasmi Ranjan Sethy, Digital Image Compression Using Discrete Cosine Transform & Discrete Wavelet Transform, National Institute Of Technology, Rourkela, 2009.
6. Tinku Acharya, Senior Member, IEEE and Sushmita Mitra, Senior Member, IEEE, "Gesture Recognition: A Survey", IEEE Transaction on Systems, Man and Cybernetics- Part C: Applications and Reviews, VOL. 37, NO. 3, May 2007.
7. Self-Organizing Maps, Wikipedia Source, from http://en. wikipedia.org/wiki/Self-organizing_map (accessed in 2012).
8. Mathsworks Image Processing Toolbox- DCT and Image compression (accessed in 2012).
9. Mathworks Image Processing Toolbox.
10. Mathworks Neural Network Toolbox.
11. Artificial Neural Network, Wikipedia source from-http://en.wikipedia.org/wiki/Artificial_neural_network (accessed in 2012).
12. Sign Languages, Wikipedia source from- http://en.wikipedia.org/wiki/Sign_language (accessed in 2012).
13. Fitzgibbon, A.W. and Lockton, R. Hand Gesture Recognition Using Computer Vision, BSc. Graduation Project, Oxford University.
14. eature extraction Wikipedia source from- http://en.wikipedia.org/wiki/feature_extraction (accessed in 2012).
15. Christopher Lee and Yangsheng Xu, Online, interactive learning of gestures for human robot interfaces, Carnegie Mellon University, The Robotics Institute, Pittsburgh, Pennsylvania, USA, 1996
16. Bullinaria, John A., Self Organizing Maps: Fundamentals, 2004.

**165-170**

**34.**

**Authors:** V.Thiyagarajan, V.Sekar

**Paper Title:** Modelling Of Photovoltaic Systems for Power Grid Equipped Houses as Partial Lighting System

**Abstract:** This paper is proposed as a guide for PV programme planners during the process of planning and implementing their projects to make sure that they continue on a sustained basis. This paper details four phases of PV programme planning: the preparation of PV programme, programme design, implementation and monitoring/ evaluation. This should also be used once the programme developer has a clear concept for a feasible plans and should be useful to all the decision-makers in the process of developing programme, may be they are host governments in developing countries, PV programme developers and sponsors, PV producers and suppliers, entrepreneurs, or NGOs. This Paper is deals with preparation for PV programmes, including needs assessment, stakeholder consultation, social context analysis, supply options and national policy considerations and Design of PV programmes, including establishment of goals, delivery modes, timelines, and logistics and quality assurance. A number of methodologies have been developed over the years with the aim of improving programme design and implementation. This paper is intended to highlight the issues related to a rural energy programmes in developing countries rather than providing an in-depth step by step methodology to standard programmed design, planning and implementation. Though the focus of this paper is on PV technologies, much of the discussion will apply to other rural decentralized energy systems. Solar-based electricity for our houses is essential nowadays as the monthly power bills are escalating regularly. Also, the whole world is now facing the challenge 'global warming'. By using eco friendly and green technologies, we would help reduce global warming and help climate change mitigation. Integrated LED modules and other DC operated Electrical equipment conserve energy as they are energy-efficient, possess long-life and require less maintenance. Mini PV powered structure has been designed, analysed and tested in power grid equipped house as a partial lighting system with cost analysis.

**Keywords:** Developing countries, PV, Solar Home Systems [SHS], programme design, planning, implementation, deployment.

**171-175**

**References:**
1. Wekesah, C. W., "Assessment of renewable sources electrification", M. potential for rural Sc. Thesis, University of Nairobi, 1995.
2. Build your own Solar panel - Phillip Hurley
3. O. Hohmeyer, Social Costs of Energy Consumption - External Effects of Electricity Generation in the Federal Republic of Germany : Springer-Verlag, Heidelberg, Berlin, New York, 1988.
4. Modeling Photovoltaic system using P Spice
5. Photovoltaic systems, planning and installing, Earth scan, London
6. Farhi, B., Dunlop, J., Ventre, J., Atmaram, G., Lynn, K. Design "Review and Approval Process of Grid-Tied Photovoltaic Systems", Proceedings of /SEC 2003, Hawaii, 2003.
7. Photovoltaic Student Guide, NEED 2009-2010
8. Practical Handbook of Photovoltaic - Fundamentals and Applications - Tom Markvart and Luis Castaner
9. Renewable and efficient electric power systems – Gilbert M. Masters – Stanford University
10. M.A.S. Masoum; H. Dehbonei and E.F. Fuchs, "Theoretical and experimental analyses of photovoltaic systems with voltage and current-based maximum power point tracking," IEEE Trans. Energy Conversion, vol. EC- 17, no.4, Dec. 2002, pp. 514- 522.
11. Solar Power Your home for dummies – Rik De Gunther, Wiley Publishing.
12. Solar System Projects you can build yourself – Delano Lopez, Nomad communications
13. Stand Alone Photovoltaic Systems – a handbook of recommended design practices – Sandia National Laboratories
14. Understanding Batteries - R.M. Dell and D.A.J. Rand, RSC Paperbacks
15. B. McNeils, A. Demck and M. Starr, "Solar- Powered Electricity: A Survey of Photovoltaic Power in Developing Counties", London: Intermediate Technology Publishers, 1988

**35.**

**Authors:** Roop Singh Takur, E.Ramkumar

**Paper Title:** Bandwidth Calculation in IEEE 802.16 Networks

**Abstract:** IEEE 802.16 standard was designed to support the bandwidth demanding applications with quality of service (QoS).Bandwidth is reserved for each application to ensure the QoS. For variable bit rate (VBR) applications, however, it is difficult for the subscriber station (SS) to predict the amount of incoming data. To ensure the QoS guaranteed services, the SS may calculate more bandwidth. In this paper, we propose a scheme, named Bandwidth Calculation, to calculate the bandwidth without changing the existing unused calculates bandwidth. The idea of the proposed scheme is to allow other SSs to calculate the bandwidth when it is available. Thus, the system through put can be improved while maintaining the same QoS guaranteed services. Mathematical analysis and simulation are used to evaluate the proposed scheme..Simulation and analysis results confirm that the proposed scheme can calculate on average. By analyzing factors affecting the calculating performance, scheduling algorithms are proposed to improve the overall throughput. The simulation results show that our proposed algorithm improves the overall throughput by 40% in a steady network.

**Keywords:** WiMAX, IEEE 802.16, Bandwidth Calculation.

**References:**
1. IEEE 802.16 WG,"IEEE Standard for Local and Metropolitan Area Network Part 16: Air Interface for Fixed Boardband Wireless Access Systems" IEEE STD 802.16-2004 p.1 - p.857
2. IEEE 802.16WG, "IEEE standard for local and metropolitan area networks part 16: Air interface for fixed and mobile broadband wireless access systems, Amendment 2," IEEE 802.16 Standard, December 2005.
3. Jianhua He, Kun Yang and Ken Guild "A Dynamic Bandwidth Reservation Scheme for Hybrid IEEE 802.16 Wireless Networks" ICC'08 p.2571-2575.
4. Kamal Gakhar, Mounir Achir and Annie Gravey, "Dynamic resourcereservation in IEEE 802.16 broadband wireless networks", IWQoS, 2006. p.140-148
5. J. Tao, F. Liu, Z. Zeng, and Z. Lin, Throughput enhancement in WiMax mesh networks using concurrent transmission, In Proc. IEEE Int. Conf. Wireless Commun., Netw. Mobile Comput., 2005, p. 871V874.
6. Xiaofeng Bai, Abdallah Shami and Yinghua Ye "Robust QoS Control for Single Carrier PMP Mode IEEE 802.16 Systems",IEEE TRANSACTIONS ON MOBILE COMPUTING, VOL. 7, NO. 4, APRIL 2008, p.416-429
7. Eun-Chan Park, Hwangnam Kim, Jae-Young Kim, Han-Seok Kim "Dynamic Bandwidth Request-Allocation Algorithm for Real-time Services in IEEE 802.16 Broadband Wireless Access Networks", INFOCOM 2008,p.852 - 860
8. Thomas G. Robertazzi "Computer Networks and Systems:Theory and Performance Evaluation." Springer-Verlag 1990
9. Eun-Chan Park, Hwangnam Kim, Jae-Young Kim, Han-Seok Kim"Dynamic Bandwidth Request-Allocation Algorithm for Real-time Services in IEEE 802.16 Broadband Wireless Access Networks",INFOCOM 2008,p.852 – 860
10. Thomas G. Robertazzi "Computer Networks and Systems:Theory and Performance Evaluation "Springer-Verlag 1990
11. Kamal Gakhar, Mounir Achir and Annie Gravey, "How Many Traffic Classes Do We Need In WiMAX?," WCNC 2007, p.3703-3708
12. Qualnet / www.scalablenetworks. com/products/developer/new in 45.php
13. Frank H.P. Fitzek, Martin Reisslein, "MPEG–4 H.263 Video Traces for Network Performance Evaluation", IEEE Network, Vol.15, No. 6, p.40- 54 November / December 2001 Kulapala,"Network Performance Evaluation .
14. Patrick Seeling, Martin Reisslein, and Beshan Frame Size and Quality Traces of Single-Layer and Two- Layer Video: A Tutorial", IEEE Communications Surveys and Tutorials, Vol. 6No.2p.58-78, Third Quarter 2004
15. Greet Van der Auwera,Prasanth T. Avud and Martin Reisslein " Traffic and Quality Characterization of Single- Layer Video Streams Encoded with H.264/AVC Advanced Video Coding Standard and Scalable Video Coding Extension", IEEE Transactions on Broadcasting Vol.54, No. 3 p.698-718 September 2008
16. Bandwidth analysis of solvation dynamics in a simple liquid mixture M. Sakuraia! And A.Yoshimorib! Department of Physics, Kyushu University, Fukuoka 812-8581, Japan
17. Comparison of adaptive-network-based fuzzy inference systems for bandwidth calculation of rectangular microstrip antennas Detail Only Available By: Guney, K.; Sarikaya, N. Expert Systems with Applications. Mar2009 Part 2, Vol. 36 Issue2, p3522-3535.14p. DOI:10.1016/j.eswa.2008.02.008.

**176-182**

**36.**

**Authors:** **Bhrugu Sevak**

**Paper Title:** **Security against Side Channel Attack in Cloud Computing**

**Abstract:** Cloud computing is a word that delivering hosted service over the internet. Cloud computing has been ideate as the next generation architecture of IT enterprise because of it's provides ubiquitous network, cost reducing, flexibility and scalability to users. Now days with the fast growing of cloud computing technology introduces new more vulnerabilities so security is considered to be one of the most critical aspect in clod computing environment due to the confidential and important information stored in the cloud. As per AMAZONE EC2 service case study it is

**183-186**

possible to identify the particular target VM(virtual machine) in internal cloud infrastructure and then placed new VM with targeted VM and extract confidential information from targeted VM on same physical machine called as simple side channel attack. This paper introduces how to avert the side channel attack in cloud computing. This is accomplished by using combination of Virtual firewall appliance and randomly encryption decryption (using concept of confusion diffusion) and provide RAS (Reliability, Availability, and Security) of client's data or information.

**Keywords:** Cloud computing, side channel attack, Amazon EC2 service case study, virtual firewall appliance, randomly encryption decryption.

**References:**

1. http://en.wikipedia.org/wiki/Cloud_computing
2. http://searchcloudcomputing.techtarget.co/ Security Analysis of Cloud Computing
3. Brodkin, J.: Seven Cloud Computing Security Risks(2008) http://www.gartner.com/DisplayDocument?id=685308
4. http://cloudsecurity.org/
5. Hey, You, Get Off of My Cloud - Computer Science and Engineering cseweb.ucsd.edu/~hovav/dist/cloudsec.pdf
6. bAmazon Elastic Compute Cloud (EC2). http://aws.amazon.com/ec2/
7. Amazon Web Services. Customer Agreement.http://aws.amazon.com/agreement/
8. Virtual firewall - Wikipedia, the free encyclopediahttp://en.wikipedia.org/wiki/Virtual_firewall
9. Virtual Firewall Appliances: Trust Misplaced? Cloud Passage Blog blog.cloudpassage.com/.../virtual-firewall-appliances-trust-misplaced/
10. Cloud Security Alliance Guidance, "Security Guidance For Critical Areas of Focus In Cloud Computing Vl.0",www.cloudsecurityalliance.orglguidance/csaguide.v1.0.pdf, published April 2009
11. National Institute of Science and Technology. "The NIST Definition of [15] Luis M. Vaquero1, Luis Rodero-Merino1, Juan Caceres1, Maik Cloud Computing".p.7. Retrieved July 24 2011.
12. Shannon's Idea of Confusion and Diffusion www.cs.ust.hk/faculty/cding/COMP581/SLIDES/confdiffu.pdf

**37.**

**Authors:** **Raghavendra Joshi, Subba Rao M, Ravikiran Kadoli**

**Paper Title:** **Design Procedure for Optimum Efficacy of Magnetostrictive Material (Tb0.3Dy0.7Fe1.95) in Actuator Applications**

**Abstract:** Magnetostrictive materials are attracting increasing research attention due to inherent advantages such as outstanding magnetostriction, high energy density, high Curie temperature and quick response compared to PZT materials. Actuators using magnetostrictive materials show great potential due to their high forces and short reaction times for applications on heavy and stiff structures such as in aeronautics, civil structures and machine tools. This paper discusses the layout and design of magnetostrictive actuator to decide the suitable number of coil turns based on required magnetic field. In addition the systematic design procedure mainly focusing on electric, magnetic, thermal and mechanical aspects is being discussed. Analytical expressions such as equivalent magnetic circuit equation, flux, magnetic field intensity, shape factor of coils, peak to peak expression for magnetic field intensity and as well as for driving current, different losses in a actuator for the optimal usage of magnetostrictive material in the applications of actuator are being outlined. Significance of leakage inductance of the actuator and choice of feeding amplifiers affecting actuator drive coils dimensioning are illustrated.

**Keywords:** magnetostriction, Curie temperature, magnetostrictive actuator, shape factor, leakage inductance.

**References:**

1. N. B. Ekreem, A.G. Olabi, T. Prescott, A. Rafferty, and M. S. J. Hashmi, "An overview of magnetostriction, its uses and methods to measure these properties", Journal of Materials Processing Technology, vol.191, pp. 96-101, 2007.
2. M.G. Aston, R.D. Greenough, A.G.I. Jenner, W.J. Metheringham, and K. Prajapati, "Controlled high power actuation utilizing Terfenol-D", Journal of Alloys and Compounds, vol. 258, pp. 97-100, 1997.
3. K. R. Dhilsha, G. Markandeyulu, B. V. P. Subrahmanyeswara Rao, and K. V. S. Rama Rao, "Design and fabrication of low frequency giant magnetostrictive transducer", Journal of Alloys and Compounds, vol. 258, pp. 53-55, 1997.
4. B. T. Yang, M. Bonis, H. Tao, C. Prelle, and F. Lamarque, "A magnetostrictive mini actuator for long-stroke positioning with nanometer resolution", Smart Materials and Structures, vol. 16, pp. 1227-1232, 2006.
5. E. H. Mohamed, and Benbouzid, "Finite element modeling of magnetostrictive devices: Investigation for the design of the magnetic circuit", IEEE transaction on Magnetics, Saint Martin d'Heres, France, vol. 31, 1995.
6. A.G. Olabi, and A. Grunwald, "Computation of magnetic field in an actuator", Simulation modelling and Theory, vol. 16, pp. 1728-1736, 2008.
7. P. Chen, Q. Lu, D. Chen, and K. Chen, "The design of giant magnetostrictive flow valve and its COMSOL simulation", Journal of key Engineering Materials, vol. 160-162, pp.1146-1150, 2011.
8. T. Zhifeng, L. U. Fuzai, and L. I. U. Yang, "Magnetic field distribution in cross-section of Terfenol-D rod and its applications", Journal of Rare Earths, vol. 27,pp. 525, 2009.
9. J. Brauer, "Magnetic Actuators and Sensors", Milwaukee School of Engineering, 2006.
10. L. Dehui, L. Quanguo, and Z. Yuyun, "Magnetic circuit optimization design of Giant magnetostrictive actuator", IEEE, pp. 688-692.2008.
11. G. Engdahl, "Handbook of Giant Magnetostrictive materials", Royal Institute of Technology, Stockholm, Sweden, 2000.
12. G. Engdahl, "Design procedure for optimal use of giant magnetostrictive material in magnetostrictive actuator applications", Actuator 2002, 8th International Conference on New actuator, Bremen, Germany, pp. 554-557, 2002.



**38.**

**Authors:** **S.Ravi Teja, L.Krishna Kanth, G.Ravi Teja, T.Ravi**

**Paper Title:** **Comb Line Generation Using Gain Flattened Ring Mode Locked Laser**

**Abstract:** we briefly demonstrate combinational line generation from an integrated multiple quantum well in GaAs/InP passively mode-locked laser (MLL) with a gain flattening filter based on an mach-zehnder interferometer. The intracavity filter flattens the non-uniform gain profile of the semiconductor material providing a more uniform net cavity gain. The GFF MLL has a gain of -10dB comb span of 15nm (1.88THz), the widest spectral width yet demonstrated for an integrated qw MLL at 1.55(micro meters). The measured optical linewidth at the center of the comb is 29 MHz, the -20dB RF gain line width of 500 KHz, while the output spectrum is phase-locked to produce 900 fs pulses at a repetition rate of 30 GHz with 4.6 (pico second) integrated jitter from 100Hertz to 30 (MegaHz)

**Keywords:** comb-line generation, integrated optics, mode-locked lasers, optical communications, photonics integrated circuits.

**References:**

1. P. J. Delfyett, et al., "Optical frequency combs from semiconductor lasers and applications in ultrawideband signal processing and communications," J. Lightw. Technol., vol. 24, no. 7, pp. 2701–2719, Jul. 2006.
2. U. Gliese, et al., "A wideband heterodyne optical phase-locked loop for generation of 3–18 GHz microwave carriers," IEEE Photon. Technol. Lett., vol. 4, no. 8, pp. 936–938, Aug. 1992.
3. A. D. Ellis and F. C. G. Gunning, "Spectral density enhancement using coherent WDM," IEEE Photon. Technol. Lett., vol. 17, no. 2, pp. 504– 506, Feb. 2005.
4. Y. B. M'Sallem, et al., "Quantum-dash mode-locked laser as a source for 56-Gb/s DQPSK modulation in WDM multicast applications," IEEE Photon. Technol. Lett., vol. 23, no. 7, pp. 453–455, Apr. 1, 2011.
5. M. J. Fice, A. Chiuchiarelli, E. Ciaramella, and A. J. Seeds, "Homodyne coherent optical receiver using an optical injection phase-lock loop," J. Lightw. Technol., vol. 29, no. 8, pp. 1152–1164, Apr. 15, 2011.
6. S. Ristic, A. Bhardwaj, M. J. Rodwell, L. A. Coldren, and L. A. Johansson, "An optical phase-locked loop photonic integrated circuit," J. Lightw. Technol., vol. 28, no. 4, pp. 526–538, Feb. 15, 2010.

**39.**

**Authors:** **Sarath Chand.L, D.A.R.Nikhilesh, Suresh Angadi**

**Paper Title:** **Test Escape Study IN IC Manufacturing**

**Abstract:** The invention of IC technology has paved way for modern application and has miniaturized devices with low power consumption and high operational capabilities. India though is a developing country it has very few industries in the field of integrated circuits. SPEL semiconductor is the only organization in India with facilities of IC assembly and testing. The steps involved in the organization make sure that high yield is produced. The raw material passes through a series of steps like assembly and testing before being dispatched to the customer. There are many other supporting facilities which help the main operations of SPEL. Quality of the material is maintained high with "RIGHT THE FIRST TIME" as the motive. SPEL aims to become a natural destination for assembly processes. The hierarchy in SPEL is arranged so as the processes happens in a time effective manner. OJET, which is the main motive of this program aims at making a student highly salable finished product equivalent to that of an IC assembled in SPEL.

Improving efficiency of existing material can be obtained only if the existing workforce spends their time on value added services. For this the concept of motion study is utilized by whichwe can determine the operator efficiency and can use the data to produce rational and reasonable results. The status of machines are obtained to find out the amount of production and the wastage in resources.TR in pocket fail check has also been done to verify the procedure employed by operators in case of TR in pocket fail error. LOT PROCESSING involves following a lot from the time of entry to testing to the stage of getting reeled. For gravity handlers the times taken for each steps in processing of a lot are calculated and time periods of each are compared and top errors are tackled. For SRM HANDLERS the frequencies of errors are measured and the errors with high frequencies are minimized. SETUP STUDY has also been done as part of the program in which the time taken for different steps in setup is calculated and the non-value adding time is reduced.By doing setup study and lot processing the production rate can be improved by diminishing time wasters and reducing high frequency errors. However all said it would a futile attempt not to provide any solutions to the data analyzed by the above method. Withrespect to the company's functioning, feasibility and resources available solutions have been provided to the problems that were identified. The production is expected to raise with implementation of these solutions. There is also a great deal of experience and wisdom that has been culminated during these four months.

**Keywords:** LOT PROCESSING, SETUP STUDY, SPEL, IC, SRM HANDLERS.

**References:**

1. http://www.spel.com/Technology.html
2. http://www.spel.com/Reliability.html
3. http://www.latticesemi.com/
4. http://en.wikipedia.org/wiki/I%C2%B2C
5. Principles of Semiconductor Devices: International Second Edition by Sima Dimitrijev
6. Fundamentals of Semiconductors: Physics and Materials Properties by Peter Y. Yu, Manuel Cardona

**193-198**

**40.**

**Authors:** **Darshan Singh, Dalveer Kaur, Yaduvir Singh**

**Paper Title:** **Condition Monitoring Leading to Control by Using Fuzzy and Hybrid Fuzzy Models: A Review**

**Abstract:** Plant wide control is a major area of research in current days and application of artificial intelligence techniques provide better results from conventional methods in control applications. In majority of the cases, researchers got much better results when they applied artificial intelligence algorithms in various engineering problems. Engineering problems have shown remarkable enhancement in performance and also efficiency when different artificial intelligence techniques were applied in comparison to conventional techniques. There are three basic domains in artificial intelligence viz. fuzzy logic, artificial neural network and optimization techniques. This paper reports the various research contributions made into condition monitoring aspects of induction motor using fuzzy logic and neuro-fuzzy logic (hybrid fuzzy).

**Keywords:** Artificial Intelligence, Condition monitoring, Fuzzy logic, Neuro-fuzzy logic.

**References:**

1. L A Zadeh, "Fuzzy sets", Info. & Ctl., 1965.
2. L A Zadeh, "Fuzzy algorithms", Info. & Ctl., Vol. 12, pp. 94-102,1968.

**199-206**

3. E Cox, “Fuzzy Fundamentals” IEEE Spectrum, (October 1993), pp. 58- 61, 1993.
4. D. Nauck, F. Klawonn and R. Kruse, “Combining Neural Networks and Fuzzy Controller” Fuzzy Logic in Artificial Intelligence (FLA193) ed. Klement, Erich Peter and Slang, Wolfgang, pp 35-46, 1993.
5. J S Jang and C Sun, “Neuro-fuzzy modeling and control”, Proceedings of the IEEE 1995, Vol. 83 n. 3 pp. 378-405, 1995.
6. J S Jang, “ANFIS: Adaptive-Network-based Fuzzy Inference System”, IEEE Trans. On system, Man and Cybernetics. Vol.23, No 3, pp. 665-685, May/June 1993.
7. J S Jang, C Sun, and E Mizutani, “Neuro Fuzzy and Soft Computing”, Printice-Hall, Upper Saddle River, NJ, 1997.
8. M Caudill, "Neural Networks Primer, Part I", AI Expert, pp. 46-52, December, 1987.
9. M Caudill, "Neural Networks Primer, Part II", AI Expert, pp. 55-61, February, 1988.
10. M Caudill, "Neural Networks Primer, Part III", AI Expert, pp. 53- 59, June, 1988.
11. Mamdani, E. H. and S. Assilian, “An experiment in linguistic synthesis with a fuzzy logic controller,” Int. J. Man-machine Studies, Vol. 7, 1–13, 1975.
12. Mamdani, E.H. (1977). Application of fuzzy logic to approximate reasoning using linguistic systems. Fuzzy Sets and Systems 26, 1182–1191.
13. F Esragh and E H Mamdani, “A general approach to linguistic approximation in Fuzzy Reasoning and Its Applications”, E.H. Mamdani and B.R. Gaines (eds.), London: Academic Press, 1981.
14. Sugeno, M. and G.T.Kang (1986). Fuzzy modelling and control of multilayer incinerator. FuzzySets and Systems 18, 329.
15. Takagi, T. and M. Sugeno (1985). Fuzzy identification of systems and its application to modeling and control. IEEE Trans. Systems, Man and Cybernetics 15(1), 116–132.
16. Kong and B. Kosko, “Comparison of Fuzzy and Neural Truck Backer-Upper Control Systems” in Neural Networks and Fuzzy Systems. Englewood Cliffs: Prentice Hall Inc., 1992.
17. H Berenji, Y Chen, C Lee, S Murugesan and J Jang, “An Experiment-based Comparative Study of Fuzzy Logic Control”, Proceedings of the American Association for Artificial Intelligence Conference, pp. 2751 - 2753, 1988.
18. W. Z. Qiao, W. P. Zhuang, T. H. Heng, S. S. Shan, “ A Rule Self-Regulating Fuzzy Controller”, Fuzzy Sets Anf Systems, pp 13-21, 1992.
19. C. C. Jou and N. C. Wang, “Training a Fuzzy controller to Back Up an Autonomous Vehicle”, Proceedings of the IEEE International Conference on Robotics and Automation, vol.-1, pp 923-928, 1993.
20. D Nguyen and B Widrow, “Neural Networks for Self Learning Control Systems”, IEEE Control Systems Magazine, pp. 18 - 23, April, 1990.
21. A Guez, J Eilbert and M Kam, "Neural Network Architecture for Control", IEEE Control Systems Magazine, pp. 22 –25, April, 1988.
22. D Psaltis, A Sideris, and A Yamamura, "A Multilayered Neural Network Controller", IEEE Control Systems Magazine, pp. 17-21, April, 1988.
23. Newton, R.T. and Y. Xu, 1993. Neural network control of a space manipulator. IEEE Control Syst. Magazine, 13: 14-22.
24. Arai, F. Rong, L. ; Fukuda, T. 1993. Trajectory control of flexible plate using neural network, Robotics and Automation, 1993. Proceedings., 1993 IEEE International Conference on 2-6 May 1993.
25. Liu, S., and Asada, H., "Transferring Manipulative Skills to Robots: Representation and Acquisition of Tool Manipulative Skills Using a Process Dynamics Model", ASME J. Dynamic Systems, Measurement and Control, Vol. 114-2, pp. 220-228 June 1992.
26. T.C. Hsia, Z. Mao, Obstacle avoidance inverse kinematics solution of redundant robots by neural network, Robotica, 15(1): 3-10, 1997.
27. J. Cooperstock, E. Milios: ``A Neural Network Operated Vision-Guided Mobile Robot Arm for Docking and Reaching", Technical Report RBCV-TR-92-39, March 1992, University of Toronto, Research in Biological and Computational Vision.
28. J. D. Yegerlehner and P. H. Meckl, “ Experimental Implementation of Neural Networks Controller for Robot Undergoing Large Payload Changes”, Proceedings of the IEEE International Conference on Robotics and Automation, vol.-2, pp 744-749, 1993.
29. Nauck, Klawonn, and Kruse, “Neural Networks and Fuzzy Systems”, Englewood Cliffs: Prentice Hall Inc., 1992.
30. J S Jang, "Self-Learning Fuzzy Controllers Based on Temporal Back Propogation", IEEE Transactions on Systems, Man, and Cybernetics, 1992.
31. Archer, N.P. and Wang, S., 1991. Fuzzy set representation of neural network classification boundaries. IEEE Trans. Syst.vol. 21, no.4, pp. 735-742.
32. Berenji, H. R. and Khedkar, P. (1992). Learning and Tuning Fuzzy Logic Controllers Through Reinforcements, IEEE Trans. Neural Networks, 3, pp. 724-740.
33. A. Blanco and M. Delgado, “A Direct Fuzzy Inference Procedure By Neural Networks”, Fuzzy Sets and Systems, pp 133-141, 1993.
34. J.M. Keller, R.R. Yager and H.Tahani, Neural network implementation of fuzzy logic, Fuzzy Sets and Systems, 45(1992)
35. W. Pedrcyz, “ Fuzzy Neural Networks and Neurocomputations”, Fuzzy Sets and Systems, vol.-56, pp 1-28, 1993.
36. S Rahman, "Neural-Fuzzy Consumer Appliance Applications", Proceedings of Fuzzy Logic, pp. M234-1 - M234-7, 1993.
37. R Lea, Y Jani, and H Berenji, “Fuzzy Logic Controller with Reinforcement Learning for Proximity Operations and Docking”, Fifth IEEE International Symposium on Intelligent Control, 1990.
38. S C Lee and E T Lee, "Fuzzy sets and neural networks" Journal of Cybernetics Vol 4. pp. 83 -103, 1974.
39. W S McCulloch and W Pitts, “A Logical Calculus of the Ideas Imminent in Nervous Activity”, Bulletin of Mathematical Biophysics, Vol 5, 1973.
40. W. Pedrcyz, “Fuzzy Sets and Neurocomputations: Knowledge Representation and Processing in Intelligent Controller”, Fifth IEEE International Symposium on Intelligent Control, 1990. pp. 626-630.
41. J. M. Keller and D. T. Hunt, “Incorporating fuzzy membership functions into the `perceptron algorithm”, IEEE Trans. PAMI, vol. PAMI-7, No. 6, pp. 693-699, 1985.

**41.**

**Authors:** **Karol Vasilko**

**Paper Title:** **Special Deformation Structures During Machining Plastic Metals, Their Activation And Use**

**Abstract:** The contribution analyses the possibilities of modification of cutting geometry in order to preserve a protective plastic zone of a material upon a cutting key. Based on the results of model experiment as well as practical verification, considerable increase in tool life has been achieved. The tools durability is dependent on the size of the shortened front face. Optimation of the face size enables to achieve a multiple durability when compared to a classical cutting key. The peculiarity of the processes is the creation of the two chips, one of which is an expelled plastic layer along the edge of the cutting tool. The application of the tool is possible only with the plastic materials cutting. Experimental tests have been carried out with frequently used steels. cutting tool, plastic deformation, wear, hips

**Keywords:** Optimation of the face size enables to achieve a multiple durability when compared to a classical cutting key.

**207-211**

**References:**

1. J. Dmochowski, J.: Podstavy obróbki skawaniem. Warszawa, 1978, 586 s.
2. F. Holešovsky. et all.: Materiály a technologie obrábění. Ústí nad Labem, UJEP, 1991, 250 s.
3. E. M. Trendt.: Metal Cutting. London – Boston, : Ed. Oxford, Butterworths – Helnemann, 1991, 236 s., ISBN 0-7506-1068-9
4. J. Buda., J. Békés.: Teoretické základy obrábania kovov. Bratislava: ALFA, 1967, 392s.

5. K. Hoshi., T. Hoshi.: On the metal cutting mechanism with the built-up-edge. Mem. Fac. Engng. Hokaido University 12, Nr. 3, 1969
6. H. Weber., T. N. Loladze.:Grundlagen des Spanens. Berlin: VEB Verlag Technik, 1986, 255 s.
7. J. Mádl., I. Kvasnička.:.: Optimalizace obráběcího procesu.Praha: ČVUT,1998, 168 s.
8. Z. Přikryl., R. Musílková.: Teorie obrábění.. Praha: SNTL, 1971, 198s.
9. J. Buda., K. Vasilko.: Metóda zastavenia procesu obrábania bez špeciálnych prípravkov. Patent SR 122243
10. S. Kalpakjian.: Manufacturing Enineering and Technology. New York: Addison- Wesley Publishing Company, 1989, 1199, ISBN 0-201-12849-7
11. Worthington.: Surface integrity, cutting forces and chip formation when machining with double rake angle tools. International Journal Mechanical Tool Design and Research, 1974, 14, No. 3, pp. 279-295
12. A. Macurová.? The roughness surface expressed by the mathematical model. Applied Surface Science, Vol. 256, No. 18, p. 5656-5658, ISSN 0169-4332

**42.**

**Authors:** **Chaudhari Chaitali G.**

**Paper Title:** **Optimizing Clustering Technique based on Partitioning DBSCAN and Ant Clustering Algorithm**

**Abstract:** Clustering is the process of organizing similar objects into the same clusters and dissimilar objects in to different cluster. Similarities between objects are evaluated by using the attribute value of object, a distance metric is used for evaluating dissimilarity. DBSCAN algorithm is attractive because it can find arbitrary shaped clusters with noisy outlier and require only two input parameters. DBSCAN algorithm is very effective for analyzing large and complex spatial databases. DBSCAN need large volume of memory support and has difficulty with high dimensional data. Partitioning-based DBSCAN was proposed to overcome these problems. But both DBSCAN and PDBSCAN algorithms are sensitive to the initial parameters.

**Keywords:** Clustering, DBSCAN, PDBSCAN, Ant clustering algorithm

**212-215**

**References:**

1. Birant, D., & Kut (2007). ST-DBSCAN: An algorithm for clustering spatial-temporal data. Data and Knowledge Engineering, 60, 208–221.
2. Dalli, A. (2003). Adaptation of the F-measure to cluster-based Lexicon quality evaluation. In EACL 2003. Budapest.
3. Huang Darong, Wang Peng, Grid-based DBSCAN Algorithm with Referential Parameters
4. Cao, F., Ester, M., Qian, W., & Zhou, A. (2006). Desity-based clustering over an evolving data stream with noise. In 2006 SIAM conference on data mining, Bethesda (pp. 328–339).
5. Handl, J., & Meyer, B. (2007). Ant-based and swarm-based clustering. Swarm Intellegince, 1, 95–113.
6. Viswanath, P., & Pinkesh, R. (2006). l-DBSCAN: A Fast Hybrid Density Based Clustering Method. Pattern Recognition, 1, 912–915.

**43.**

**Authors:** **Pawan Kumar Saini, Kapil Bhagchandani, Yatendra Mohan Sharma**

**Paper Title:** **Modern Investigation of Issues and Ad-Hoc Routing Protocols Applied To VANET**

**Abstract:** During the last decade, with the advancement in network technologies and wireless communications, researchers inspired from a new type of network called vehicular ad hoc network (VANET). The Vehicular ad hoc network (VANET) is a new model of Mobile ad hoc network for wireless communication between vehicles on road or in between the vehicle to road side unit to provide the safety and comfort to vehicles in transportation system. Recent research work in VANET emphasis on particular areas like routing, security and quality of service but due to high dynamic nature of this network, designing an efficient routing protocol for all VANET applications is very hard, still there are scope of reconstruction or creation of new design of protocol, services for VANET architectures. The modification in existing approach or proposed a novel way of routing is milestone but a survey of routing protocols based on various parameters of VANET is a necessary issue in vehicle-to- vehicle (V2V) and infrastructure-to-vehicle (IVC) communication for smart ITS. This paper presents modern investigation of ad hoc routing protocols and the approaches that are proposed recently specially for vehicular ad hoc network with their advantages and shortcomings, which can be helpful for researchers to understand the routing protocols of VANET and can be used to enhance of existing protocol or proposed a new approach.

**Keywords:** VANET, MANET, Ad hoc Routing Protocols

**References:**

1. Jagadeesh Kakarla, S Siva Sathya, B Govinda Laxmi, Ramesh Babu B." A Survey on Routing Protocols and its Issues in VANET" International Journal of Computer Applications (0975 – 8887) Volume 28– No.4, August 2011
2. Uma Nagaraj, Dr. M. U. Kharat, Poonam Dhamal "Study of Various Routing Protocols in VANET" IJCST Vol. 2, Issue 4, Oct . - Dec. 2011
3. Rakesh Kumar, Mayank Dave " A Comparative Study of Various Routing Protocols in VANET" IJCSI International Journal of Computer Science Issues, Vol. 8, Issue 4, No 1, July 2011
4. Yatendra Mohan Sharma, Dr. Saurabh Mukherjee " A Contemporary Proportional Exploration of Numerous Routing Protocol in VANET" International Journal of Computer Applications (0975 – 8887) Volume 50– No.21, July 2012
5. http://pcquest.ciol.com/content/technology/2009/109020101.asp
6. MIHAIL L. SICHITIU, MARIA KIHL "INTER-VEHICLE COMMUNICATION SYSTEMS: A SURVEY" IEEE COMMUNICATIONS, SURVEYS, 2ND QUARTER 2008, VOLUME 10, NO. 2
7. M. Mauve, A. Widmer, and H. Hartenstein, "A survey on position-based routing in mobile ad hoc networks," Network, IEEE, vol. 15, no. 6, pp. 30 - 39, Nov/Dec 2001.
8. M. Abolhasan, T. Wysocki and E. Dutkiewicz, "A review of routing protocols for mobile ad hoc networks", Ad Hoc Networks 2 , 2004 , pp. 1–22.
9. C.E. Perkins, P. Bhagwat , "Highly DSDV" , 1994.
10. T. Clausen, et al., "Optimized Link State Routing Protocol (OLSR)", RFC 3626, Network Working Group, Oct. 2003.
11. M. Gerla, X. Hong, G. Pei, "Fisheye State Routing Protocol (FSR)", IETF Internet Draft, work in progress, draft-ietfmanet- fsr-03.txt, July 2002.
12. J. J. Garcia-Luna-Aceves and M. Spohn, "Source-Tree Routing in Wireless Networks," Proceedings of 7th International Conference on Network Protocols, 1999.
13. Laiq Khan, Nohman Ayub and Aamir Saeed " Anycast Based Routing in Vehicular Adhoc Networks (VANETS) using Vanetmobisim" World Applied Sciences Journal 7 (11): 1341-1352, 2009 ISSN 1818-4952 © IDOSI
14. C.S. Murthy, B.S. Manoj,"AdHoc Wireless Networks", Pearson, 2004 pp. 336-338 and 627.

**216-220**

15. R. Ogier, et al., "Topology Dissemination Based on Reverse- Path Forwarding (TBRPF)", 2004.
16. M. Abolhasan, T. Wysocki and E. Dutkiewicz, "A review of routing protocols for mobile ad hoc networks", Ad Hoc Networks 2 , 2004 , pp. 1–22.
17. D. Johnson, B.D.A. Maltz, and Y.C.Hu, "The Dynamic Source Routing Protocol for Mobile Ad Hoc Networks (DSR)", draft-ietf-manet-dsr-10.txt, 2004.
18. C.E.Perkins and E. M. Royer. Ad-Hoc On Demand Distance Vector Routing, Proceedings of the 2nd IEEE Workshop on Mobile Computing Systems and Applications (WMCSA), pp. 90-100, 1999.
19. Zhan Haawei and Zhou Yun.Comparison and analysis AODV and OLSR Routing Protocols in Ad Hoc Network, 2008, IEEE.
20. Prabhakar Ranjan , Kamal Kant Ahirwar "Comparative Study of VANET and MANET Routing Protocols" Proc. of the International Conference on Advanced Computing and Communication Technologies (ACCT 2011) Copyright © 2011 RG Education Society ISBN: 978-981-08-7932-7
21. http://www.cse.wustl.edu/~jain/cis788-99/ftp/ adhoc_ routing/#intro
22. C.E.Perkins, "Ad hoc Networking" ,Addison Wesley , 2001.
23. NAUMOV V, An evaluation of inter-vehicle ad hoc networks based on realistic vehicular traces. MOBIHOC 2006
24. Harsch, C.; Festag, A.; Papadimitratos, P., "Secure Position-Based Routing for VANETs", Vehicular Technology Conference, 2007. VTC-2007 Fall. 2007 IEEE 66th , pp.26-30, Sept. 30
25. James Bernsen and D. Manivannan "Greedy Routing Protocols for Vehicular Ad Hoc Networks" 2008 IEEE
26. J. Blum,"Mobility management in IVC networks," 2003.
27. R. A. Santos, "Performance evaluation of routing protocols in vehicular ad hoc networks," 2005.
28. Tao Song," A Cluster-Based Directional Routing Protocol in VANET".
29. Pooja Duddalwar, Atul Deshmukh and S. S. Dorle "A Comparative Study of Routing Protocol in Vehicular Ad Hoc Network" International Journal of Emerging Technology and Advanced Engineering, ISSN 2250-2459, Volume 2, Issue 3, March 2012
30. Monika Khatri, Sona Malhotra " An Insight Overview Of Issues And Challenges In Vehicular Adhoc Network" Journal of Global Research in Computer Science, Volume 2, No. 12, December 2011
31. Bijan Paul, Md. Ibrahim, Md. Abu Naser Bikas "VANET Routing Protocols: Pros and Cons" International Journal of Computer Applications (0975 – 8887) Volume 20– No.3, April 2011
32. Monika Khatri, Sona Malhotra "Behavioural Study of Vanet Protocols" Volume 2, Issue 2 (February 2012)
33. Ali Ghazi, Tarik Ozkul," Design and simulation of an artificially intelligent vanet for solving traffic congestion". Masaum journal of basic and applied sciences vol.1, no. 2 September 2009.
34. Arunkumar Thangavelu et al," A simulated modeling approach towards providing adaptive qos for vehicular safety services over vanet", international journal of research and reviews in computer science (IJRRCS), vol. 1, no. 4, december 2010.
35. Ram Shringar Raw, D. K. Lobiyal "E-DIR: a directional routing protocol for VANETs in a city traffic environment" International Journal of Information and Communication Technology archive Volume 3 Issue 3, August 2011. Pages 242-257
36. Moath Muayad Al-Doori, Francois Siewe, and Ali Hilal Al-Bayatti "Routing Management for DTN Networks in VANET" International Journal of Machine Learning and Computing, Vol. 1, No. 5, December 2011
37. Hemant Kowshik et al, "Provable system wide safety in intelligent intersections", IEEE transactions on vehicular technology, vol. 60, no. 3 march 2011.

**44.**

**Authors:** **K. Suvarna Latha, M V Seshagiri Rao, Srinivasa Reddy. V**

**Paper Title:** **Estimation of GGBS and HVFA Strength Efficiencies in Concrete with Age**

**Abstract:** The utilization of supplementary cementitious materials is well accepted because of the several improvements possible in the concrete composites, and due to the overall economy. The present paper is an effort to quantify the strength of ground granulated blast furnace slag (GGBS) and high volume fly ash (HVFA) at the various replacement levels and evaluate their efficiencies in concrete. In recent years GGBS when replaced with cement has emerged as a major alternative to conventional concrete and has rapidly drawn the concrete industry attention due to its cement savings, energy savings, and cost savings, environmental and socio-economic benefits. The present study reports the results of an experimental study, conducted to evaluate the strengths and strength efficiency factors of hardened concrete, by partially replacing the cement by various percentages of ground granulated blast furnace slag and high volume fly ash for M20, M40 and M60 grades of concrete at different ages. The overall strength efficiency was found to be a combination of general efficiency factor, depending on the age and a percentage efficiency factor, depending upon the percentage of replacement. Here an effort is made towards a specific understanding of the efficiency of GGBS and HVFA in concrete, considering the strength to water cement ratio relations, age and percentage of replacement. The optimum GGBS and HVFA replacement as cementitious material is characterized by high compressive strength, low heat of hydration, resistance to chemical attack, better workability, and good durability and cost-effective. From this study it can be concluded that, since the grain size of GGBS is less than ordinary Portland cement, its strength at early ages is less but continues to gain strength over a long period.

**Keywords:** Bolomey's strength relation, Cementing efficiency, Ground granulated blast furnace slag (GGBS), High volume fly ash (HVFA), strength efficiency factor,

**221-225**

**References:**

1. Report No T(S) 006 January 2005 Use of higher volume fly ash in concrete for building sector CBRI Roorkee.
2. Seshagiri Rao, M.V., Ganeshwara Rao.P., "Research & Development in low cost building technologies" J.N.T.U.College of Engineering, Anantapur 1998
3. ASTM C 989-940, Standard specification for ground granulated blast furnace slag for use in concrete and mortars.
4. A.Oner, S.Akyuz,An experimental study on optimum usage of GGBS for the compressive strength of concrete, Ce
5. K.Ganesh Babu and V.Sree Rama Kumar,"Efficiency of GGBS in concrete" Cement and concrete Research Volume 30, Issue 7 July 2000 Pages 1031-1036
6. K Ganesh Babu and V Sree Rama Kumar , Efficiency of GGBS in Concrete , Science Direct –Cement and Concrete Research (2000),pp-1031-1036
7. K Ganesh Babu and G S N Rao and P V S Prakash, Efficiency of pozzolans in cement composites,Concrete 2000(1993),pp. 497-509 Dundee
8. K Ganesh Babu and G S N Rao, Efficiency of flyash in concrete, Cement Concrete Composites (1993),pp. 223-229
9. K Ganesh Babu and G S N Rao, Efficiency of silica fume in concrete, Cement Concrete Composites (1995),pp. 1273-1283
10. Neville, A.M. "Properties of Concrete 3rd edition, The English language book, Society & Pitman publishing 1983

**45.**

**Authors:** **Surekha Manoj, Puttaswamy Palahalli Srinivasaiah**

**Paper Title:** **Improvement of Power Quality of Grid Integrated Wind Distributed Generation by STATCOM**

**Abstract:** Worldwide fast depletion of conventional energy resources necessitates the implementation of renewable energy sources for generation to satisfy the growing demand. Since last decade, technological innovations and a changing economic and regulatory environment have resulted considerable revival of interest in connecting wind generation to the grid. Utilities are seeking to understand possible impacts on system operations when a large amount of wind power is introduced into the electric power system. Producers of renewable energy must condition the power produced in order to interconnect with the power grid and not interface with the grid's overall performance. In these aspects Flexible AC Transmission Systems (FACTS) Technology plays a vital role in enhancing the power system performance and improving the power quality of the system. This paper concentrates on power quality issues when wind power integrates with grid and the solution with the usage of STATCOM. An attempt is made with IEEE 16 Bus, 3 feeder test system and modeled for simulation study using MATLAB/SIMULINK simulation. Scopes obtained from the simulation results are proven for the improvement of voltage profile which in turn improves the overall power quality issues.

**Keywords:** FACTS, Wind Energy, Power Quality, Grid Integration.

**References:**

1. Indian Wind Energy Outlook 2011 - Global Wind Energy Council, 2011.
2. Ren H, Yu X, Watts D. Application of DFACTS for the improvement of penetration capacity of distributed generation. DFACTS 2009; 2009 (web.ing.puc.cl/~power/paperspdf/Dfacts2009.pdf).
3. Banerjee R. Comparison of options for distributed generation in India. Energy Policy 2006; 34-1, p. 101-111.
4. Panda S, Padhy NP. Power electronics based FACTS controller for stability improvement of a wind energy embedded distribution system. International Journal of Electronics, Circuits and Systems 2007; 1-1, p. 30-37.
5. Zobaa AF, Nigim KA, Bansal RC. Technology of VAr compensation for induction generator applications in wind energy conversion systems. Journal of Electrical Systems 2006; 2-3, p.172-184.
6. Jones P. Harder and Smarter. IET Power Engineer 2007; p. 34-37 (www.theiet.org/power).
7. Douglas J, Orme M. Time to Connect. IET Power Engineer 2006; p. 31-33 (www.theiet.org/power).
8. Cartwright P, Anaya-Lara O, Wu X, Xu L, Jenkins N. Grid compliant offshore wind power connections provided by FACTS and HVDC solutions. Proceedings EWEA conference 2004, p. 1-8.
9. Qiao W, Harley RG, Venayagamoorthy GK. Effects of FACTS Devices on a power system which includes a large wind farm. Proceedings of Power Systems Conference and Exposition 2006, p. 2070-2076.
10. Han C, Huang AQ, Litzenberger W, Anderson L, Edris A-A. STATCOM impact study on the integration of a large wind farm into a weak loop power system. Proceedings of Power Systems Conference and Exposition 2006, p. 1266-1272.
11. Wilch M, Pappala VS, Singh SN, Erlich I. Reactive power generation by DFIG based wind farms with AC Grid connection. Proceedings of Power Tech conference 2007, p. 626-632.
12. Wessels C., and Fuchs F.W., (2009), "High Voltage Ride Through with FACTS for DFIG based Wind Turbines"- EPE 2009
13. Andrew Keane, Luis F. Ochoa, Eknath vital, Chris J. Dent, Gareth P. Harrison- "Enhanced Utilization of Voltage Control Resources with Distributed Generation"-IEEE Transaction on power systems- paper accepted for inclusion in future issue of the journal-2010
14. N. G. Hingorani and L. Gyugyi, Understanding FACTS: Concepts and Technology of Flexible AC Transmission System. IEEE Press.2000.
15. S. K. Salman, Senior Member, IEEE, and A. L. J. Teo, Associate Member, IEE-" Dynamic Behaviour of Integrated Multiple Wind Farms during Fault Conditions on the Hosted Distribution Network" Power Tech, 2005 IEEE Russia, Page(s): 1 - 4
16. Rajiv K. Varma, Member, IEEE, Soubhik Auddy, Student Member, IEEE, and Ysni Semsedini-" Mitigation of Subsynchronous Resonance in a Series-Compensated Wind Farm Using FACTS Controllers"- IEEE TRANSACTIONS ON POWER DELIVERY,VOL. 23,NO. 3,JULY 2008 164
17. V. Salehi, S. Afsharnia, S. Kahrobaee "Improvement of Voltage Stability in Wind Farm Connection to distribution Network Using FACTS Devices"- IEEE Industrial Electronics, IECON 2006 - 32nd Annual Conference Publication Year: 2006 , Page(s): 4242 - 4247 , IEEE CONFERENCES.
18. Stephan Wachtel, Stefan Hartge- "Technical and economical benefits of wind energy converters with FACTS capabilities for power systems and the grid integration of wind power"'-EWEC2007, Milan, May 2007 ENERCON.
19. G. O. Young, "Synthetic structure of industrial plastics (Book style with paper title and editor)," in Plastics, 2nd ed. vol. 3, J. Peters, Ed. New York: McGraw-Hill, 1964, pp. 15–64.
20. W.-K. Chen, Linear Networks and Systems (Book style). Belmont, CA: Wadsworth, 1993, pp. 123–135.
21. H. Poor, An Introduction to Signal Detection and Estimation. New York: Springer-Verlag, 1985, ch. 4.
22. B. Smith, "An approach to graphs of linear forms (Unpublished work style)," unpublished.
23. E. H. Miller, "A note on reflector arrays (Periodical style—Accepted for publication)," IEEE Trans. Antennas Propagat., to be published.
24. J. Wang, "Fundamentals of erbium-doped fiber amplifiers arrays (Periodical style—Submitted for publication)," IEEE J. Quantum Electron., submitted for publication.

**226-230**

**46.**

**Authors:** **Janita S. Patel, G.B.Jethava**

**Paper Title:** **Providing Authorization by Using Face Recognization for Private Cloud Computing**

**Abstract:** Cloud computing technology is a new concept of providing dramatically scalable and virtualized resources, bandwidth, software and hardware on demand to consumers. Consumers can typically requests cloud services via a web browser or web service. The main concern is security privacy and trust.This paper include authorization based security for cloud server.In this paper we introduce face recognization to provide authorization for cloud security.

**Keywords:** Consumers can typically requests cloud services via a web browser or web service.

**References:**

1. Wang, H. Yan. (2010, December 12) "Study of Cloud Computing Security Based on Private Face Recognition" Beijing Institute of Technology.
2. Mr. Ravindra Kumar Gupta, Ram Sagar Mishra. (2012,January) "SECURITY ON THE CLOUD"- A ReviewAvailable: http://www.ijater.com/Files/IJATER_02_09.pdf
3. Danish jamil, hassan zaki(2011,apr) Security issues in cloud computing and countermeasures Available:
4. http://www.ijest.info/docs/ijest11-03-04-235.pdf
5. S. Tolba, A.H. El-Baz, and A.A. El-Harby (2006 february) Face Recognition: A Literature Review Available: https://www.waset.org/journals/ijice/v2/v2-2-14.pdf
6. L. Sirovich and M. Kirby, "Low-Dimensional procedure for the characterisation of human faces," J. Optical Soc. of Am., vol. 4, pp.519-524, 1987.

**231-234**

7. M. Kirby and L. Sirovich, “Application of the Karhunen- Loève procedure for the characterisation of human faces,” IEEE Trans. Pattern Analysis and Machine Intelligence, vol. 12, pp. 831-835, Dec.1990.
8. P. Verlinde, G. Matre, and E. Mayoraz, “Decision fusion using a multilinear classifier,” Proc. Int’l Conf. Multisource-Multisensor Information Fusion, vol. 1, pp. 47-53, July 1998.
9. T.J. Stonham, “Practical face recognition and verification with WISARD,” Aspects of Face Processing, pp. 426-441, 1984.
10. K.K. Sung and T. Poggio, “Learning human face detection in cluttered scenes,” Computer Analysis of Image and patterns, pp. 432-439, 1995.
11. S. Lawrence, C.L. Giles, A.C. Tsoi, and A.D. Back, “Face recognition: A convolutional neural-network approach,” IEEE Trans. Neural Networks, vol. 8, pp. 98-113, 1997.
12. Takács, “Comparing face images using the modified hausdorff distance,” Pattern Recognition, vol. 31, pp. 1873-1881, 1998.
13. Y. Gao and K.H. Leung, “Face recognition using line edge map,” IEEE [54] T. Vetter and T. Poggio, "Linear object classes and image synthesis from a single example image," IEEE Trans. Pattern Analysis and Machin Intelligence, Vol. 19, no. 7, pp. 733-742, July 1997.
14. L. Wiskott and C. von der Malsburg, “Recognizing faces by dynamic link matching,” Neuroimage, vol. 4, pp. 514-518, 1996. Transactions on Pattern Analysis and Machine Intelligence, vol. 24,no. 6, June 2002.

**47.**

**Authors:** **Jyoti R. Rajput, Kalyankar Pravin P.**

**Paper Title:** **Secure Message Authentication**

**Abstract:**
Digital watermarks have recently been proposed for authentication of both video data and still images and for integrity verification of visual multimedia. In such applications, the watermark has to depend on the original image. It is important that the dependence on the key be sensitive, while the dependence on the image be continuous (robust). The proposed system basically uses authentication and encryption mechanism that are two intertwined technologies that help to insure that your data remains secure. Authentication is the process of insuring that both ends of the connection are in fact who they say they are. This applies not only to the entity trying to access a service (such as an end user) but to the entity providing the service, as well (such as a file server or Web site). Encryption helps to insure that the information within a session is not compromised. This includes not only reading the information within a data stream, but altering it, as well. While authentication and encryption each has its own responsibilities in securing a communication session, maximum protection can only be achieved when the two are combined. For this reason, many security protocols contain both authentication and encryption specifications.

**Keywords:** Encryption, Authentication, DCT cryptographic security, Hash Function.

**References:**

1. B. Schneier, Applied Cryptography, John Wiley&Sons, New York, 1996.
2. Robust Hash Functions for Digital Watermarking Jiri Frindrich and Miroslav Goljan
3. Digital Image Watermarking Using The Discrete Cosine Transform And The MD5 Cryptographic Hash Function Wahyu Prakosa Adi & Volker Müller Duta Wacana Christian University
4. Kashyap, S.; Karthik, K. Authenticating Encrypted Data Communications (NCC), National Conference on 2011 Year: 2011, Page(s): 1 – 5
5. J. Cox, M. L. Miller, and J. A. Bloom, “Watermarkingapplications and their properties,” in Proc. Int.Conf. on Information Technology: Coding an Computing, pp. 6–10, March 2000.
6. E. T. Lin, C. I. Podilchuk, and E. J. Delp, “Detection of image alterations using semi-fragile watermarks,” in SPIE Intl. Conf. on Security and Watermarking of Multimedia Contents II, Jan 2000.
7. H. Cheng and X. Li, “Partial Encryption of Compressed Images and Videos,” IEEE Transactions on Signal Processing, vol. 48, no. 8, pp. 2439–2451, 2000.
8. S. Lian, “Quasi Commutative Watermarking and Encryption for Secure Media Content Distribution,” Multimedia Tools Appl, Springer, vol. 43, pp. 91–107, 2009.
9. S.Lian, Z. Liu, R. Zhen, and H. Wang, “Commutative Watermarking and Encryption for Media Data,” OE Lettters, SPIE, vol. 45(8), 2006.
10. G. Boato, V. Conotter, F. G. B. D. Natale, and C. Fontanari, “A joint asymmetric watermarking and image encryption scheme,” in Proceedings of SPIE Electronic Imaging, vol. 6819, pp. 601–602, 2008.
11. C. E. Shannon, “Communication Theory of Secrecy Systems,” Bell System Technical Journal, vol. 28, pp. 656–715, Oct 1949.
12. G. Chen, Y. Mao, and C. K. Chui, “A symmetric image encryption scheme based on 3D chaotic cat maps,” Chaos, Solitons and Fractals, Elsevier, pp. 749–761, 2004.
13. Z. Lv, L. Zhang, and J. Guo, “A Symmetric Image Encryption Scheme Based on Composite Chaotic Dispersed DynamicsSystem,” Proc. Of Second Symposium on Computer Science and Computational Technology, pp. 191–194, 2009
14. Hugo Krawczyk, The Order of Encryption and Authentication for Protecting Communications (Or: How Secure is SSL?)?, Proceeding CRYPTO '01 Proceedings of the 21st Annual International Cryptology Conference on Advances in Cryptology Pages 310 – 331, 2001
15. Charanjit S. Jutla, Encryption Modes with Almost Free Message Integrity, Proceeding EUROCRYPT '01 Proceedings of the International Conference on the Theory and Application of Cryptographic Techniques: Advances in Cryptology Pages 529 – 544, 2001
16. Phillip Rogaway, Mihir Bellare, John Black, OCB: A Block-Cipher Mode of Operation for Efficient Authenticated Encryption, ACM Journal Name, Vol. V, No. N, M 2003, Pages 1–3
17. Yuliang Zheng, Digital Signcryption or How to Acheieve Cost (Signature & Encryption)<<Cost(Signature)+Cost(Encryption), CRYPTO, 1999
18. Qiming Li, Nasir Memon, Husrev T. Sencar, Security Issues in Watermarking Applications A Deeper Look, In ACM Workshop on Multimedia Content Protection and Security, Santa Barbara, CA, October 2006
19. Ton Kalker, Jaap Haitsma, Job Oostveen, Issues with Digital Watermarking and Perceptual Hashing, Date: 12 November 2001, ISBN: 9780819442420

**235-238**

**48.**

**Authors:** **Rahul H.Naravade, U.N.Gujar, R.R.Kharde**

**Paper Title:** **Optimization of Cryogenic Treatment on Wear Behaviour of D6 Tool Steel by Using DOE/RSM**

**Abstract:** In this work, the effects of cryogenic treatment on the wear behavior of D6 tool steel were studied. For this purpose, two temperatures were used: -63 oC as shallow cryogenic temperature and -185 oC as deep cryogenic temperature. The effects of cryogenic temperature (Shallow and deep), cryogenic time (kept at cryogenic temperature for 20 and 40 h) on the wear behavior of D6 tool steel were studied. Wear tests were performed using a pin-on-disk wear tester to which different loads and different velocities were applied. The findings showed that the cryogenic treatment decreases the retained austenite and hence improves the wear resistance and hardness. Due to more homogenized carbide distribution as well as the elimination of the retained austenite, the deep cryogenic treatment

**239-244**

demonstrated more improvement in wear resistance and hardness compared with the shallow cryogenic treatment. By increasing the keeping time at cryogenic temperatures, more retained austenite was transformed into martensite; thus, the wear resistance was improved and further hardness were observed. The combination of heat treatment would have to be optimised. For that purpose Design of Experiment (DOE) is performed. The DOE is done with help of statistical tool i.e. minitab 16. Produced optimum runs with help of Response surface methodology (RSM) by Box-Behnken design.

**Keywords:** AISI D6 tool steel, cryogenic treatment (CT), wear behaviour, Design of Experiment (DOE), Response Surface Methodology (RSM), retained austenite (_R).

**References:**

1. B. Podgornika, F. Majdicb, V. Leskovseka, J. VizintinbB. Podgornika, F. Majdicb, V. Leskovseka, J. Vizintinb "Improving tribological properties of tool steels through combination of deep-cryogenic treatment and plasma nitriding" Wear 288 (2012) 88– 93
2. D. Dasa, A.K. Duttab, K.K. Rayc," Influence of varied cryotreatment on the wear behavior of AISI D2 steel"; Wear 266 (2009) 297–309
3. L. Bourithis, G.D. Papadimitriou, J. Sideris; "Comparison of wear properties of tool steels AISI D2 and O1 with the same hardness"; Tribology International 39 (2006), pp 479-489.
4. K. Amini a, S. Nategh a, A. Shafyei b "Influence of different cryotreatments on tribological behavior of 80CrMo12 5 cold work tool steel"; Materials and Design 31 (2010) 4666–4675
5. N.B. Dhokey, S. Nirbhavne "Dry sliding wear of cryotreated multiple tempered D-3 tool steel"; journal of materials processing technology 2 0 9 ( 2 0 0 9 ) 1484–1490
6. Molinari, M. Pellizzari, S. Gialanella, G. Straffelini, K.H. Stiasny "Effect of deep cryogenic treatment on the properties of tool steel"Journal of Materials Processing Technology 118 (2001) 350-355
7. M. H. Staia, Y. Perez-Delgado, C. Sanchez, A. Castro, E. Le Bourhis, E.S. Puchi-Cabrera; "Hardness properties and high-temperature wear behavior of nitrided AISI D2 tool steel, prior and after PAPVD coating"; Wear 267 (2009), pp 1452-1461.
8. D. Dasa, A.K. Duttab, K.K. Rayc "Correlation of microstructure with wear behaviour of deep cryogenically treated AISI D2 steel"; Wear 267 (2009) 1371–1380
9. Foad Farhani a, Keyvan Seyedi Niaki a, Seyed Ebrahim Vahdat b,c, Amir Firozi "Study of effects of deep cryotreatment on mechanical properties of 1.2542 tool steel"; Materials and Design 42 (2012) 279–288
10. D. Dasa, K.K. Rayb, A.K. Duttac, "Influence of temperature of sub-zero treatments on the wear behaviour of die steel"; Wear 267 (2009) 1361–1370
11. Bahramia, S.H. Mousavi Anijdana, M.A. Golozarb, M. Shamanianb, N. Varahrama "Effects of conventional heat treatment on wear resistance of AISI H13 tool steel" ; Wear 258 (2005) 846–851
12. O. Barrau a, C. Boher, R. Gras b, F. Rezai-Aria a "Analysis of the friction and wear behavior of hot work tool steel for forging"; Wear 255 (2003) 1444–1454
13. J.D. Darwina, D. Mohan Lalb,1, G. Nagarajanb,1 "Optimization of cryogenic treatment to maximize the wear resistance of 18% Cr martensitic stainless steel by Taguchi method" ; journal of materials processing technology 1 9 5 ( 2 0 0 8 ) 241–247
14. Guipu Xiao , ZikangZhu "Friction materials development by using DOE/RSM and artificial neural network" , Tribology International 43 (2010) 218–227.

| | | |
|---|---|---|
| | **Authors:** | **Ashok M. Kanthe, Dina Simunic, Ramjee Prasad** |
| | **Paper Title:** | **The Impact of Packet Drop Attack and Solution on Overall Performance of AODV in Mobile Ad–hoc Networks** |

**Abstract:** Mobile ad-hoc network has features like self organization, adaptation in changing environment, nodes in ad hoc network works as router for routing packets. Each nodes have limited resources like bandwidth, battery power and storage capacity. MANETs are vulnerable to Denial of Service (DoS) attacks like black hole attack, gray hole attack and packet drop attack. Packet drop attack is a kind of denial of service (DoS) attack in mobile ad hoc networks. Due to the bandwidth and memory buffer limitation, queue manager of some nodes by default may drop some packets. So differentiating between normal node to attacker node is critical one. In this paper, it is proposed the reputation and trust based mechanism against packet drop attack and improves the network performance interms of throughput, packet drop rate, packet delivery ratio, normalized routing overhead and end-to-end delay.

**Keywords:** AODV, mobile ad-hoc networks, protocol, packet drop attack, Security.

**References:**

1. C.K.Toh, "Ad hoc Mobile Wireless Networks:Protocols and Systems",Prentice Hall ,December 03,2001
2. Jeroen Hoebeke,Ingrid Moerman,Bart Dhoedt,Piet Demeester, "An Overview of Mobile Ad Hoc Networks:Applications and Challenges"Journal of the communication networks,July 2004.
3. K.Sanzagiri,B.Dahill,B.N.Levine,C.Shields,E.M.Belding-Royer, "A Secure Routing Protocol for Ad hoc Networks"Proceeding of the 10th IEEE International Conference on Network Protocols (ICNP), November 2002.
4. S.Buchegger and J.Y.Le Boudec,"Performance Analysis of the CONFIDENT Protocol",In Proc. 3rd ACM International Symposium on Mobile Ad Hoc Networking & Computing (MOBIHOC '02),Lausanne,Switzerland ,Tech.Rep.DSC/2001/001,June 2002.
5. Kejun Liu , Jing Deng,Promod K,Varsheney,KashyapBalkrishnan, "An Acknowledgement-Based Approch for the detection of Routing misbehavior in MANETs" IEEE Transactions on Mobile Computing,pp. 448-502,vol.6,NO.5,May 2007.
6. Z.H.Zhang,F.Nait-abdesselam,P.H.Ho and X.Lin, "RADAR:A ReputAtion –based scheme for Detecting Anomalous nodes in wireless networking Conference (WCNC 2008),Las Vegas,USA,March 2008.
7. S.Neelavathy Pari,D Sridharan, "Mitigating Routing Misbehaviour in Self Organizing Mobile Ad hoc Network using K-neighbourhood Local Reputation System" IEEE-International Conference on Recent Trends Information Technology,ICRTIT ,Chennai,June 3-5,2011.
8. C.Perkins, E.B.Royer,S.Das, "Ad hoc On Demand Distance Vector(AODV) Routing ,Internet Draft, " RFC 3561,IETF Network Working Group,July 2003.
9. C.Perkins,E.B. Royer, S.Das, "Ad hoc On-Demand Distance Vector Routing," Proceeding of the 2nd IEEE Workshops on Mobile Computing System and Applications (WMCSA),pp.90-100,1999.
10. Ashok M.Kanthe,Dina Simunic,Marijan Djurek, "Denial of Service (DoS) Attacks in Green Mobile Ad-hoc Networks",MIPRO 2012,IEEE Conference,Proceedings of the 35th International Convention,ISBN:978-1-4673-2511-6,May 21-25,2012,Opatija,Croatia.
11. Ashok M.Kanthe,Dina Simunic,Ramjee Prasad , "A Mechanism for Gray Hole Attack in Mobile Ad-hoc Networks" International Journal of Computer Applications (0975-8887),Volume 53-No.16, September 2012.
12. The network simulator-ns 2.35 http://www.isi.edu/nsnam/ns

**49.** **245-251**

| | | |
|---|---|---|
| **50.** | **Authors:** | Balamurugan Adhithan, A.Syed bava bakrudeen, Hari Prasada Rao Pydi |

| | | | |
|---|---|---|---|
| | **Paper Title:** | Contemplation of Mechanical and Thermal Properties of Aluminum (1100) with Silicon Carbide | |
| | **Abstract:** Aluminum (1100) is found wide application for rail coaches, aircraft industry, bearing materials, piston material, transmission lines etc. But due to their low melting point and low hardness they will wear and deformed easily. The metal Aluminum cannot meet all the required properties suitable for various engineering applications. So it is necessary to develop the Aluminum based materials that could have all combinational properties satisfying all our engineering requirements. SiC can be considered as ideal reinforcements, due to their high strength, high aspect ratio and thermo-mechanic properties. However, until now, the main obstacle is to obtain a homogenous dispersion of the SiCs in the desired matrix. Quite a few methods have studied to help improving the dispersion of SiCs in a polymer matrix. The objective of this work is to reinforce light Aluminum with SiC by melt stirring method. Different wt% of SiC was added to Aluminum [1100] separately to make Aluminum composites and its mechanical and thermal properties have been investigated using test like tensile, hardness, coefficient of thermal expansion. The improvement of mechanical and thermal properties for both the cases has been compared with pure Aluminum [1100].<br><br>**Keywords:** Aluminum, Rockwell Hardness, Silicon Carbide, coefficients of thermal expansion.<br><br>**References:**<br>1. Andreas Viereckl., Goh,C. S., Wei,J., Lee, L. C., Gupta, M.,and Qianqian Li, (2009)"Improved processing of carbon nanotubes/ magnesium alloy composites",Vol.69, pp.1193-1199.<br>2. Bhatnagar, M.,Baliga, B.J., (March 1993)"Comparison of 6H-SiC, 3C-SiC, and Si for power devices",Vol.40 (3), pp. 645–655.<br>3. Carreno-Morelli,E.,Yang,J.,and Couteau,E.,(2004)"Carbon nanotube/magnesium composite", Vol.8, pp.53-55.<br>4. Esawi, A., Morsi, K.,(2010) "Effect of carbon nanotube content on the mechanical properties of CNT- reinforced Aluminum composites", Vol.70, pp.500-507.<br>5. Esawi, A., Morsi, K., (2006) "Dispersion of carbon nanotubes (CNTs) in aluminum powder", Vol.38, pp.646-650.<br>6. Flahaut, E., Bacsa, R., Peigney, A., Laurent, C., (2003). "Gram-Scale CCVD Synthesis of Double-Walled Carbon Nanotubes".Vol.12, pp. 1442–1443.<br>7. Goh, C.,Wei, J.,Lee,L., and Gupta, M.,(2008)"Development of novel carbon nanotubes reinforced magnesium nanocomposites using powder metallurgy technique", Vol.9, pp. 130-135.<br>8. Hansang kwon, Peigney, A., (2009) "Investigation of carbon nanotube reinforced aluminum matrix composite materials", Vol.70, pp.546-550.<br>9. Jensen, J., Mickelson,W., Kis, A., and Zettl,A.,(2007)"Buckling and kinking force measurements on individual multiwalled carbon nanotubes",Vol.76, pp. 230-240.<br>10. Liu,Q., Ren,W., and Chen,Z., Yin, L.,(2009). "Semiconductingpropertiesofcup-stackedCNT", Vol.47, pp.340-345.<br>11. Mintmire, J.W., Dunlap, B.I.,and White, CT., (1992). "Are Fullerene Tubules Metallic", Vol.68, pp. 631-634.<br>12. Muranaka, T., (2008). "Superconductivity in carrier-doped silicon carbide", Vol.9, pp.35-45.<br>13. Park.,Yoon-Soo.,(1998). "SiC materials and devices",Vol.65, pp. 20–60.<br>14. Qianqian Li ., Christian, A., Rottmair., Robert, F., (2010) "CNT reinforced light metal composites produced by melt stirring and by high pressure die casting", Vol.500, pp.200-210.<br>15. Shen, Y.L., Williams, J.J., Piotrowski, G., Chawla, N. and Guo, Y.L., (2001), "Correlation between tensile and indentation behavior of particle reinforced metal matrix composites: a numerical and experimental study," Vol. 49 (16), pp. 3219-3229. | **252-259** |
| **51.** | **Authors:** | Sachin A. Murab, Vaishali. M.Deshmukh | |
| | **Paper Title:** | An Empirical Study of Signature Recognition &Verification System Using Various Approaches | |
| | **Abstract:** Signature used as a biometric is implemented in various systems as well as every signature signed by each person is distinct at the same time. So, it is very important to have a computerized signature verification system. In offline signature verification system dynamic features are not available obviously, but one can use a signature as an image and apply image processing techniques to make an effective offline signature verification system. In this paper, we present implementation of off-line signature recognition and verification system, which is based on moment invariant method, ANFIS, Pairwise distance (pdist) and Kmeans. The user introduces the scanned images into the computer, modifies their quality by image preprocessing followed by feature extraction, ANFIS training, pdist and kmeans.<br><br>**Keywords:** component: Image preprocessing, Feature extraction, Moment Invariant method, ANFIS training, pdist & kmeans.<br><br>**References:**<br>1. K. Han, and I.K. Sethi, "Handwritten Signature Retrieval and Identification", Pattern Recognition 17, 1996, pp. 83-90.<br>2. S. Chen, and S. Srihari, "Use of Exterior Contour and Shape Features in Off-line Signature Verification", 8th International Conference on DocumentAnalysis and Recognition (ICDAR '05), 2005, pp. 1280-1284.<br>3. Cemil OZ, Fikret Ercal, Zafer Demir "Signature Recognition and Verification with ANN ",Skarya University Computer Eng. Department Sakarya,Turkey,UMR Computer Science Department Rolla,MO65401.<br>4. Ms. Vibha Pandey Ms. Sanjivani Shantaiya. "Signature Verification Using Morphological Features Based on Artificial Neural Network", 2012 pp. 288-292<br>5. Erdem, U.M., "2D Object Recognition In Manufacturing Environment Using Implicit Polynomials and Algebraic Invariants",Master Thesis, Bogazici University, 1997.<br>6. Fu, K.S., Mui, J.K., "A survey On Image Segmentation", Pattern Recognition, Vol. 13, pp.3-16, Pergoman Press, 1981.<br>7. M.Babu Rao, Dr.B.Prabhakara Rao and Dr.A.Govardhan," Content Based Image Retrieval using Dominant Color and Texture features", February 2011, pp. 118-123.<br>8. MING-KUEI HU," Visual Pattern Recognition by Moment Invariants", February 4, 2010,pp. 179-187.Henry José Block Saldana And Carlos Silva Cardenas," Design and Implementation of an Adaptive Neuro- Fuzzy Inference System on an FPGA used forNonlinear Function Generation",IEEE 2010.<br>9. Mu-Chun Su, Chien-Hsing Chou," A Modified Version of the K-Means Algorithm with a Distance Based on Cluster Symmetry", JUNE 2001,pp 674- 680.<br>10. Yiu-Ming Cheung, k*-Means: "A new generalized k-means clustering algorithm", Pattern Recognition Letters 24, 2003.<br>11. Tapas Kanungo, David M. Mount, Nathan S. Netanyahu, Christine D. Piatko, Ruth Silverman, and Angela Y. Wu, "Efficient Algorithms for K Means Clustering". | **260-263** |

12. Plamondon, "The Handwritten Signature as a Biometric Identifier: Psychophysical Model & System Design" IEE Conference Publications,R.1995,Issue CP408, 23-27.
13. Ali Karouni Bassam Daya, Samia Bahlak," Offline signature recognition using neural networks approach", Procedia Computer Science 3,2010,pp.155- 161.
14. E.J.R. Justino, F. Bortolozzi, and R. Sabourin. "A comparison of SVM and HMM classifiers in the off-line signature verification", Pattern Recognition Letters 26, 2005, pp. 1377-1385.
15. Suhail M. Odeh, Manal Khalil ,"Off-line signature verification and recognition: Neural Network Approach",IEEE 2011,pp.34-38
16. Vu Nguyen, Yumiko Kawazoey, Tetsushi Wakabayashiy, Umapada Palz, and Michael Blumenstein, "Performance Analysis of the Gradient Feature and the Modified Direction Feature for Off-line Signature Verification", the IEEE 12th International Conference on Frontiers in Handwriting Recognition, 2010,pp. 303-307.
17. Bradley Schafer, Serestina Viriri, "An Off-Line Signature Verification System", IEEE International Conference on Signal and Image Processing Applications, 2009, pp. 95-100
18. Michael Blumenstein, Graham Leedham, Vu Nguyen,"Global Features for the Off-Line Signature Verification Problem", IEEE 10th International Conference on Document Analysis and Recognition, 2009,pp.1300-1304.
19. Alan McCabe, Jarrod Trevathan and Wayne Read, school of mathematics, physics and Information Technology, James cook University, Australia." Neural Network-based handwritten signature verification",Journal of computers, vol.3, No. 8 August 2008, pp. 9-22.
20. Minal Tomarand Pratibha Singh," A DirectionalFeature with Energy based Offline SignatureVerification Network" Vol.2, No.1, February 2011, PP48-57

| | | |
|---|---|---|
| **52.** | **Authors:** | **Aneesha Jose, P.Swaminathan** |
| | **Paper Title:** | **Modeling and Simulation of High Efficient Symmetric Half-BridgeConverter (SHBC) for Server Switched Mode Power Supplies** |

**Abstract:** Asymmetric control scheme is an approach to achieve zero-voltage switching (ZVS) for half-bridge isolated dc–dc converters. But, it is not suited for wide range of input voltage due to the uneven voltage and current components stresses. Modeling and simulation of a new high-efficient symmetric half-bridge dc to dc converter is proposed in this paper. The proposed dc to dc converter regulates the output voltage by adjusting applied voltage on the main transformer with an auxiliary circuit while main switches are operated at both fixed duty ratio and switching frequency. So that, voltage stress on rectifier diodes and current stress on switches can be reduced.

**Keywords:** Symmetric Half-Bridge Converter (SHBC), Asymmetric Converter, Zero Voltage Switching (ZVS).

**References:**

1. In-Ho Cho.Kang-Hyun and Kyu-Min Cho," High efficient multilevel half-bridge converter" IEEE Tans. Power Electron., vol.25,no.4.April.2010.
2. L. H. Mweene, C. A. Wright, and M. F. Schlecht, "A 1 kW 500 kHz front-end converter for a distributed power supply system," IEEE Trans. Power Electron., vol. 6, no. 3, pp. 398–407, Jul. 1991.
3. Y. Gu, Z. Lu, L. Hang, Z. Qian, and G. Huang, "Three-level LLC series resonant DC/DC converter," IEEE Trans. Power Electron., vol. 20, no. 4, pp. 781–789, Jul. 2005.
4. C. Zhao, X.Wu, P. Meng, and Z.Qian, "Optimum design consideration and implementation of a novel synchronous rectified soft-switched phase-shift full-bridge converter for low-output-voltage high-output-current applications," IEEE Trans. Power Electron., vol. 24, no. 2, pp. 388–397, Feb. 2009.
5. J. A. Sabate, V. Vlatkovic, R. B. Ridley, F. C. Lee, and B. H. Cho, "Design considerations for high-voltage high-power full-bridge zero-voltageswitched PWM converter," in Proc. Appl. Power Electron. Conf. Expo., 1990, pp. 275–284.
6. G. A. Karvelis,M. D.Manolarou, P. Malatestas, and S. N. Manias, "Analysis and design of non-dissipative active clamp for forward converters," in Proc. IEE Proc. Elect. Power Appl., Sep. 2001, vol. 148, pp. 419–424.
7. Y. K. Lo and J.Y. Lin, "Active-clamping ZVS flyback converter employing two transformers," IEEE Trans. Power Electron., vol. 22, no. 6, pp. 2416– 2423, Nov. 2007.
8. P. Imbertson and N. Mohan, "Asymmetrical duty cycle permits zero switching loss in PWM circuits with no conduction loss penalty," IEEE Trans. Ind. Appl., vol. 29, no. 1, pp. 121–125, Jan. 1993.
9. J. C. P. Liu, N. K. Poon, B. M. H. Pong, and C. K. Tse, "Low output ripple DC-DC converter based on an overlapping dual asymmetric half-bridge topology," IEEE Trans. Ind. Appl., vol. 22, no. 5, pp. 1956–1963, Sep. 2007.
10. R. Miftakhutdinov, A. Nemchinov, V. Meleshin, and S. Fraidlin, "Modified asymmetrical ZVS half-bridge DC-DC converter," in Proc. Appl. Power Electron. Conf. Expo., 2005, pp. 567–574.
11. H. Mao, J. Abu-Qanhouq, S. Luo, and I. Batarseh, "Zero-voltageswitching half-bridge DC-DC converter with modified PWM control method," IEEE Trans. Power Electron., vol. 19, no. 4, pp. 947–958, Jul. 2004.
12. K. M. Cho, W. S. Oh, and G. W. Moon, "A new half-bridge converter without DC offset of magnetizing current," in Proc. Int. Conf. Power Electron., 2007, pp. 147–149.

**264-268**

| | | |
|---|---|---|
| **53.** | **Authors:** | Aswathy.P.S,M.S.P.Subathra |
| | **Paper Title:** | Series-Connected Forward–Flyback Converter for High Step-Up Power Conversion |

**Abstract:** Global energy consumption tends to grow continuously. To satisfy the demand for electric power against a background of the depletion of conventional, fossil resources the renewable energy sources are becoming more popular.According to the researches despite its fluctuating nature and weather dependency the capacity of renewable resources can satisfy overall global demand for energy. High gain DC/DC converters are the key part of renewable energy systems .The designing of high gain DC/DC converters is imposed by severe demands. The power conditioning systems for the photovoltaic power sources needs high step-up voltage gain due to the low output of the generating sources. This paper presents a high step-up topology employing a Series-connected Forward-FlyBack converter, which has a series-connected output for high boosting voltage-transfer gain. Series-connected Forward-FlyBack converter is a hybrid type of forward and flyback converter. By stacking the outputs of them extremely high voltage gain can be obtained with small volume and high efficiency with a galvanic isolation. The separated secondary windings reduce the voltage stress of the secondary rectifiers and results in high efficiency.

**Keywords:** DC-DC power converters, forward converter, flybackconverter, power conditioning.

**References:**

1. Jong-Hyun Lee, Joung-Hu Park, Jeon.J.H.(2011),"Series-Connected Forward–Flyback Converter for High Step-Up Power Conversion", IEEE transactions on power electronics, vol. 26, no. 12.
2. Choi.W,Kim.S, Park.S, Kim.K, and Lim.Y,(2009),"High Step up dc/dc Converter with High Efficiency for Photovoltaic Module Integrated

**269-273**

Converter Systems",31st Int. Telecomm.Energy Conf. (INTELEC) IEEE 1, CD-ROM
3. Colonel W. T. McLyman, (2002), "High Reliability Magnetic Devices". Boca Raton, FL: CRC Press.[4]Delshad.M and Farzanehfard.H,(2008),"High Step-up Zero-voltage Switching Current-fed Isolated Pulse Width Modulation DC–DC Converter", IETJ.IEEE1,316–322
4. Fairchild Semiconductor.(2003). AN4134, Design Guidelines For Off-line Forward Converters using Fairchild Power Switch.
5. Chen.Y, H.-C. Wu,Y.- C. Chen, K.-Y. Lee,and S.-S. Shyu,( Jan. 2010.),"The AC line Current Regulation Strategy for the Grid-connected PV System",IEEETrans. Power Electron, vol. 25, no. 1, pp. 209–218,
6. Itoher.A,Meyer.T, and Nagel.A, (1996),"A New Panel-Integratable Inverter Concept for Grid-Connected photovoltaic systems", Int. Symp. On yIndust.Electronics(ISIE) IEEE
7. Lee.S,.Kim.J.E, and Cha.H, (2010),"Design and Implementation of Photovoltaic Power Conditioning System using a Current-based Maximum Power Point Tracking",J. Electr. Eng. Technol., vol. 5, pp. 606–613,
8. Lee1.J,Han1.B,Choi.K, (2011),"High-Efficiency Grid-Tied Power Conditioning System for Fuel Cell Power Generation" 8th International Conference on Power Electronics ,May 30-June
9. Li.Q and Wolfs.P, (2002),"An Analysis of a Resonant Half Bridge Dual Converter Operating in Continuous and Discontinuous Modes",33rd Annual Power Electronics Specialists Conf. (PESC) IEEE1, 1313–1318
10. Ma.M, Wi.L, Deng.Y, and He.X, (2010),"A Non-isolated High Step-up Converter with Built-in Transformer Derived from its Isolated Counterpart", 36th Annual Conf. on IEEE Indust. Electronics Society (IECON) IEEE 1, 3173–3178
11. Park.J.H, Ahn.J.Y,ChoB.H, and Yu.G.J,(2006),"Dual-module-Based Maximum Power Tracking Control of Photovoltaic Systems"IEEE Trans.Power Electron., vol. 53, no. 4, pp. 1036–1047,
12. Tacca.H,(2000),"Power Factor Correction Using Merged Flyback-forward Converters",IEEE Trans. Power Electron., vol. 15, no. 4, pp. 585–594, Jul.
13. Tacca.H,(2000),"Flyback vs. Forward Converter Topology Comparison Based Upon Magnetic Design Criterion", in Proc. Potencia, Revista de la SOBRAEP—MISSN 1414-8862, Brazil,
14. Yang.B,Li.W, Zhao.Y, and He.X,( 2010),"Design and Analysis of a Grid connected Photovoltaic Power System", IEEE Trans. Power Electron,vol. 25, no. 4, pp. 992–1000

**54.**

**Authors:** **Arunkumar. P. Chavan, Rekha. G, P. Narashimaraja**

**Paper Title:** **Design of a 1.5-V, 4-bit Flash ADC using 90nm Technology**

**Abstract:** In this paper, a 4bit analog to digital converter is designed for low power CMOS. It requires 2N-1 comparators, an encoder to convert thermometer code to binary code. The design is simulated in cadence environment using spectre simulator under 90nm technology. The pre simulation results for the design shows a low power dissipation of 1.984mW for the designed ADC. The circuit operates with an input frequency of 25MHz and 1.5V supply with a conversion time of 6.182ns.

**Keywords:** CMOS comparator, Thermometer encoder, Flash ADC, Low-power.

**References:**

1. Shubhara Yewale, Radheshyam Gamad "Design of Low Power and High SpeedMOS Comparator for A/D Converter application", Wireless Engineering and Technology, 2012, 3, 90-95.
2. B. Razavi, "Deign of Analog CMOS Integrated Circuits," Tata McGraw-Hill, Delhi, 2002.
3. R. Wang, K. Li, J. Zhang and B. Nie, "A High Speed High Resolution Latch Comparator For-Pipeline ADC," IEEE International Workshop on Anti-counterfeiting, Se- curity, Identification, Xiamen, 16-18 April 2007, pp. 28- 31.
4. W. Rong, W. Xiaobo and Y. Xiaolang, "A Dynamic CMOS Comparator with High Precision and Resolution," IEEE Proceedings of 7th International Conference on So- lid-State and Integrated Circuits Technology, 18-21 Oc- tober 2004, pp. 1567-1570.
5. ShaileshRadhakrishnan, Mingzhen Wang, Chien-In Henry Chen,"Low-Power 4-b 2.5GSPS Pipelined Flash Analog-to-Digital Converters in 3um CMOS", IEEE Instrumentation and Measurement Technology
6. Conference, vol. 1, pp. 287 – 292, May. 2005.
7. Chia-Nan Yeh and Yen-Tai Lai, "A Novel Flash Analog-to-Digital Converter", IEEE J, 2008.
8. G. M. Yin, F. Op'tEynde, and W. Sansen, "A high-speed CMOS comparator with 8-bit resolution", IEEE J. Solid -State Circuits, vol. 27, 1992.
9. Y. Sun, Y. S. Wang and F. C. Lai, "Low Power High Speed Switched Current Comparator," IEEE 14th Inter- national Conference, Ciechocinek, 21-23 June 2007, pp. 305-308.

**274-276**

**55.**

**Authors:** **V Bram Armunanto, Yudit Cahyantoro NS, Kaleb Priyanto**

**Paper Title:** **A Circularity Analysis of Different Clearances in the Sheet Metal Punching Process**

**Abstract:** Nowadays, technological development demands efficiency of time and energy in all fields in order to create a product that can compete in the global market. Breakthroughs and innovations are needed merely to survive in manufacturing industry. Punching is the common process of using a cutting punch and die in the manufacturing process. A variety of physical phenomena occur in the metal cutting process such as metal flow, friction between the material and tools, process heat and changes in the microstructure of the material. Much research conerning dimensions, tolerances, cutting angles and cutting force has been carried out. This article discusses and examines the relationship between clearance, punch and dies circularity and circularity of the product of the punching process. Testing has been conducted using various punches with different diameters and different circularity conditions. The Coordinate Measuring Machine (CMM) which has an accuracy of 1 micron was used to measure the diameter of the punch and the dies, the clearance and circularity of the punch and dies, and the resulting product. The question is: is the circularity of the product of punching affected by the clearance or by the circularity of such tools?

**Keywords:** CMM.

**References:**

1. Donald F Eary, "Techniques of Pressworking Sheet Metal Prentice - Hall, Inc., Englewood Cliffs, New Jersey 1974, pp. 15–24.
2. Hermann W Pollack, Tool Design, Reston Publishing Company, Inc., Virginia, 1976, pp. 23–35.
3. Donaldson Lecain Gold, Tool Design, Tata Mc Graw – Hill Publishing Company Ltd., New Delhi, 1978, ch. 4.
4. Heinrich L Hilbert, "Stanzereitechnik," Schneidende Werkzeuge, Carl Hanser Verlag, Muenchen, 1971.
5. J R Paquin, "Die Design Fundamentals," Industrial Press Inc., 200 Madison Avenue, New York, N.Y.10016, 1962.
6. Anthony Davidson, "Handbook of Precision Engineering, Vol.10. N.V Philips, Gloeilampenfabrieken, London, 1974.
7. J.B Moerbani, "Punching Tools 1 and 2," ATMI Polytechnic Lab., ATMI Solo Press, Indonesia 2005, pp. 7-14.

**277-280**

8. B Sudibyo and Djunarso, "Tolerance," ATMI Polytechnic Lab. ATMI Solo Press, Indonesia, 1991.
9. VB Armunanto, "Industrial Metrology" ATMI Polytechnic Lab., ATMI Solo Press, Indonesia, 2004.
10. D. Brokken, "Numerical Modelling of Ductile Fracture in Blanking" PhD Thesis, Eindhoven University of Technology, Netherland, 1999.
11. Chang T.M. "Shearing of Metal Blanks" Institute of Metals, 1951. pp. 393-414.
12. Xiao Jingrong and Jiang K, "Stamping Technology" Mechanical Industry Press, Beijing, 1993. pp 137-143.

**56.**

**Authors:** Jithesh M V, Prawin Angel Michael

**Paper Title:** Design and Analysis of a Single Phase Unipolar Inverter Using Sliding Mode Control

**Abstract:** This project is about modeling and simulation of single phase unipolar Pulse Width Modulation (PWM) inverter using sliding mode control. The model was implemented using MATLAB/Simulink with the Sim Power Systems Block Set. In this model Metal Oxide Field Effect Transistor(MOSFET) model was used as switching device. The software used to design, analysis and evaluation of single phase inverter and their controllers in this project is MATLAB/Simulink.In inverter circuit, an AC output is obtained from a DC input by appropriate sequence of switching scheme. For that,in this model Pulse Width Modulation technique is used in control the operation of switches. The switching scheme applied is unipolar. Sliding mode control (SMC) is a robust controller with a high stability in a wide range of operating conditions .It is not possible to apply directly to multi switches power converters. In this paper, a fixed switching frequency sliding mode controller is used for control a single-phase unipolar inverter. The PWM signal is used to control switching states of the MOSFETs will functions in inverter model that create the control scheme. Then, simulation is made from the inverter model in Simulink.

**Keywords:** Pulse width modulator,sliding mode control, uinpolar single phase inverter.

**References:**

1. Fossas.E and Ras.A,( 2002) "Second order sliding mode control of a buck converter," in Proc. 41st IEEE Conf. Decision Control, pp. 346–347.
2. Rech.C, Pinheiro.H, Gr¨undling H.A,Hey H.L, and Pinheiro.J.R,(2003.) "A modified discrete control law for UPS applications," IEEE Trans. PowerElectron., vol. 18, no. 5, pp. 1138–1145, Sep.
3. Low.K.S, Zhou.K.L, and Wang.D.W,(2004) "Digital odd harmonic repetitive control of a single-phase PWM inverter," in Proc. 30th Annu.Conf. IEEEInd. Electron. Soc., Busan, Korea, No. 2–6,pp. 6–11.
4. Zhang.K,Kang.Y,Xiong.J, and Chen.J,(1999)"Deadbeat control of PWM inverter with repetitive disturbance prediction," in Proc. 14th Annu.Appl.Power Electron. Conf. Expo, pp. 1026–1031.
5. Abdel-Rahim.N.M and Quaicoe.J.E,(1996) "Analysis and design of a multiple feedback loop control strategy for single-phase voltage-source ups inverters," IEEE Trans. Power Electron., vol. 11, no. 4, pp. 532–541,.
6. Wang.J,Liu.L,Zhang.F,Gong.C, and Ma.Y,(2009) "Modeling and analysis of hysteretic current mode control inverter," in Proc. 24th Annu. IEEE Appl.Power Electron. Conf. Expo, pp. 1338–1343.7] Cort´es,G.Ortiz.P, Yuz.J.I, Rodr´ıguez.J, Vazquez.S, and Franquelo.L.G,(2009)"Model predictive control of an inverter with output LC filter for UPSapplications," IEEE Trans. Ind. Electron., vol. 56, no. 6, pp. 1875–1883,.
7. Venkataramanan.G and Divan.D.M,( 1990) "Discrete time integral sliding mode control for discrete pulse modulated converters," in Proc. 21st Annu.IEEEPower Electron. Spec. Conf, pp. 67–73.
8. Erdem.H,(2007)"Comparison of fuzzy, PI and fixed frequency sliding modecontroller for DC–DC converters," in Proc. Int. Aegean Conf. Elect. Mach.Power Electron., , pp. 684–689.
9. Hu.J, Shang.L, He.Y, and Zhu.Z.Q,( 2011.) "Direct active and reactive power regulation of grid-connected DC/AC converters using sliding mode control approach," IEEE Trans. Power Electron., vol. 26, no. 1, pp. 210–222,
10. Adib Abrishamifar, Ahmad Ale Ahmad and Mustafa Mohamadian,, "Fixed Switching Frequency Sliding Mode Control for Single-Phase Unipolar Inverters," IEEE transactions on power electronics, vol. 27, no. 5, may 2012
11. Tan.S.C, Lai.Y.M, Tse.C.K, and Cheung.M.K.H,(2005) "A fixed-frequency pulse width modulation based quasi-sliding-mode controller for buck converters,"IEEE Trans. Power Electron., vol. 20, no. 6, pp. 1379–1392,.
12. RamosR.R, Biel.D, Fossas.E, and Guinjoan.F,(2003) "A fixed-frequency quasi-sliding control algorithm: Application to power inverters design by means of FPGA implementation," IEEE Trans. Power Electron., vol. 18,no. 1, pp. 344–355,.
13. Ahmad.A.A,Abrishamifar.A,and lahian.S,(2011)"Fixed frequency sliding mode controller for the buck converter," in Proc. 2nd Power Electron.,DriveSyst.Technol.Conf.,Tehran,Iran,pp.557–561.

**281-284**

**57.**

**Authors:** **Ragi R Menon, S. Jebarani Evangeline, Anish Gopinath**

**Paper Title:** **Modified Direct Torque Control of Permanent Magnet Synchronous Motor by using voltage vectors of variable amplitude and angle**

**Abstract:** In conventional direct torque controlled (DTC) permanent magnet synchronous motor drive (PMSM), there is usually unwanted torque and flux ripple. A modified direct torque control (DTC) for permanent-magnet synchronous machines, which enables important torque- ripple reduction by using voltage vectors with variable amplitude and angle, is proposed in this paper. In the proposed DTC, the magnitude of torque and flux errors are differentiated and employed to regulate the amplitude and angle of the output voltage vectors, which are finally synthesized by space vector modulation (SVM). The proposed DTC method is comparatively investigated with conventional DTC based on theory analysis and computer simulation. Simulations results validate the effectiveness of the proposed schemes in this paper.

**Keywords:** Direct Torque Control(DTC), Maximum torque per ampere(MTPA), Permanent Magnet Synchronous Motor(PMSM),Space Vector Modulation(SVM).

**References:**

1. Yongchang Zhang, Jianguo Zhu, Wei Xu, Youguang Guo, ―A Simple Method to Reduce Torque Ripple in Direct Torque-Controlled Permanent-Magnet Synchronous Motor by Using Vectors With Variable Amplitude and Angle," IEEE Transactions on Industry Application, Vol .58, Jul 2011.
2. Pragasen Pillay ―Modeling, Simulation and Analysis of Permanent Magnet Motor Drives‖, IEEE Transaction on Industry Application, Vol 25,1999
3. Takahashi.I, Noguchi.T ―A New quick-response and high efficiency control strategy of an induction machine‖, IEEE Transactions on Industry Application, Vol. 22,1986.
4. L. Zhong, M. Rahman, W. Hu, and K. Lim, ―Analysis of direct torque control in permanent magnet synchronous motor drives,‖ IEEE Transaction on Power Electron., vol. 12, no. 3, pp. 528–536, May 1997

**285-289**

5. G. S. Buja and M. P. Kazmierkowski, ―Direct torque control of PWM inverter-fed AC motors—A survey,‖ IEEE Trans. Ind. Electron., vol. 51, no. 4, pp. 744–757, Aug. 2004
6. D. Casadei. F. Profumo, and A. Tani. "FOC and DTC: two viable schemes for induction motors torque control." IEEE Transactions on Power Electronics. vol. 17.2002. pp. 779-787
7. Sanda Victorinne Paturca, Mircea Covrig, ―Direct torque control of permanent magnet synchronous motor- an approach by space vector modulation,‖ Int. Conf. on Electric Power Systems, High Voltages, Electric Machines, Tenerife, Spain, December 16-18, 2006.
8. T. Geyer, G. Papafotiou, and M. Morari, ―Model predictive direct torque control—Part I: Concept, algorithm, and analysis,‖ IEEE Trans. Ind. Electron.,vol. 56, no. 6, pp. 1894–1905, Jun. 2009.
9. G. Foo and M. F. Rahman, ―Sensorless sliding-mode MTPA control of an IPM synchronous motor drive using a sliding-mode observer and HF signal injection,‖ IEEE Trans. Ind. Electron., vol. 57, no. 4, pp. 1270–1278, Apr. 2010.
10. Sun D., Weizhong, F., Yikang, H ―Study on the Direct Torque Control of Permanent Magnet Synchronous Motor Drives‖, Electrical Machines and Systems, ICEMS 2001. Proceedings of the Fifth International Conference, pp. 571-574,2001.
11. Luukko.J, Niemel¨a.M, and Pyrh¨onen.J ―Estimation of the flux linkage in a direct-torque-controlled drive‖, IEEE Transactions on Industrial Electronics, vol. 50, no. 2, pp. 283–287,2003.
12. Sue.S.M and Pan.C.T ―Voltage-constraint-tracking-based field weakening control of IPM synchronous motor drives‖, IEEE Transactions on Industrial Electronics, vol. 55, no. 1, pp.340–347,2008.
13. Y. Zhang, J. Zhu, Y. Guo, W. Xu, Y. Wang, and Z. Zhao, ―A sensorlessDTC strategy of induction motor fed by three-level inverter based on discrete space vector modulation,‖ in Proc. AUPEC, 2009, pp. 1–6.
14. S. Kouro, R. Bernal, H. Miranda, C. Silva, and J. Rodriguez, ―Highperformance torque and flux control for multilevel inverter fed induction motors,‖ IEEE Trans. Power Electron., vol. 22, no. 6, pp. 2116–2123,Nov. 2007.
15. [15] B. Kenny and R. Lorenz, ―Stator- and rotor-flux- deadbeat direct torque control of induction machines,‖ IEEE Trans. Ind. Appl., vol. 39,no. 4, pp. 1093–1101, Jul./Aug. 2003.

**58.**

| | |
|---|---|
| **Authors:** | **Gargi Amrujkar, Pramila Adavi** |
| **Paper Title:** | **Software Based Partnering Process Model for Construction Sector** |

**Abstract:** Effective inter-firm collaboration i.e. partnering in construction sector can lead to successful projects reflecting reduction in costs, timely completion as per schedule, improved safety, total quality management and reduced claims/conflicts or disputes. This paper describes a partnering process model which is completely a web based computer application with the principle of overcoming the various problems that are associated with the traditional or manual process to achieve complete transparency at every step and at every transaction for achieving successful and strategic partnering relationships. The Partnering process includes Partner Registration, Partner Selection & Approval based on qualification criteria, Partner Evaluation based on weighted grade point average, Automated Generation of Quotation and Negotiation, forming a Partnering Agreement & setting up mutual goals & objectives and Generating automated Purchase/Work/Service order along with Time & Payment Schedule. Basis for Project Partners is to adopt a "Win - Win" approach to solve problems and develop 'Synergistic' team work amongst them.

**Keywords:** Partnering, Stakeholders, Dashboard, Online system.

**References:**

1. Partnering in the Construction Industry, Code of Practice for Strategic Collaborative Working, authors- John Bennett, P.A, Sarah Peace.
2. Critical Success Factors For Partnering In The Turkish Construction Industry, Irem Dikmen1, M. Talat Birgonul, Beliz Ozorhon And Koksal Eren, - Arcom.Ac.Uk
3. Bayramoglu, S (2001) Partnering in construction: Improvement through integration and collaboration. Leadership and Management in Engineering, 1(3), 39-43.
4. Drexler, J.A., Larson, E.W. "Partnering: Why Project Owner-Contractor Relationships Change?" Journal of Construction Engineering and Management, American Society of Civil Engineers. July/August 2000, pp. 293-297.
5. Black, C, Akintoye, A and Fitzgerald, E (2000). An analysis of success factors and benefits of partnering in construction. International Journal of Project Management, 18(6),423-432.
6. Jeroen Bemelmans, Hans Voordijk, Bart Vos, and Jan Buter. (2012) Assessing Buyer-Supplier Relationship Management: Multiple Case-Study in the Dutch Construction Industry. Journal of Construction Engineering and Management 138:1, 163-176 Online publication date: 1-Jan-2012.
7. Jeroen Bemelmans, Hans Voordijk, and Bart Vos. (2012) Supplier-contractor collaboration in the construction industry: A taxonomic approach to the literature of the 2000-2009 decade. Engineering, Construction and Architectural Management 19:4, 342-368 Online publication date: 1-Jan-2012
8. Lena E. Bygballe, Marianne Jahre, and Anna Swärd. (2010) Partnering relationships in construction: A literature review. Journal of Purchasing and Supply Management 16:4, 239-253 Online publication date: 1-Dec-2010.
9. Crane, T., Felder, ., Thompson, ., Thompson, ., and Sanders, . (1997)."Partnering Process Model." J. Manage. Eng., Journal of Management in Engineering.
10. Crowley, L. and Karim, M. (1995). "Conceptual Model of Partnering." J. Manage. Eng., 11(5), 33–39. Journal of Management in Engineering.
11. Caltrans. Field Guide to Partnering on Caltrans Projects. California Department of Transportation Statewide Planning Steering Committee. April 2000.

**290-293**

**59.**

| | |
|---|---|
| **Authors:** | **Sandeep G. Sawant, A. B. Sawant, M. B. Kumthekar, V. V. Diwan** |
| **Paper Title:** | **Construction Techniques of Retrofitting for R.C.C. Members Using Different Glass Fiber** |

**Abstract:** Worldwide, a great deal of research is currently being conducted concerning the use of fiber reinforced polymer wraps, laminates and sheets in the repair and strengthening of reinforced concrete members. Fiber-reinforced polymer (FRP) application is a very effective way to repair and strengthen structures that have become structurally weak over their life span. FRP repair systems provide an economically viable alternative to traditional repair systems and materials. Experimental data on load, deflection and failure modes of each of the beams were obtained. The detail procedure and application of GFRP sheets for strengthening of RC beams is also included. The effect of number of GFRP layers and its orientation on ultimate load carrying capacity and failure mode of the beams are investigated.

**Keywords:** FRP, GFRP, Retrofitting.

**294-301**

**References:**
1. ACI 440-2R-08- Guide for the Design and Construction of Externally Bonded FRP Systems for Strengthening Concrete Structures.
2. Fib-Externally bonded FRP reinforcement for RC structure
3. IS 10262- 2007 Recommended Guidelines for Concrete Mix Design
4. IS 456- 2000 Plain and Reinforced Concrete-Code of Practice
5. IS 516- 1959 Methods of Tests for Strength of Concrete
6. Lawrence C. Bank "Composites for Construction Structural Design with FRP Materials" (2006)
7. M. L. Gambhir, Concrete Technology (3rd Edition), Published by The McGraw-Hill Companies, New Delhi
8. M. S. Shetty, Concrete Technology Theory & Practice, Published by S. CHAND & Company, Ram Nagar, New Delhi
9. C.P. Pantelides and J. Gergely. "Seismic Retrofit of Reinforced Concrete Beam- Column T-Joints in Bridge Piers with FRP Composite Jackets".[2005]
10. Frederick T. Wallenberger, James C. Watson, and Hong Li, "Glass Fibers" PPG Industries, Inc
11. Giuseppe Oliveto and Massimo Marletta. "Seismic retrofitting of reinforced concrete building using traditional and innovative techniques" University of Catania, Italy ISET Journal of Earthquake Technology, Paper No. 454, Vol. 42, No. 2-3, June-September 2005, pp. 21-46
12. Guidelines for retrofit of concrete structures. Translation from the CONCRETE LIBRARY No.95 published by JSCE, September 1999)
13. M. A. A. Saafan. ' Shear Strengthening of Reinforced Concrete Beams Using GFRP Wraps' Czech Technical University in Prague Acta Polytechnica Vol. 46 No. 1/2006
14. Marvin W. Halling, Kevin C. Womack, "Retrofit of existing concrete beam-column Joints using advanced carbon-fiber composites". Utah State University .Logan, Utah[April 2008]
15. Patil S.S. "Shear strengthing of RC beam using carbon fiber reinforced polymer composite."University of Mumbai [2010]
16. S. K. Bhattacharyya. "Retrofitting of building structures damaged due to earthquake" Department of Civil Engineering, IIT Kharagpur
17. Suresh Chandra Pattanaik. "Structural stenthening of damaged R.C.C. structures with polymer modified concrete". Dr Fixit Institute of Structural Protection and rehabilitation, C/O-Pidilite Industries Limited, Mumbai[2009]
18. T. Jeff Guh, Ph.D., S.E.1 and Arash Altoontash, Ph.D., P.E.2 "Seismic retrofit of historic building structures" San Francisco, California, USA. April 18-22, 2006
19. Triantafillou, T. C.,1998 "Shear Strengthening of Reinforced Concrete Beams Using Epoxy- Bonded FRP Composites," ACI Structural Journal, V. 95, No. 2, Mar.-Apr. 1998, pp. 107-115.

**60.**

**Authors:** **Shaik Gowsuddin, Dr V B S Srilatha Indira Dutt**

**Paper Title:** **Ionospheric Parameters Estimation for Accurate GPS Navigation Solution**

**Abstract:** Satellite navigation system plays an increasing role in modern society. Various satellite navigation systems are in operation and being currently developed including global positioning system (GPS), global navigation satellite system (GLONASS), and Galileo. Thus, there is an increasing need for the research and development in various areas such as signal generation, signal reception, precise positioning, high-precision geodesy and survey. The satellite system transmits the navigation message signal to the earth station (or) directly to GPS users .The errors due to transmitter end, receiver end and due to atmosphere, the signal is degraded and sometimes it may be lost in space ,which in turn causes errors in accuracy of navigation solution. The errors that effect the navigation solution accuracy are: Atmospheric errors, Satellite clock errors, Ephemeris errors, Receiver noise error and error due to Multipath.
Among various kinds of error factors, the GNSS signal delay by the ionosphere is the greatest after the elimination of selective availability. The total electron content present in the ionosphere causes refraction to the GPS signal, due to this delay occurs in the GPS signal during its journey to the ground receivers which results in range delay and This delay can be estimated using single frequency receivers and as well as using dual frequency receivers. This delay due to the Ionospheric refraction is estimated around 14m-20m in range, Hence to obtain the precise navigation solution, it is necessary to estimate the ionospheric parameters such as TEC and delay. With available different modeling methods we can reduce the error in range. Hence in this paper, TEC as well as ionospheric delay are estimated for precise computation of the navigation solution.

**Keywords:** Total Electron Content, Pseudo Random Codes, Global Positioning System

**References:**
1. Kaplan, E. D., ed.,'Understanding GPS Principles and Applications', Artech House,Norwood, MA, 1996.
2. The Journal of Navigation (2008),61, 613-627.The Royal Institute of Navigation doi:10.1017/S0373463308004918 Printed in the United Kingdom
3. G.S.Rao, 'Global Navigation Satellite Systems', Tata McGrawHill publications,2010
4. V.B.S.Srilatha Indira Dutt et al,' Investigation of GDOP for precise user position computation with all in view and optimum four satellite configurations', Journal of Indian Geophysical Union, 2009,vol.13,no.3pp.139-148
5. V.B.S.Srilatha Indira Dutt et al, 'GPS Navigation Solution Performance Analysis due to Solar Eclipses in the Context of Indian Subcontinent',CIIT International Journal of Artificial Intelligent systems and Machine learning, Feb. 2010

**302-305**

**61.**

**Authors:** **Dillip Kumar Mahapatra, Tanmaya Kumar Das, Gopakrishna Pradhan**

**Paper Title:** **An Integration of JSD, GSS and CASE Tools towards the Improvement of Software Quality**

**Abstract:** The increasing demand of software products for different business organization and individuals day-by-day enforces the developers to use policy, technology in a planned manner for the development of quality software products. It is important to entertain all different phases of software development life cycle (SDLC) i.e. from requirements to implementation, maintenance to re-engineering with the use of integrated computer-aided software engineering (CASE) tools and the use of group support systems (GSS) and joint application development (JAD) in the context of CASE environments to facilitate the entire development process. An integrated framework is proposed that facilitates the developers to build up confidence for the improvement of quality for software products.

**Keywords:** Software process, Joint Application Development, Group Support System, CASE, Software Quality

**References:**
1. ANSI/IEEE Std 830-1984. IEEE Guide to Software Requirements Specifications. New York: Institute of Electrical and Electronics Engineers, 1984.

**306-312**

2. August, J.H. Joint Application Design. The Group Session Approach to System Design. Englewood Cliffs, NJ: Prentice-Hall, 1991.
3. Boehm, B.W. Software engineering. IEEE Transactions on Computer (December 1976), 225-240.
4. Brennan, P.F. CASE tools in a JAD workshop. CASE Trend, 2, 2 (1990), 5-6, 8.
5. Brooks, F.P. The Mythical Man-Month: Essays on Software Engineering. Reading, MA: Addison-Wesley, 1975.
6. Carmel, E.; Whitaker, R.D.; and George, J.F. PD and joint application design: a transatlantic comparison. Communications of the ACM, 36, 4 (June 1993), 40-48.
7. CDIF--Standardized CASE Interchange Meta-Model. EIA Interim Standard, EIA/IS-82. Washington, DC: Electronics Industries Association, July 1991.
8. Chen, M.; Liou, Y.I.; and Weber, E.S. Developing intelligent organizations: a context-based approach to individual and organizational effectiveness. Organizational Computing, 2, 2 (1992), 181-202.
9. Chen, M., and Nunamaker, J.F., Jr. The architecture and design of a collaborative environment for systems definition. Data Base, 22, 1/2 (1991), 22-29.
10. Chen, M.; Nunamaker, J.F., Jr.; and Weber, E.S. Computer-aided software engineering: present status and future directions. Data Base, 20, 1 (1989), 9-13.
11. Cook, P., et al. Project Nick: meeting argumentation and analysis. ACM Transactions on Office Information Systems, 5, 2 (1987), 132-146.
12. Couger, J.D. Evolution of system development techniques. In J.D. Couger, M.A. Colter, and R.W. Knapp (eds.), Advanced System Development/Feasibility Techniques. New York: Wiley, 1983, 6-13.
13. KEN LUNN – 1.SOFTWARE DEVELOPMENT WITH UML (2002)
14. Michael J. Pont - Software engineering with C++ and CASE tools (1996)
15. Wikipedia on CASE http://en.wikipedia.org/ wiki/ Computer- aided_software_engineering
16. Wiki on various CASE methods with a focus on Transformations http://www.program-transformation.org/Transform/WebHome

**62.**

**Authors:** **Lenisha Vincent Chirayath,R.NarcissStarbell**

**Paper Title:** **A PV Micro-Inverter System Using Repetitive Current Control**

**Abstract:** Thisproject work proposes a grid-connected photovoltaic (PV) micro-inverter system and its control implementations. A dc-dc converter is used to interface the low-voltage PV module with load. A full-bridge pulse width-modulated inverter is cascaded and injects synchronized sinusoidal current to the grid. A plug-in repetitive current controller is proposed to regulate the grid current. Repetitive controller (RC) is suitable to eliminate periodic errors in a nonlinear dynamical system. In order to achieve high accuracy in the presence of periodic uncertainties, RC can be employed to remove the line side current harmonics in this work. High power factor and very low total harmonic distortions are guaranteed under varying load conditions. The model of the proposed scheme employing a repetitive current control in PV micro-inverter has been built using MATLAB/Simulink.

**Keywords:** Boost Converter, grid-connected photovoltaic (PV) system, photovoltaic micro-inverter, repetitive current control.

**313-316**

**References:**

1. S. B. Kjaer, J. K. Pedersen, and F. Blaabjerg, "A review of single- phase grid-connected inverters for photovoltaic modules," IEEE Trans. Ind.Appl., vol. 41, no. 5, pp. 1292–1306, Sep./Oct. 2005.
2. Q. Li and P.Wolfs, "A review of the single phase photovoltaic module integrated converter topologies with three different DC link configurations," IEEE Trans. Power Electron., vol. 23, no. 3, pp. 1320–1333, May 2008.
3. R. Wai and W. Wang, "Grid-connected photovoltaic generation system," IEEE Trans. Circuits Syst.-I, vol. 55, no. 3, pp. 953–963, Apr. 2008.
4. M. Andersen and B. Alvsten, "200W low cost module integrated utility interface formodular photovoltaic energy systems," in Proc. IEEEIECON, 1995, pp. 572–577.
5. A. Lohner, T. Meyer, and A. Nagel, "A new panel-integratable inverter concept for grid-connected photovoltaic systems," in Proc. IEEE Int. Symp. Ind. Electron., 1996, pp. 827–831.
6. D. C. Martins and R. Demonti, "Grid connected PV system using two energy processing stages," in Proc. IEEE Photovolt. Spec. Conf., 2002, pp. 1649–1652.
7. T. Shimizu,K.Wada, and N.Nakamura, "Flyback-type single-phase utility interactive inverter with power pulsation decoupling on the dc input for an ac photovoltaic module system," IEEE Trans. Power Electron., vol. 21,no. 5, pp. 1264–1272, Sep. 2006.

**63.**

**Authors:** Koushik Majumder, Malay Kumar Pandit, Asim Kumar Jana

**Paper Title:** Design of a Novel Economic Multiplier in VLSI using Reversible Logic Gates

**Abstract:** In this paper, we present a new architecture for multiplication in VLSI (Very Large Scale Integration) with the advantage of less quantum cost as well as less transistor count as a result of reduction in number of gates to improve power consumption. Classical Logic Gates such as AND, OR, NAND (Except NOT) gates are not reversible that is inputs cannot be recovered from the output. On the other hand, in Reversible Logic Gates inputs can be recovered completely from the output that is there is one to one mapping between inputs and outputs. Reversible logic gates use less power compared to classical gates and under ideal condition, they consume zero power. So we have designed a new architecture for multiplication using some reversible logic gates - BVF gate and Peres Gate. This helped us to achieve 24% less quantum cost, 15% less garbage output, and 23% less no. of gates, which effectively reduces no. of transistors, and hence power consumption is minimum.

**Keywords:** Adder, Garbage Output, Multiplier, Quantum Cost, Reversible Logic, VLSI.

**317-321**

**References:**

1. Chandrakasan and Brodersen, Low Power Digital Design, Kluwer Academic Publishers, 2005
2. R. Landauer, "Irreversibility and heat generation in the computing process," IBM J. Research and development, 1961, 5 (3):183-191.
3. C.H. Bennett, "Logical reversibility of computation," IBM J. Research and Development, 1973, 17: 525-532.
4. Kerntopf, P., M.A. Perkowski and M.H.A. Khan,2004. On universality of general reversible multiple valued logic gates, IEEE Proceeding ofthe34th international symposium on multiple valued logic (ISMVL 2004), pp. 68-73.
5. Perkowski, M., A. Al-Rabadi, P. Kerntopf, A.Buller, M. Chrzanowska-Jeske, A. Mishchenko, M.AzadKhan, A. Coppola, S. Yanushkevich, V.Shmerko and L. Jozwiak, 2001. A general decomposition for reversible logic, Proc.RM'2001, Starkville, pp. 119-138
6. Perkowski, M. and P. Kerntopf, 2001. Reversible Logic. Invited tutorial, Proc. EURO-MICRO, Sept2001, Warsaw, Poland.
7. Himanshu Thapliyal, and M.B. Srinivas, 2005.Novel reversible TSG gate and its application for designing reversible carry look-ahead adder and other adder architectures, Proceedings of the 10thAsia-Pacific Computer Systems Architecture Conference (ACSAC 2005).

Lecture Notes of Computer Science, Springer-Verilog, 3740: 775-786.
8. Rathindra Nath Giri, M.K.Pandit, "Pipelined Floating-Point Arithmetic Unit (FPU) for Advanced Computing Systems using FPGA", International Journal of Engineering and Advanced Technology (IJEAT) ISSN: 2249 – 8958, Volume-1, Issue-4, April 2012
9. R. Feynman, "Quantum Mechanical Computers," Optics News, Vol.11, pp. 11–20, 1985.
10. H.R.Bhagyalakshmi, M.K.Venkatesha, "An Improved Design of a Multiplier using Reversible Logic Gates," International Journal of Engineering Science and Technology, Vol. 2(8), 2010, 3838-3845, 2011
11. M. Shams, M. Haghparast and K. Navi, "Novel Reversible Multiplier Circuit in Nanotechnology", World Applied Science Journal Vol. 3, No. 5, pp. 806-810, 2008
12. H. Thapliyal and M.B. Srinivas, "Novel Reversible Multiplier Architecture Using Reversible TSG Gate", Proc. IEEE International Conference on Computer Systems and Applications, pp. 100-103, March 2006.
13. M. Haghparast, S. Jafarali Jassbi, K. Navi and O. Hashemipour, "Design of a Novel Reversible Multiplier Circuit Using HNG Gate in Nanotechnology", World Applied Science Journal Vol. 3 No. 6, pp. 974-978, 2008.
14. M.S. Islam et al., "Low cost quantum realization of reversible multiplier circuit", Information technology journal, 8 (2009) 208.
15. A.Peres, "Reversible Logic and Quantum Computers", Physical review A, 32:3266-3276,2011
16. Anindita Banerjee and Anirban Pathak 'An analysis of reversible multiplier circuits', arXiv: 0907.3357 (2009), 1-10.
17. W. N. N. Hung, X. Song, G. Yang, J. Yang and M. Perkowski, "Quantum Logic Synthesis by Symbolic Reachability Analysis", Proc. 41st annual conference on Design automation DAC, pp.838-841, January 2004.
18. Santanu Maity,Bishnu Prasad De, Aditya Kr.Singh,"Design and Implementation of Low-Power High-Performance Carry Skip Adder"International Journal of Engineering and AdvancedTechnology (IJEAT), ISSN: 2249 – 8958, Volume-1, Issue-4, April 2012
19. S. Ravi Chandra Kishore, K.V. Ramana Rao, "Implementation of carry-save adders in FPGA", International Journal of Engineering and Advanced Technology (IJEAT), ISSN: 2249–8958, Volume-1, Issue-6, August 2012

**64.**

**Authors:** **Ekta Desai, Mary Grace Shajan**

**Paper Title:** **A Review on the Operating Modes of Near Field Communication**

**Abstract:** Near Field Communication is based on inductive coupling, where loosely coupled inductive circuits share power and data over a distance of a few centimeters. An NFC-enabled device can operate in three different modes. They are reader/writer mode, peer-to-peer mode, and card emulation mode. NFC allows two way interactions between electronic gadgets with more security and simplicity.

**Keywords:** Card emulation mode, Inductive coupling, NFC, Peer to peer mode, Reader/writer mode

**References:**

1. Vedat Coskun, Kerem Ok, Busra Ozdenizci, "Near Field Communication From Theory to Practice", NFC Lab Istanbul, ISIK University, Turkey: WILEY, 2012
2. David M. Monteiro, Joel J. P. C. Rodrigues, and Jaime Lloret, Instituto de Telecomunicações, University of Beira Interior, Portugal , Integrated Management Coastal Research Institute, Universidad Politécnica de Valencia, Spain, "A secure NFC Application for Credit Transfer Among Mobile Phones" IEEE, 2012
3. NFC Forum website. http://www.nfc-forum.org/
4. Madlmayr, G. Langer, J. ; Kantner, C. ; Scharinger, J. " Current benefits & future directions of NFC" Univ. of Appl. Sci. of Upper Austria, Hagenberg, 4-7 March, 2008
5. Eric Freudenthal, David Herrera, Frederick Kautz, Carlos Natividad, Alexandria Ogrey, Justin Sipla, Abimael Sosa, Carlos Betancourt, and Leonardo Estevez "Suitability of NFC for Medical Device Communication and Power Delivery"
6. Near Field Communication and the NFC Forum: "The Keys to Truly Interoperable Communication", Wakefield, USA, 2007
7. http://www.techspot.com/guides/385-everything-about-nfc/
8. http://campbuzzz.blogspot.in/2011/11/nfc- near-field-communication.html
9. www.nfc-rfid.com

**322-325**

**65.**

**Authors:** **Mehnaz Khan, S.M.K. Quadri**

**Paper Title:** **Evaluating Various Learning Techniques for Efficiency**

**Abstract:** Machine learning is a vast field and has a broad range of applications including natural language processing, medical diagnosis, search engines, speech recognition, game playing and a lot more. A number of machine learning algorithms have been developed for different applications. However no single machine learning algorithm can be used appropriately for all learning problems. It is not possible to create a general learner for all problems because there are varied types of real world datasets that cannot be handled by a single learner. In this paper we present an evaluation of various state-of-the-art machine learning algorithms using WEKA (Waikato Environment for Knowledge Analysis) for a real world learning problem- credit approval used in banks. First we provide a brief description about WEKA. After that we describe the learning problem and the dataset that we have used in our experiments. Later we explain the machine learning methods that we have evaluated. Finally we provide description about our experimental setup and procedure and discuss the conclusion and the result.

**Keywords:** credit approval, machine learning, test sets and training sets.

**326-331**

**References:**

1. Hand, David J. (1998): "Reject inference in credit operations," in Credit Risk Modeling: Design and Application (ed. E. Mays), 181-190, AMACOM.
2. Murphy, K.P.(2006) Naïve Bayes Classifiers.
3. K.H. Ng, Commercial Banking in Singapore. Singapore: Addison Wesley, 1996, pp. 252-253.
4. Steinwender, J. and Bitzer, S. Multilayer Perceptrons, A discussion of The Algebraic Mind 2003, University of Osnabrueck, (2003).
5. Freund,Y.and Schapire, R. Experiments with a new Boosting Algorithm. In Machine Learning: Proceedings of the Thirteenth International Conference, 148-156. (1996).
6. Quinlan, J. C4.5: Programs for Machine Learning. Morgan Kaufmann, San Mateo, 1993.
7. Liu, Y. New Issues in Credit Scoring Applications (2001).
8. Van den Bosch, A., Daelemans, W. and Weijters, A. 1996. Morphological analysis as classification: an inductive-learning approach. In K. Ofiazer and H. Somers, editors, Proceedings of the Second International Conference on New Methods in Natural Language Processing.

**66.**

**Authors:** S.Nithya, S.K.Deepika, G.Sindhu

**Paper Title:** A Review of Energy Aware Routing Protocols in MANET

**Abstract:** A Mobile Ad hoc Network (MANET) is a network consisting of a set of mobile hosts capable of communicating with each other without the assistance of base stations. This type of network having tiny light weighted nodes, with no clock synchronization mechanisms. In a MANET there are no dedicated routers and all network nodes must contribute to routing. Classification of routing protocols for MANET is based on how routing information is acquired and maintained by mobile nodes and/or on roles of network nodes in a routing. The wireless and distributed nature of MANETs poses a great challenge to system energy and the security.Mobile Ad hoc Networks (MANET) is a set of wireless mobile nodes dynamically form spontaneous network which works without centralized administration. Due to this characteristic, there are some challenges that protocol designers and network developers are faced with. These challenges include routing, service and frequently topology changes. Generally, in this type of network the exhaustion of energy will be more and as well, the security is missing due to its infrastructure less nature. There are also limited battery power and low bandwidth available in each node. Security attacks against MANET routing can be passive and or active. An overview of active attacks based on modification, impersonation/spoofing, fabrication, wormhole, and selfish behaviour is presented. A comparison of existing secure routing protocols form the main contribution in this paper, while some future research challenges in secure MANET routing are discussed

**Keywords:** Limited Battery Power, MANET, Routing Protocol, Routing Security

**References:**

1. X.-Y. Li, Y. Wang, H. Chen, X. Chu, Y. Wu, and Y. Qi, "Reliable and energy-efficient routing for static wireless ad hoc networks with unreliable links," IEEE Trans. Parallel Distrib. Syst., vol. 20, no. 10, pp. 1408–1421, 2009.
2. Mohanoor, S. Radhakrishnan, and V. Sarangan, "Online energy aware routing in wireless networks," Ad Hoc Networks, vol. 7, no. 5, pp. 918–931, July 2009.
3. Ashwani kush ,Divya Sharma, Sunil Taneja, "A Secure and Power Efficient Routing Scheme for Ad Hoc Networks", International journal of Computer Applications, Volume 21-No 6, May 2011
4. V. Kanakaris*, D. Ndzi and D. Azzi., Ad-hoc Networks Energy Consumption: A review of the Adhoc Routing Protocols, Journal of Engineering Science and Technology Review 3 (1) (July 2010).
5. Dr. A. Rajaram, J. Sugesh, Power Aware Routing for MANET using on Demand Multi path Routing Protocol, International Journal of Computer Science Issues, Vol. 8, Issue 4, No 2, July 2011.
6. Dhiraj Nitnaware1 & Ajay Verma, "Performance Evaluation of Energy Consumption of Reactive Protocols under Self-Similar Traffic", International Journal of computer science and communication vol.1, No.1, January-June 2010.
7. Busola S.Olagbegi and Natarajan Meganathan "A Review Of the Energy Efficient and Secure Multicast routing protocols for mobile ad hoc networks", International journal on applications of graph theory in wireless ad hoc networks and sensor networks,Vol 2, No.2, June 2010
8. J. Gomez, A. T. Campbell, M. Naghshineh, and C. Bisdikian, "Paro: supporting dynamic power controlled routing in wireless ad hoc networks," Wireless Networks, vol. 9, no. 5, pp. 443–460, 2003.
9. Huaizhi Li and Mukesh Singhal, 2006."A Secure Routing Protocol for Wireless Ad Hoc Networks", in proceedings of 39th Annual Hawaii International Conference on System Sciences, Vol.9.
10. A. Patwardhan, J. Parker, M. Iorga, A. Joshi, T. Karygiannis and Y. Yesha, 2008. "Thresholdbased intrusion detection in ad hoc networks and secure AODV", Vol.6, No.4, pp.578-599.
11. Tarag Fahad & Robert Askwith, 2006. "A NodebMisbehaviour Detection Mechanism forbMobile Ad-hoc Networks" The 7th Annual PostGraduate Symposium on the Convergence of Telecommunications, Networking and Broadcasting.
12. M. Mohammed, Energy Efficient Location Aided Routing Protocol for Wireless MANETs, International Journal of Computer Science and Information Security, vol. 4, no. 1 & 2, 2009.
13. J. Vazifehdan, R. Hekmat, R. V. Prasad, and I. Niemegeers, "Performance evaluation of power-aware routing algorithms in personal networks," in The 28th IEEE International Performance Computing and Communications Conference (IPCCC '09), pp. 95–102, Dec. 2009.
14. Wang Yu, "Study on Energy Conservation in MANET", Journal of Networks, Vol. 5, No. 6,June 2010.
15. Niranjan Kumar Ray & Ashok Kumar Turuk, (2010) "Energy Efficient Techniques for Wireless Ad Hoc Network", International Joint Conference on Information and Communication Technology,pp105-111.
16. Ns-2 network simulator, http://www.isi.edu/nsnam/ns/, 1998

**332-338**

**Authors:** **M.Sathya, K.Kalaiarasi**

**Paper Title:** **Improved QoS for Fixed WiMAX Network**

**67.**

**Abstract:** Applications such as video and audio streaming, online gaming, video conferencing, Voice over IP (VoIP) and File Transfer Protocol (FTP) demand a wide range of QOS requirements such as bandwidth and delay. IEEE 802.16 standard called WIMAX provides broadband wireless access with QOS requirements.
The proposed work consists of a new uplink scheduling and Call Admission Control (CAC) algorithm for preferential treatment of service flows depending on QOS requirements. Using this scheduling and Call Admission Control algorithm fairness enhancement, with more connection acceptance

**Keywords:** Call Admission Control (CAC), File Transfer Protocol (FTP) , scheduling, Voice over IP (VoIP)

**References:**

1. Elmabruk Laias and Irfan Awan, "An interactive QOS framework for fixed WIMAX networks" IEEE Trans. Mobile Comput., vol. 9, no. 6, pp. 621–632, Jun. 2010.
2. Beard , Arijit Ukil, "QoS aware prediction call admission control and resource allocation in WIMAX", IEEE Trans. Computers and Devices for Communication,vol.6 no. 5, pp. 618–633, Oct. 2009
3. Chingyao Huang-Hai, Meng-Shiang Lin and Chung -Ju ," A performance of uplink scheduling algorithms in point-to-multipoint WiMAX networks" IEEE Trans. Mobile Comput., vol. 6,no. 6, pp. 621–632, Jun. 2007.
4. J. G. Andrews, Ph. D and R. Muhamed, Fundamental of WiMAX: Understanding theBroadband Wirele Networking. Upper Saddle River, NJ: Prentice Hall, 2007
5. H. Rath, A. Bhorkar, and V. Sharma," An opportunistic uplink scheduling scheme to achieve bandwidth fairness and delay for multiclass traffic in Wi-Max (IEEE 802.16) broadband wireless networks", in: Proceedings of IEEE Global Telecommunication. Conference, November 2006, pp. 1–5.
6. J. Chen, W. Jiao and H.Wang,"WIMAX QoS oriented bandwidth allocation scheduling algorithm", in: Proc. IEEE International Conf. on Communications, (ICC 2005), 2005, pp. 3422–3426
7. Jes´us Delicado, Luis Orozco-Barbosa, Francisco Delicado and Pedro Cuenca"A QoS-aware protocol architecture for WiMAX",

**339-342**

Proceedings of 3rd International Conference on Networking and Mobile Computing, pp.652-661, August 2005
8. Samuel K. Falowo and Neco Ventura," An Efficient Connection Admission Control (CAC) for QoS Provisioning in IEEE 802.16", in The Falls Resort and Conference Centre, Livingstone, Zambia
9. Haitang Wang, Wei Li and D.P, Agrawal, "Dynamic admission control and QoS for 802.16 Wireless MAN," in Wireless Telecommunications Symposium, April 2005, pp.60-66.

**68.**

**Authors:** V V Rajesh Parvathala, T Venkateswarareddy, N V G Prasad

**Paper Title:** Arm Based Wireless Energy Meter Reading System ALONG with POWER on/off CIRCUIT

**Abstract:** In this paper we discuss about wireless energy meter reading system along with power on/off circuit. It is a simple system which is used for measuring electrical bills through wireless communication and sends the information regarding consumed power & also send the dead line for paying of electrical bill and the system also having the power on/off circuit used to disconnect the power supply to energy meter by using wireless technology when the consumer fail to pay the electrical bill. Disconnecting the power supply through proper selection of switch located at the control unit. System also sends an acknowledgement to consumer regarding status of the system. Wireless energy meter reading system developed with ARM7 Processor, wireless communication network and other peripheral circuits.

**Keywords:** wireless meter reading system, zig-bee, GSM, ARM7 processor.

**References:**

1. Li Xiaoguang Hu, "Design of an ARM-Based Power Meter Having WIFI Wireless Communication Module" IEEE 2009.
2. S. Koay, etc, "Design and implementation of Bluetooth energy meter", Proceedings of the Joint Conference of the Fourth International Conference on Information, vol. 3, pp.1474-1477, Dec. 2003.
3. Petri Oksa, Mikael Soini, "Considerations of Using Power Line Communication in the AMR System", 2006 IEEE International Symposium on 26-29, pp.208-211, Mar. 2006
4. S. Battermann and H. Garbe, "Influence of PLC transmission on the sensitivity of a short-wave receiving station," IEEE Power Line Communications and Its Applications, pp.224-227, Apr. 2005.
5. Chih-Hung Wu, etc, "Design of a Wireless ARM Based Automatic Meter Reading and Control System", Power Engineering Society General Meeting, 2004. IEEE 6-10, Vol.1, pp.957-962, June 2004
6. Yu Qin, "The Research and Application of ARM and GPRS Technology in Remote Meter Reading Terminal Equipment", A Thesis Submitted in Partial Fulfilment of the Requirements for the Degree of Master of Engineering, 2007
7. Honestar Electronics Co., Ltd, "Single-phase bidirectional Power/Energy IC-CS5460A", Jan.2003.
8. L. Shiwei, etc, "Design of an automatic meter reading system," Proceedings of the 1996 IEEE IECON 22nd International Conference on Industrial Electronics, pp.631-636, Aug. 1996
9. Liting Cao, Jingwen Tian and Dahang Zhang, "Networked Remote Meter-Reading System Based on Wireless Communication Technology" in International Conference on Information Acquisition, 2006 IEEE.
10. Liting Cao, Wei Jiang, Zhaoli Zhang "Automatic Meter Reading System Based on Wireless Mesh Networks and SOPC Technology" in International Conference on Intelligent Networks and Intelligent Systems, 2009 IEEE.
11. P. Zerfos, X. Meng, S. Wong, V. Samanta, and S. Lu, "A study of the short message service of a nationwide cellular network," in ACM SIGCOMM Internet Measurement Conf., Oct. 2006.

**343-346**

**69.**

**Authors:** **Maninder Kaur, Parminder Singh**

**Paper Title:** **A Mathematical Approach to Avoid Congestion and To Analyize Snoop Behaviour In Wired Cum Wireless Network**

**Abstract:** Performance of the TCP (Transmission Control Protocol) has been promising in wired networks. In wired network the packet loss is due to congestion. But the performance of TCP has degraded in wireless network where packet loss is not only due to congestion but to be also due to high bit error rates and hand offs. Also improving its performance in wired-cum-wireless networks preserving the end-to-end nature of TCP is a difficult task. To address this issue, several new protocols and TCP modifications have been proposed. Snoop is one such modification. In this paper we have surveyed some of the proposed solutions to improve TCP performance on wired-cum-wireless medium.

**Keywords:** Snoop Protocol, TCP, Snoop Module, wired-cum-wireless networks, Congestion.

**References:**

1. Kostas Pentikousis "TCP in wired-cum-wireless environments" Department of Computer Science State Uiversity of New York at Stony Brook.
2. "I-TCP: Indirect TCP for mobile hosts," in Proc. 15th Int. Conf. Distributed Computing Syst. (ICDCS), May 1995[3]
3. H . Balakrishnan, S. Seshan, and R. H. Katz, "Improving reliable transport and handoff performance in cellular wireless networks," ACM Wireless Networks, vol. 1, Dec. 1995.
4. R. Yavatkar and N. Bhagwat, "Improving end-to-end performance of TCP over mobile internetworks," in Mobile 94 Workshop Mobile Computing Syst. Appl., Dec. 1994.
5. E. Ayanoglu, S. Paul, T. F. LaPorta, K. K. Sabnani, and R. D. Gitlin, "AIRMAIL: A link-layer protocol for wireless networks," ACM ACM/Baltzer Wireless Networks J., vol. 1, pp. 47–60, Feb. 1995.
6. Ashish Natani , et.al "TCP for Wireless Networks" Computer Science Program, University of Texas at Dallas, Richardson, November 12, 2001.
7. Dimitrios Koutsonikolas, et.al" lOn TCP Throughput and Window Size in Multihop Wireless Network "Testbed ,Center for Wireless Systems and Applications, Purdue University.
8. Prasad Nambiar ,et.al "Snoop Behaviour in Multihop Wireless Networks "School of Computer Science University of Hertfordshire Hatfield Hertfordshire,2010.
9. Mr. Manish, D.Chawhan, Dr Avichal R.Kapur "Performance Enhancement of TCP Using ECN and Snoop Protocol for Wi-Max Network" Shri Ramdeobaba Kamla Nehru College of Engg, International Journal of Computer Applications.
10. Srikanth Tiyyagura ,Rajesh Nutangi "An Improved Snoop For TCP RENO And TCP SACK In Wired-Cum-Wireless Networks."Department of Computer Science and Engineering JNTUA College of Engg., pulivendula , Andhra Pradesh, India. july ,2011.
11. M. Alnuem, J. Mellor "TCP Multiple drop action for transmission errors "School of Informatics, University of Bradford ,2008.
12. In Huh ,et.al "Decision of Maximum Congestion Window Size for TCP Performance Improvement by Bandwidth and RTT Measurement in Wireless Multi-Hop Networks", International Journal of Information Processing Systems, Vol.2, No.1, March 2006
13. Amir, E., Balakrishnan, H., Seshan S. and Katz, R. H. Efficient TCP over networks with wireless links, IEEE, September 1994.

**347-352**

14. W. Richard Stevens, G. Gabrani "TCP/IP Illustrated, The Protocols Volume 1"published by Pearson Education,2009.
15. Parminder Singh "Performance Issues and Comparative Study between TCP over Wireless Link Approaches",ICACCT,2012.
16. Parminder Singh , Kanwalvir Dhindsa" Analytical study of performance of TCP Reno over wireless networks", ICETEC,2009.

**70.**

**Authors:** **B.Sravan Kumar, Rajeshwara Mahidhar.P, N.V.G.Prasad**

**Paper Title:** **Energy Efficient Adiabatic Full Adders for Future SOC's**

**Abstract:** In this paper we are going to compare the adiabatic logic designs & designing a new full adder using ECRL & PFAL logics after that the simulations were done using Micro wind & DSCH. Thus the efficiency of the circuits is shown & compared using different nano meter technologies.

**Keywords:** Adiabatic, ECRL, Adder, PFAL adder, Full adder, Low Power Adders.

**References:**

1. P. CHANDRAKASAN, S. SHENG, AND R. W. BRODERSEN, "Low Power CMOS Digital Design," IEEE Journal of Solid-state Circuits, Vol. 27, No. 04, pp.473-484, April 1999.
2. H. J. M. VEENDRICK, "Short-circuit Dissipation of Static CMOS Circuitry and its Impact on the Design of Buffer Circuits," IEEE JSSC, pp. 468-473, August 1984.
3. J. M. RABAEY, AND M. PEDRAM, "Low Power Design Methodologies," Kluwer Academic Publishers, 2002.
4. M. HOROWITZ, T. INDENNAUR, AND R. GONZALEZ, "Low Power Digital Design, "Technical Digest IEEE Symposium Low Power Electronics, San Diego, pp. 08-11, October 1994.
5. T. SAKURAI AND A. R. NEWTON, "Alpha-Power Law MOSET Model and its Applications to CMOS Inverter Delay and other Formulas," IEEE JSSC, vol. 25, no. 02, pp. 584- 594, October 1990
6. A. P. CHANDRAKASAN AND R. W. BRODERSEN, Low-power CMOS digital design, Kluwer Academic, Norwell, Ma, 1995.
7. SUNG-MO KANG AND YUSUF LEBLEBICI, CMOS Digital Integrated Circuits - Analysis and Design, McGraw-Hill, 2003.
8. J. S. DENKER, "A Review of Adiabatic Computing," Technical Digest IEEE Symposium Low Power Electronics, San Diego, pp. 94-97, October 1994.
9. T. GABARA, "Pulsed Power Supply CMOS," Technical Digest IEEE Symposium Low Power Electronics, San Diego, pp. 98- 99, October 1994
10. T. INDERMAUER AND M. HOROWITZ, "Evaluation of Charge Recovery Circuits and Adiabatic Switching for Low Power Design," Technical Digest IEEE Symposium Low Power Electronics, San Diego, pp. 102-103, October 2002
11. B.VOSS.AND.M.GLESNER,"A LowPower Sinusoidal Clock," In Proc. of the International Symposium on Circuits and Systems, ISCAS 2001.
12. W. C. ATHAS, J. G. KOLLER, L. SVENSSON, "An Energy- Efficient CMOS Line Driver using Adiabatic Switching

**353-356**

**71.**

**Authors:** **Voore Subba Rao, Vinay Chavan**

**Paper Title:** **A User Friendly Window Based Application for Calculation of Query Execution Time for Relational Databases**

**Abstract:** In order to managing and calculating query execution time for Relational Database Management System (RDBMS), one must be fluent in Structured Query Language(SQL). The important concept considered in SQL are (entities, relationships, attributes) and the data schema while using SQL. The user has to remember the syntax of Query to maintain database management which is very difficult. However, normal users are not familiar with query languages and database structures, but would like to know the execution time of queries of various RDBMS languages and access data in a more user friendly way.

**Keywords:** Execution time, Query execution, User friendly query, Time estimation, Window based application.

**References:**

1. Eric L.Barsness, Pine Islad,MN, John M.Santosuesso, Rochester "Estimating and Monitoring query Processing Time" IEEE 2012.
2. Mustafa Jarrar, Marios D. Dikaiakos, "A Query Formulation Language for the Data Web" Journal of IEEE 2011.
3. Eric L.Barsness, Pine Islad,MN, John M.Santosuesso, Rochester "Estimating and Monitoring query Processing Time" IEEE 2012.
4. Mustafa Jarrar, Marios D. Dikaiakos, "A Query Formulation Language for the Data Web" Journal of IEEE 2011.
5. Lerina Aversano, Gerardo Canfora, Andrea De Lucia, Silvio Stefanucci, "Understanding SQL through Iconic Interfaces" Journal of IEEE.
6. Mustafa Jarrar, Marios D. Dikaiakos "MashQL: A Query-by-Diagram Topping SPARQL -Towards Semantic Data Mashups", ONISW'08, October 30, 2008, Napa Valley, California, USA,1-15.
7. M. Angelaccio, T. Catarci, and G.Santucci, "QBD: A Fully Visual Query System", Journal on Visual Languages and Computing, vol. 1,no. 2, 1990, pp 255-273.
8. M. Angelaccio, T. Catarci, and G.Santucci, "QBD: A Fully Visual Query System", Journal on Visual Languages and Computing, vol. 1,no. 2, 1990, pp 255-273.
9. M. Angelaccio, T. Catarci, and G.Santucci, "QBD: A Graphical Query Language with Recursion", IEEE Transactions on Software Engineering, vol. 16, no.10, 1990, pp 1150-1163.
10. M.M. Zloof, "Query-by-Example: A Database Language", IBM Systems Journal, vol. 16, no. 4, 1977, pp. 324-343.
11. 9] P. Reisner, "Query Languages", M. Helander ed. Handbook of Human-Computer Interaction, Elsevier Science Publ.,1988, pp 257-280.
12. [10 ]P. Reisner, "Query Languages", M. Helander ed. Handbook of Human-Computer Interaction, Elsevier Science Publ., 1988, pp 257-280.
13. G. Ozsoyoglu, V. Mates, and Z.M. Ozsoyoglu, "Query Processing Techniques in the Summary-Table-by-example Database Query Language", ACM TODS, vol. 14, no. 4, Dec. 1989, pp. 526-573
14. T. Catarci, M.F. Costabile, S. Levialdi, C. Batini, "Visual Query Systems for Databases: A Survey", Technical Report SI/RR-95/17 of Dipartimento di Scienze dell'Informazione,University of Rome "La Sapienza", 1995.

**357-361**

**72.**

**Authors:** **Shabia Shabir Khan, Mushtaq Ahmed Peer, S.M.K Quadri**

**Paper Title:** **Scaling Up for the Streaming Data**

**Abstract:** Knowledge has always been the success factor for any organization (business / technical). Survey 2012 shows that every day about 2.5 quintillion (2.5×1018) bytes of data were created. As a result we are facing a challenge of handling such voluminous, potentially infinite, fast changing, temporally ordered data streams in a proper and timely manner so as to extract useful knowledge from that. However, due to its tremendous volume, we cannot store the whole of the streaming data in our limited or finite storage and due to its continuous flow we have to process it in a single pass, in contrast to the warehoused data where we could go through the data in multiple passes.

**362-368**

In addition to this, we have to work in a limited amount of time. So, time and space are the important aspects that are taken into consideration while handling the streams of data. This paper discusses and compares those issues in the light of some sketching and counting algorithms and provides application oriented data-flow architecture for processing the streaming data along with the Granularity based approach that takes into consideration the resource awareness and adaptation for data stream mining algorithms. Further, since Analysts are mostly interested either in the recent data or in the broader view of the data, so this paper discusses a dynamic H-cube to facilitate multi-resolution analysis of streaming data wherein the Partial materialization is performed and computations are done on the fly using a tilted time frame.

**Keywords:** Frequency as an Interestingness Criteria, Partial Materialization, Streaming Data, Time Granularity.

**References:**

1. Nan Jiang and Le Gruenwald,"Research issues in Data Stream Association Rule Mining",SIGMOD Record, Vol. 35, No. 1, Mar. 2006.
2. J. Han, J. Pei, G. Dong, and K. Wang,"Efficient computation of iceberg cubes with complex measures" SIGMOD, 2001.
3. J. Han, J. Pei, and Y. Yin.," Mining frequent patterns without candidate generation", SIGMOD, 2000.
4. Jiawei Han, MichelineKamber , Book:"Data Mining: Concepts and Techniques";Morgan Kaufmann Publishers
5. Vladimir Braverman, Rafail Ostrovsky, Carlo Zaniolo ," Optimal sampling from sliding windows", PODS '09 Proceedings of the twenty-eighth ACM SIGMOD-SIGACT-SIGART symposium on Principles of database systems , Pages 147-156
6. A. Arasu, B. Babcock, S. Babu, J. Cieslewicz, M. Datar, K. Ito, R. Motwani, U. Srivastava, J. Widom, "STREAM: The Stanford Data Stream Management System," Book Chapter –"Data-Stream Management: Processing High-Speed Data Streams", Springer-Verlag, 2005.
7. Graham Cormode , S. Muthukrishnan , Irina Rozenbaum, "Summarizing and mining inverse distributions on data streams via dynamic inverse sampling", Proceedings of the 31st international conference on Very large data bases, August 30-September 02, 2005, Trondheim, Norway
8. Guy P. Nason and Rainar Won Sachs, Phil. Trans. R.Soc.Lond,"A Wavelets in time series an analysis ", IEEE Int'l Frequency control Symposium (2000)
9. R.J.E. Merry ,"Wavelet Theory and Applications, A literature study", DCT 2005.53Eindhoven, June 7, 2005 ,
10. Mohammed A. H. Lubbad and Wesam M. Ashour, "Cosine-Based Clustering Algorithm Approach ", Copyright © 2012 MECS , I.J. Intelligent Systems and Applications, 2012, 1, 53-63
11. Noga Alon, Yossi Matias, Mario Szegedy, February 22, 2002, "The space complexity of approximating the frequency moments ",A preliminary version of this paper appeared in Proceedings of the 28th
12. Annual ACM Symposium on Theory of Computing (STOC), May, 1996.
13. Lukasz Golab and Theodore Johnson, "Consistency in a stream Wraehouse",5th Biennial Conference on Innovative Data Systems Research(CIDR'11),California , USA
14. F. Deng, D. Rafiei,"New Estimation Algorithms for Streaming Data: Count-min Can Do More", 2007, http://webdocs.cs.ualberta.ca/
15. Gurmeet Singh Manku, Rajeev Motwani, "Approximate Frequency Counts over Data Streams " , Proceedings of the 28th VLDB Conference, Hong Kong, China, 2002
16. Graham Cormode and S. Muthukrishnan ,"An Improved Data Stream Summary:The Count-Min Sketch and its Applications", preprint submitted to Elsevier Science 16 December 2003
17. A. Metwally, D. Agrawal, A.E. Abbadi, " Efficient Computation of Frequent and Top-K Elements in Data Streams", In: International Conference on Database Theory (2005).
18. Xenofontas Dimitropolos, Paul Hurley, Andreas Kind, "Probabilistic Lossy Counting:An efficient algorithm for finding heavy hitters", ACM SIGCOMM Computer Communication Review 7 Volume 38, Number 1, January 2008.
19. Mohamed Medhat Gaber , Shonali Krishnaswamy , Arkady Zaslavsky, "Resource-aware Mining of Data Streams" , Journal of Universal Computer Science, vol. 11, no. 8 (2005), 1440-1453 submitted: 10/3/05, accepted: 5/5/05, appeared: 28/8/05 © J.UCS
20. Ajith Abraham, Aboul-Ella Hassanien, André Ponce de Leon F. de Carvalho, Vaclav Snášel, "Foundations of Computational Intelligence: Volume 6: Data Mining" , Springer 2010
21. Jiawei Han, Yixin Chen, Guozhu Dong,Jian Pei, Benjamin W.Wah, Jianyong Wang,Y,Dora Cai, "Stream Cube: An Architecture for Multi-Dimensional Analysis of Data Streams", Distributed and Parallel Databases, 2005, Springer Science + Business Media, Inc. Published online: 20 September 2005
22. Shabia Shabir , Dr. Mushtaq Ahmed Peer ,"Expedition for the exploration of Apposite Knowledge" , IJCSIT-2012(IJCSIT) International Journal of Computer Science and Information Technologies, Vol. 3 (5) , 2012,5164 – 5168.
23. Mohamed Medhat Gaber ,"Advances in data stream mining ,WIREs Data Mining Knowl Discov 2012.

**73.**

**Authors:** **Ayman Elnaggar, Mokhtar Aboelaze**

**Paper Title:** **An Efficient Methodology for Mapping Algorithms to Scalable Embedded Architectures**

**Abstract:** This paper presents a general approach for generating higher order (longer size) multidimensional (m-d) architectures from lower order (shorter sizes) architectures. The objective of our work is to derive a unified framework and a design methodology that allows direct mapping of the proposed algorithms into embedded reconfigurable architectures such as FPGAs. Our methodology is based on manipulating tensor product forms so that they can be mapped directly into modular parallel architectures. The resulting circuits have very simple modular structure and regular topology.

**Keywords:** Reconfigurable Architectures, Recursive algorithms, multidimensional transforms, tensor products, permutation matrices.

**References:**

1. A. E. Cetin, O. N. Gerek, and S. Ulukus, "Block Wavelet Transforms for Image Coding," IEEE Trans. on Circuits and systems for Video Technology, Vol. 3, pp. 433-435, 1993.
2. A. Elnaggar, Mokhtar Aboelaze, "A Scalable Formulation for 2-D WHT," Proc. of the IEEE International Symposium on Circuits and Systems (ISCAS' 2003), pp IV484-IV487, Thailand, May 2003.
3. A. Elnaggar, H. M. Alnuweiri, " A New Multi-Dimensional Recursive Architecture for Computing The Discrete Cosine Transform," IEEE Transactions on Circuits and Systems for Video Technology, Vol. 10, No. 1, pp. 113-119, February 2000.
4. A. Elnaggar and M. Aboelaze, "An Efficient Architecture for Multi-Dimensional Convolution," IEEE Trans. on Circuits and Systems II, Vol. 47, No. 12, pp. 1520-1523, 2000.
5. A. Elnaggar and M. Aboelaze, "A Modified Shuffle Free Architecture for Linear Convolution," IEEE Trans. on Circuits and Systems II, Vol. 48, No. 9, pp. 862-866, 2001.
6. J. Granata, M. Conner, R. Tolimieri, "A Tensor Product Factorization of the Linear Convolution Matrix", IEEE Trans on Circuits and Systems, Vol. 38, p. 1364--6, 1991.

**369-374**

7. H. S. Hou, "A Fast Recursive Algorithm for Computing the Discrete Cosine Transform," IEEE Trans. On ASSP, Vol. Assp-35, No. 10, 1987.
8. K. R. Rao, P. Yip, "Discrete Cosine Transform: Algorithms, Advantages, and Applications," Academic Press, 1990.
9. W. K. Pratt, Digital Image Processing, John Wiley & Sons, Inc., 1991.
10. R. Tolimieri, M. An, C. Lu, Algorithms for Discrete Fourier Transform and Convolution, Springer-Verlag, New York 1989.
11. Chi-Li Yu, et. al, "Architecture for 2D Discrete Fourier Transform Based on 2D Decomposition for Large-sized Data", Springer Science, Business Media, LLC 2010.

**74.**

**Authors:** **V. B. Jagdale, R. J. Vaidya**

**Paper Title:** **High Definition Surveillance System Using Motion Detection Method based on FPGA DE-II 70 Board**

**Abstract:** The low cost High Definition (HD) Surveillance system using Field-programmable Gate Array (FPGA) DE-II 70 Development Education Board is proposed in this paper. The proposed solution can be applied not only to various security systems, but also to environmental surveillance. Firstly, the basic principles of HD CMOS Camera Module & motion detection algorithm are given. The HD CMOS Camera Module is used to capture the surveillance video and send the video data i.e. RAW format data to FPGA DE-II 70 board. The motion detection algorithm is used to minimize the recorded data storing capacity. The Automatic motion detection system which can effectively attract operator attention and trigger recording is therefore the key to successful HD surveillance in dynamic scenes. The proposed methods can be well-suited for HD surveillance architectures, where limited computing power is available near the camera for communication. In the proposed system, HD camera is linked with Altera FPGA platform (DE-II 70 Board) where a motion detection algorithm is implemented and recorded video is stored on SD card. FPGA on an Altera DE-II 70 board was used to develop the custom hardware required to perform the motion detection algorithm. The Altera NIOS II embedded processor system was used to perform all hardware interaction tasks necessary on the DE-II 70 board and the custom hardware was constructed as modules inside the NIOS II system.

**Keywords:** HD CMOS Camera Module, Motion Detection Algorithm, Surveillance System.

**References:**

1. Shih-Chia Huang, "An Advanced Motion Detection Algorithm with Video Quality Analysis for Video Surveillance Systems" IEEE Transactions on Circuits and Systems for Video Technology, VOL. 21, NO. 1, JANUARY 2011.
2. Obianuju Ndili and Tokunbo Ogunfunmi, "Algorithm and Architecture Co-Design of Hardware-Oriented, Modified Diamond Search for Fast Motion Estimation in H.264/AVC" IEEE Transactions on Circuits and Systems for Video Technology, VOL. 21, NO. 9, SEPTEMBER 2011.
3. Mohammed S. Sayed and Justin G. R. Delva, "An Efficient Intensity Correction Algorithm for High Definition Video Surveillance Applications" IEEE Transactions on Circuits and Systems for Video Technology, VOL. 21, NO. 11, NOVEMBER 2011.
4. Jong Sun Kim, Dong Hae Yeom, and Young Hoon Joo, "Fast and Robust Algorithm of Tracking Multiple Moving Objects for Intelligent Video Surveillance Systems" IEEE Transactions on Consumer Electronics, Vol. 57, No. 3, August 2011.
5. Hyenkyun Woo, Yoon Mo Jung, Jeong-Gyoo Kim, and Jin Keun Seo, "Environmentally Robust Motion Detection for Video Surveillance" IEEE Transactions on Image Processing, VOL. 19, NO. 11, NOVEMBER 2010.
6. Turgay Celik and Huseyin Kusetogullari, "Solar-Powered Automated Road Surveillance System for Speed Violation Detection" IEEE Transactions on Industrial Electronics, VOL. 57, NO. 9, SEPTEMBER 2010.
7. Weilun Lao, Jungong Han, and Peter H.N. de With, "Automatic Video-Based Human Motion Analyzer for Consumer Surveillance System" IEEE Transactions on Consumer Electronics, Vol. 55, No. 2, MAY 2009.
8. Mohammed Golam Sarwer, and Q. M. Jonathan Wu, "Efficient Two Step Edge based Partial Distortion Search for Fast Block Motion Estimation" IEEE Transactions on Consumer Electronics, Vol. 55, No. 4, NOVEMBER 2009.
9. Changryoul Choi and Jechang Jeong, "New Sorting-Based Partial Distortion Elimination Algorithm for Fast Optimal Motion Estimation" IEEE Transactions on Consumer Electronics, Vol. 55, No. 4, NOVEMBER 2009.
10. Xue Wang, Sheng Wang and Daowei Bi, "Distributed Visual-Target-Surveillance System in Wireless Sensor Networks" IEEE Transactions on Systems, Man and Cybernetics—Part B: Cybernetics, VOL. 39, NO. 5, OCTOBER 2009.
11. Jeonghun Kim, Jeongwoo Park, Kwangjae Lee, Kwang-Hyun Baek Suki Kim, "A Portable Surveillance Camera Architecture using One-bit Motion Detection" IEEE Transactions on Consumer Electronics, Vol. 53, No. 4, NOVEMBER 2007.
12. Rui Zhang, Sizhu Zhang, and Songyu Yu, "Moving Objects Detection Method Based on Brightness Distortion and Chromaticity Distortion" IEEE Transactions on Consumer Electronics, Vol. 53, No. 3, AUGUST 2007.
13. Mohamed F. Abdelkader, Rama Chellappa, Qinfen Zheng, "Integrated Motion Detection and Tracking for Visual Surveillance" Proceedings of the Fourth IEEE International Conference on Computer Vision Systems (ICVS 2006) 0-7695-2506-7/06 $20.00 © 2006 IEEE
14. TRDB_D5M Digital Camera Development Kit User Guide Document Version 1.2 AUG. 10, 2010 by www.terasic.com.
15. Altera DE2-70 Development & Education Board User Manual Version 1.08 Copyright© 2009 Terasic Technologies.
16. Ching-Kai Huang and Tsuhan Chen, "Motion Activated Video Surveillance Using TI DSP" DSPS FEST'99, Houston, Texas, August 4-6, 1999.
17. SagarBadnerkar and YashKshirsagar, "Real Time Motion Detected Video Storage Algorithm forOnline Video Recording"International Journal of Computer Applications (0975 – 8887), 2011.
18. Borko Furht, Ken Gustafson, Hesong Huang, and Oge Marques, "An Adaptive Three-Dimensional DCT CompressionBased on Motion Analysis" SAC 2003, Melbourne, Florida, USA, © 2003 ACM 1-58113-624-2/03/03...$5.00.
19. Ashwin S, Sathiya Sethuram A, Varun A and Vasanth P, "A J2ME-Based Wireless Automated VideoSurveillance System Using Motion Detection Method" Conference Proceedings RTCSP'09,©ELECTRON Department of ECE, Amrita VishwaVidyapeetham, Coimbatore.
20. Nan Lu, Jihong Wang, Q.H. Wu and Li Yang, "An Improved Motion Detection Method for Real-Time Surveillance"IAENG International Journal of Computer Science, 35:1, IJCSfl35fl1fl16, 19 Feb. 2008.
21. J. Ferdin Joe, "Effective Multiple Object Motion Detection Using Iterated Training Algorithm"CiiTInternational Journal of Digital Image Processing, Vol 3, No 15, October 2011.

**74.** **375-379**

**75.**

**Authors:** **Lameck Mugwagwa, Lungile Nyanga, Samson Mhlanga**

**Paper Title:** **Neural Network Breakout Prediction Model for Continuous Casting**

**Abstract:** Continuous casting is a process in which liquid steel is cooled in a bottomless mould into semi-finished steel products called billets, blooms or slabs depending on their cross section. In the process of continuous casting, two of the major problems encountered are cracks and breakouts. Breakouts usually result in temporary shutdown of the caster and huge amounts of downtime. Primary cracks which form before the solidifying strand exits the mould, are invariably linked to breakouts. Controlling primary cracks results in reduced chances of breakouts. This work

**75.** **380-383**

aims at designing a breakout prediction neural network model. In this paper, a two-layer feed forward backpropagation neural network model is developed for predicting the existence of primary cracks that might lead to a breakout. The network obtains its inputs in form of temperature values from rows of thermocouples attached to the mould tube. Based on solidification characteristics of steel, the neural network is supplied with various inputs (of temperature values) and targets and is trained to predict the crack status in the mould. Training is performed using the Levernberg-Marquardt (trainlm) training algorithm, and the log sigmoid transfer function was used for both the hidden and output layer. The output from this neural network was a logical 1 (if a primary crack is present) and a logical 0 (if no primary crack is present). The neural network model is validated by simulating in MatLab/Simulink.

**Keywords:** continuous casting, breakout prediction, neural network.

**References:**

1. Mazumdar, S. and Ray, S., (2001), Solidification control in continuous casting of steel, Sadhana, 26(1), pp 179 - 198.
2. Pan E, Ye L, Shi J and Chang T, (2009), On-Line Bleeds Detection in Continuous Casting Processes Using Engineering-Driven Rule-Based Algorithm, Journal of Manufacturing Science and Engineering, 131(6), pp 0610081-9
3. Thomas B.G, (2001), Modeling Of The Continuous Casting Of Steel Past, Present and Future, Brimacombe Lecture, 59th Electric Furnace Conf., Phoenix, AZ, Iron & Steel Soc., pp. 3-30
4. Raja B.V.R, (2009), Breakouts in Continuous Casting of Steel, Report, Steelworld, West Bengal, India
5. Sengupta J, Thomas B.G and Wells M.A, (2005), The Use of Water Cooling during the Continuous Casting of Steel and Aluminum Alloys, Metallurgical and Materials Transactions A, 36 (1), pp.187-204
6. Tirian G. O, Rusu-Anghel S, Pănoiu M and Bretotean C.P, (2011), Control of the Continuous Casting Process Using Neural Networks, Proceedings of the 13th WSEAS International Conference on Computers, pp 199 - 204
7. Cruz R.M.S, Peixoto H.M, and Magalhães R.M, (2011), Artificial Neural Networks and Efficient Optimization Techniques for Applications in Engineering, Artificial Neural Networks - Methodological Advances and Biomedical Applications, pp 45 – 68, InTech, Croatia
8. Suzuki S (Ed), (2011), Artificial Neural Networks - Industrial and Control Engineering Applications, Janeza Trdine 9, 51000 Rijeka, Croatia
9. Gershenson C, (2011), Artificial Neural Networks for Beginners, Report, Sussex, UK
10. Krenker A, Bester J, and Kos A, (2011), Introduction to the Artificial Neural Networks, - Artificial Neural Networks - Methodological Advances and Biomedical Applications, pp 3 – 18, InTech, Croatia
11. Mauder T, Sandera C, Stetina J, and Seda M, (2011), Optimization of the Quality of Continuously Cast Steel Slabs Using the Firefly Algorithm, Materials and technology 45 (4), pp 347–350

**76.**

| | |
|---|---|
| **Authors:** | M.Prakash, M.S. Jayakumar, S.Ajayan |
| **Paper Title:** | Control of Three-Phase PWM Rectifiers Using a Single DC Current Sensor |

**Abstract:** This paper presents a new current control method for three-phase pulse width modulation rectifiers with active power factor correction. Conventional three-phase PFC control requires sensing of at least two input phase currents. Since the input line should be isolated from the control circuitry, current transformer or Hall effects current sensors can be used for sensing the phase currents, these are bulkier and more expensive than resistive current sensors. That type of electromagnetic current sensors are also difficult to integrate with the rest of the control circuitry, it is a major barrier for low-cost integrated PFC control development. The new current control method solves these problems by using only the dc-rail current as the feedback signal .The dc-rail current can be easily sensed by a shunt resistor, and the output signal can be directly used by the control circuitry without isolation .The control method is developed based on a nonlinear average current control principle and avoids the steady-state phase error of conventional linear PI control.

**Keywords:** Current sensing, nonlinear current control, power factor correction, PWM rectifiers.

**References:**

1. M. Hengchun, D. Boroyevich, A. Ravindra, and F. C. Lee, "Analysis and design of high frequency three-phase boost rectifiers," in Proc. RecordsIEEE APEC 1996, 2011, vol. 2, pp. 538–544.
2. V. Blasko and V. Kaura, "A new mathematical model and control of a three-phase ac-dc voltage source converter," IEEE Trans.Power Electron., vol. 12, no. 1, pp. 116–123, Jan. 1997.
3. Qiao and K. M. Smedley, "A general three-phase PFC controller for rectifiers with a parallel-connected dual boost topology," IEEE Trans. Power Electron., vol. 17, no. 6, pp. 925–934, Nov. 2002.
4. T. C. Green and B. W. Williams, "Derivation of motor line-current waveforms from the dc-link current of an inverter," Proc. Inst. Elect. Eng., vol. 136, pt. B, no. 4, pp. 196–203, Jul. 1989.
5. F. Blaabjerg, J. K. Pedersen, T. Jaeger, and P. Thoegersen, "Single current sensor technique in the dc-link of three-phase PWM-VS inverters: A review and a novel solution," IEEE Trans. Ind. Appl., vol. 33, no. 5,pp. 1241–1253, Sep./Oct. 1997.
6. Andersen, T. Holmggard, J. G. Nielsen, and F. Blaabjerg, "Active threephase rectifier with only one current sensor in the dc-link," in Proc. IEEEInt. Conf. Power Electron. Drive Syst., 1999, pp. 69–74.
7. W. Lee, D. Hyun, and T. Lee, "A novel control method for three-phase PWM rectifiers using a single current sensor," IEEE Trans. Power Electron., vol. 15, no. 5, pp. 861–870, Sep. 2000.
8. W. Lee, T. Lee, andD.Hyun, "Comparison of single-sensor current control in the DC link for three-phase voltage-source PWM converters," IEEETrans. Ind. Electron., vol. 48, no. 3, pp. 491–505, Jun. 2001.

**384-388**

**77.**

| | |
|---|---|
| **Authors:** | **Vikas Gupta, Chanderkant Verma** |
| **Paper Title:** | **My Viterbi vs MATLAB Viterbi** |

**Abstract:** The importance of convolutional codes is well established. They are widely used to encode digital data before transmission through noisy or error-prone communication channels to reduce occurrence of errors. To decode these convolutional code viterbi decoder is best choice. In this paper selection of viterbi decoder over conventional decoder is justified and a viterbi decoder is developed in MATLAB. This decoder is named My Viterbi and compared and analysed with the MATLAB viterbi decoder.

**Keywords:** Convolutional Encoder, My Viterbi, Viterbi Encoder, Packet Loss.

**389-391**

**References:**

1. Kawokgy, M.; Salama, C.A.T. 2004. Low-power asynchronous Viterbi decoder for wireless applications. IEEE Int. Symp. Low power Electronics and Design (ISLPED '04), 9-11 Aug. 2004, pp. 286-289.
2. Kang, I. and Willson, A. N. Jr., 1998. Low-power Viterbi decoder for CDMA mobile terminals. IEEE Journal Solid-State Circuits, vol. 33 no.3, pp. 473 – 482.
3. C Arun and V Rajamani of Sri Venkateswara College of Engineering, Chennai, Design and VLSI architecture of non-polynomial based low probability of error Viterbi decoder, Journal of scientific and industrial research, vol. 68, February 2009, pages 97-106.
4. T Menakadevi and M Madheshwaran, Anna University, Coimbatore, Tamilnadu, design and implementation of high performance viterbi decoder for mobile communication data security, Computer intelligence in security for information systems, 2009, pages 69-76.
5. Hema.S, Suresh babu.V, Ramesh P, FPGA Implementation of Viterbi Decoder, Proceedings of the 6th WSEAS Int. Conf. on Electronics, Hardware, Wireless and Optical Communications, Corfu Island, Greece, 16-19 February 2007, pages 162-167.
6. K. S. Arunlal1 and Dr. S. A. Hariprasad," AN EFFICIENT VITERBI DECODER" International Journal of Advanced Information Technology (IJAIT) Vol. 2, No.1, February 2012
7. Ranpara, S.; Dong Sam Ha, 1999. A low-power Viterbi decoder design for wireless communications applications. IEEE Proceedings of the Twelfth Annual IEEE International Int. ASIC Conference 1999, Washington, DC, 15-18 Sept. 1999, pp. 377-381
8. Shannon, C.E., 1948. A Mathematical Theory of Communication. Bell SystemTechnical Journal, vol. 27, pp.379-423.
9. Sriram Swaminathan, Russel Tessier, Dennis Goeckel and Wayne Burleson, A Dynamically Reconfigurable Adaptive Viterbi Decoder, FPGA 02, Feb 2002, pages 24-26.
10. Y. Gang, A. T. Erdogan, and T. Arslan. An efficient pre-traceback architecture for the Viterbi decoder targeting wireless communication applications. IEEE Transactions on Circuits and Systems—Part I: Regular Papers, 53(9):1918–1927, Sept. 2006.
11. H.-L. Lou. Implementing the Viterbi algorithm. IEEE Signal Processing Magazine, 12(5):42–52, Sept. 1995.
12. P. Robertson and T. W¨orz. Bandwidth-efficient turbo trellis-coded modulation using punctured component codes. IEEE Journal on Selected Areas in Communications, 16(2):206–218, Feb. 1998.
13. Chip Fleming, "A Tutorial on Convolution Coding with Viterbi Decoding", Spectrum Applications, Nov 2006. Available :http://home.netcom.com/~chip.f/viterbi/tuto.

**78.**

**Authors:** **Islam M. Ezz El-Arab**

**Paper Title:** **Analytical methodology of Seismic Fragility Curve for Reinforcement Concrete Pier Bridges in Egypt**

**Abstract:** A seismic vulnerability evaluation method based on structural analysis for RC bridges with simple pier bents is proposed in the paper. The proposed method is based on the hypothesis of the flexible pier-rigid deck behavior of the structure subjected to transversal seismic loads. A flexible pier-rigid deck simplified model was therefore developed. This model has been chosen after verifying the correlation between the responses of the proposed model and of the real structure which was presented by Egyptian General Authority of Roads and Bridges. The damage produced by the earthquake load is centered on the piers of the bridge, while the dynamic study of the deck can be performed after the structural analysis of the piers in an uncoupled way. The maximum damage of the piers under seismic actions is the principal aim of the proposed structural evaluation methodology. A damage index is used for this purpose, which describes the state of the material at each point of the structure. The study success to present the fragility curves which show that the peak ground acceleration for 50% probability of exceeding slight, moderate and sever damage ranges from approximately 0.15 to 0.4 g for this typical and repeated RC bridge in Egypt.

**Keywords:** Analytical methodology, Fragility curve, Egypt, RC bridges, Seismic analysis.

**References:**

1. S. A. Kurian, S. K. Deb, and A. Dutta, "Seismic vulnerability assessment of a railway over bridge using fragility curves," Proceeding of 4th International Conference on Earthquake Engineering, Taipei, Taiwan, 2006.
2. M. L. Seongkwan, J. K. Tschangho, and L. K. Seung," Development of fragility curves for bridges in Korea" KSCE Journal Civil Engineering 2007, 3(11),pp165-174.
3. J. E. Padgett, and R. DesRoches, "Methodology for the development of analytical curves for retrofitted bridges," Earthquake Engineering Structural Journal 2008, 37, pp.1157-1174.
4. I. F. Moschonas, A. J. Kappos, P. Panetsos, V. Papadopoulos , T. Makarios , and P. Thanopoulos, " Seismic fragility curves for greek bridges: methodology and case studies," Bull. Earthquake Engineering 2009, 7, pp.439-468.
5. Eunsoo Choi, Reginald DesRoches, and Bryant Nielson, "Seismic fragility of typical bridges in moderate seismic zones," Engineering Structural journal 2004, 26, pp.187-199.
6. Qi'ang Wang, Ziyan Wu, and Shukui Liu, "Seismic fragility analysis of highway bridges considering multi-dimensional performance limit state," Earthquake Engineering and Engineering Vibration 2012; 11(2):185-193, (DOI: 10.1007/s11803-012-0109-1).
7. Nielson, and R. DesRoches , "Analytical seismic fragility curves for typical bridges in the central and south eastern United States," Earthquake Spectra Journal 2007, 3(23),pp.615-633.
8. Y. J. Park, and A. H. S. Ang, "Seismic damage analysis of reinforced concrete buildings," Journal of Structural Engineering, (ASCE), 1985, 111(4), pp.740-757.
9. F. A. Charney," NONLIN – Nonlinear dynamic time history analysis of single degree of freedom systems," Federal Emergency Management Agency Training Center, Emmitsburg, Maryland, Advanced Structural Concepts, Golden, CO and Schnabel Engineering, Denver, Co, 1998.
10. J. B. Mander, and N .Basoz, "Seismic fragility curves theory for highway bridges," Proceeding of 5th U.S. Conference of Lifeline Earthquake Engineering, ASCE, 1999, pp. 31-40.
11. A .Ghobarah, N. M. Aly, and M. El-Attar, "Performance level criteria and evaluation," Proceeding of the International Workshop on Seismic Design Methodologies for the Next Generation of Codes, Balkema, Rotterdam, 1997, pp. 207-215.
12. H. Hwang, B. L. Jing, and Y.Chiu," Seismic Fragility Analysis of Highway Bridges," Ref. No. MAEC RR-4, Center for Earthquake Research Information, Memphis, 2001.
13. ECP-201 Permanent Committee, ECP-201:1993, ECP-201:2003, and ECP-201:2008. Egyptian Code for calculating loads and forces in structural work and masonry. HBRC, Giza, 1993, 2003, and 2008(Draft), respectively.
14. V. Prakash, G.H. Powell, S.D. Campbel, and F.C. Filippou, "DRAIN-2DX user guide," Department of Civil Engineering, University of California, Berkeley, 1992.
15. E.C. Bentz, and M.P. Collins," Response-2000. Software Program for Load-Deformation Response of Reinforced Concrete Section," 2000 (http:www.ecf.utoronto.ca\ bentz\inter4\inter4.shtml).
16. S. Oller, A. H. Barbat, E. Onate, and A. Hanganu, "A damage model for the seismic analysis of buildings structures," 10th World Conference on Earthquake Engineering, 1992, pp. 2593-2598.
17. J. Lysmer, and F. E. Richart," Dynamic response of footings to vertical loading," Journal of the soil Mechanics and foundations Division, ASCE, 1966, 92 SMI.

| | | | |
|---|---|---|---|
| 79. | **Authors:** | Shujaat Hussain Buch, Javed Ahmad Bhat | |
| | **Paper Title:** | In-Plane Behavior of Masonry Infilled Reinforced Concrete Frames with Wooden Choh-kat Openings | |
| | **Abstract:** Determination of the behavior of infilled framed structures with openings has been a matter of study lately. However, analysis of infilled structures have of yet ignored the vital effect of opening frameworks, which in Kashmir valley is a wooden assembly called 'Choh-kats'. This study focuses on study of the behavior of the infilled frames with wooden 'Choh-kats' under in-plane lateral loads and is based on determination of initial lateral stiffness of infilled frame with wooden choh-kat under control parameters of opening location, opening area, opening aspect ratio and model of choh-kat framework. The finite elements are used to illustrate the behavior, and linear stiffness of the frames is determined at 10% lateral strength of a fully infilled frame. This work illustrates that the in-plane lateral stiffness of the frame increases with the addition of choh-kat and also gives a better understanding of illustrating infill with choh-kat openings as multiple compressive struts.<br><br>**Keywords:** Brick infills,finite element method, lateral stiffness, wooden choh-kat.<br><br>**References:**<br>1. M. Holmes. "Steel frames with brickwork and concrete infilling". Proc. of the institution of civil engineers, 1961, Vol.19, 473-478.<br>2. R. Zarnic and M.Tomazevic. "The behavior of Masonry Infilled reinforced concrete frames subjected to cyclic lateral loading". Proc., 8th World Conf. on Earthquake Engineering, 1984, San Francisco.<br>3. S.V. Polyakov. Masonry in Framed Buildings (An investigation into the strength and stiffness of masonry infill).Gosudarstvennoeizdatel'stvoLiteraturypostroitel'stvu I arkhitekture, 1956, Moscow.(English translation by G.L. Cairns, National Lending Library for science and Technology, Boston, Yorkshire, England, 1963).<br>4. Bryan S. Smith. "Lateral Stiffness of Infilled Frames".Proceedings of the American Society of Civil Engineering, Journal of Structural Division, 1962, Vol. 88, No. ST6, 183-199.<br>5. R. Angel, D.P. Abrams, D. Shapiro, J.Uzarski and M.Webster."Behavior of Reinforced Concrete frames with masonry infills". Structural research series report, Dept. of Civil Engineering., Univ. of Illinios, 1994, 589.<br>6. B Stafford Smith and JR Riddington. "The composite Behavior of Elastic wall-beam Systems".ICE Proceedings, June 1977, Vol 63, No. 2, 377-391.Thomas Paulayand M.J.N. Priestley.Seismic Design of Reinforced Concrete and Masonry Buildings, New York, John Wiley & Sons, March 1992, Masonry structures.<br>7. P. Gergely, R. N. White and K. M. Mosalam."Evaluation and Modeling of Infilled Frames". Proceedings of the NCEER Workshop on Seismic Response of of Masonry Infills,D.P. Abrams editor, National center of Earthquake Engineering, 1994.<br>8. R.J. Mainstone. "On the stiffness and strengths of infilled frames", Proceedings Institution of Civil Engineers, London, UK, 1971, Supplement IV, Paper 7360S, 57-90.<br>9. R.E. Klinger and V.V. Bertero."Earthquake resistance of infilled frames".Journal of Structure Engineering, 1978, ASCE, Vol. 104, No.6.<br>10. D.V. Mallick and R.P. Garg."Effect of openings on the lateral stiffness on infilled Frames".Proceedings of the institution of Civil Engineers, 1971, Structures and Buildings, Vol.49, 193-209.<br>11. A.J. Durrani and Y.H.Luo."Seismic Retrofit of Flat-Slab Buildings with MasonaryInfills", Proceedings from the NCEER workshop on seismic response of Masonry Infills, 1994, technical report NCEER-94-0004, DP Abrams (Editor), 128.<br>12. Ghassan Al-Chaar, Gregory E. Lamb, and Daniel P. Abrams."Effect of openings on Structural Performance of Unreinforced Masonry Infilled Frames".Special publication, Feb 2003, Vol. 211, 247-262.<br>13. Ghassan Al-Chaar. Non-Ductile Behavior of Reinforced Concrete Frames with MI panels subjected to in-plane loading.Chicago, Illinios: PHD Thesis, 1998.<br>14. V. Thiruvengadam. "On the natural frequencies of infilled frames".Earthquake Engg. Structural Dyn., 1985, Vol.13, 401-419.<br>15. GoutamMondal and Sudhir K.Jain. "Lateral stiffness of Masonry Infilled Reinforced Concrete (RC) Frames with Central Opening". Earthquake Spectra, August 2008, Vol. 24, No. 3;701–723.<br>16. U. B. Choubey and S.N. Sinha, "Cyclic response of infilled frames". J. Structural Engineering SERC Chennai, 1994, Vol 21, 203-211.<br>17. P.G. Asteris. "Lateral Stiffness of brick masonry infilled plane frames". L. Structural Engineering, 2003, Vol. 129, No.8, 1071-1079.<br>18. FEMA 356. Pre-standard and Commentary for the seismic rehabilitation of buildings. USA, FEMA, November 2000.<br>19. D. V. Mallick, and R. T. Severn."The Behavior of Infilled Frames under Static Loading".Proceedings of the Institution of Civil Engineers, December 1967, Vol. 38, No. 4, 639-656.<br>20. Mohammad N. Mahmood & Saddam, M. Ahmed. "Effect of Infilled Panel on the Nonlinear Dynamic Response of Reinforced Concrete Plane Frames".Al-Rafidien Engineering, June 2009, vol.17, No. 3, 14-29.<br>21. Hemant B. Kaushik, Durgesh C. Rai, and Sudhir K.Jain."Effectiveness of some strengthening options for Masonry Infilled RC Frames with open First Story". Journal of Structural Engineering, August 2009, Vol. 135, No.8, 925-937. | **400-405** |
| **80.** | **Authors:** | **Sharana Reddy, B.Basavaraja** | |
| | **Paper Title:** | **Simulation and Analysis of Common Mode Voltage in 2-level and Multilevel Inverter Fed Induction Motor Drive with Long Cable** | |
| | **Abstract:** The development of high frequency, Pulse Width Modulation (PWM), based Adjustable Speed Drives (ASDs) has increased the energy efficiency, performance and controllability in the induction motor applications. But high speed switching device such as Insulated Gate Bipolar Transistors (IGBTs) used in ASDs having rise time of 0.1µSec.,that generate fast switching transients (high dv/dt) about 6000V/µSec for 400V system and common mode voltage. This common mode voltage causes unwanted shaft voltage and resulting bearing currents. Parasitic capacitive couplings create a path to discharge current in the rotor and bearings results in premature bearing failure. In many new and retrofit industrial applications the PWM inverters and motors must be at separate locations thus requiring long motor cable, which contributes over voltage at the motor terminal due to voltage reflection phenomenon. In 480V application, inverter output common mode dv/dt can be as high as 7000V/µsec. and at motor terminals in the presence of long cable (20ft) can reach11000V/µSec. Higher common mode dv/dt (nearly double) at the motor terminals results in higher induced shaft voltage and bearing currents. Multilevel inverter generates smaller Common-Mode (CM) voltage, thus reducing the stress in the motor bearings. In addition, using sophisticated modulation methods, common mode voltage can be eliminated.<br><br>**Keywords:** Common mode voltage, induction motor drive, multilevel inverter, voltage reflection.<br><br>**References:** | **406-410** |

1. Alger P., Samson H., "Shaft Currents in Electric Machines" A.I.R.E. Conference .,Feb. 1924
2. Annette Muetze, Andreas Binder, "Techniques for Measurement of Parameters Related to Inverter Induced Bearing Currents",IEEE transactions on industry applications,vol.43,No5,September/October 2007.
3. J. Erdman, R. J. Kerkman, D. Schlegel, and G. Skibinski, "Effect of PWM inverters on AC motor bearing currents and shaft voltages," in IEEE, APEC-95,10th An Applied Power Electronics Conference and Exposition, vol. 1, Mar. 5-9, 1995, pp. 24 - 33.
4. Doyle Busse, Jay Erdman, Russel J. Kerkman, Dave Schlegel, and Gary Skibinski "System Electrical Parameters and Their Effects on Bearing Currents", IEEE, transactions ,0-7803-3044-719, 1996.
5. D. Busse, J. M. Erdman, R. J. Kerkman, D. W. Schlegel, and G. L. Skibinski, "Bearing currents and their relationship to PWM drives," in Conf. Record IEEE ,IECON '95, Nov. 1995.
6. A. Muetze, A. Binder, "Calculation of motor capacitances for prediction of discharge bearing currents in machines of inverter-based drive systems," Proceedings of the 5th International Electric Machines and Drives Conference (IEMDC), San Antonio, TX, May 15- 18, 2005, pp. 264-270.
7. José Rodríguez, Jih-Sheng Lai, Fang Zheng Peng "Multilevel Inverters: A Survey of Topologies, Controls, and Applications,". IEEE transactions on industrial electronics, vol. 49, no. 4,PP 724-734,August 2002.
8. A.Ramachandran, M.Channa Reddy, Ranjan Moodithaya, "Minimization and identification of conducted emission bearing current in variable speed induction motor drives using PWM inverter," Sadhana, Vol.33,Part5,October 2008.
9. B.Basavaraja and D.V.S.S.Siva Sarma "Modeling, Simulation and Experimental Analysis of Transient Terminal Overvoltage in PWM-Inverter fed Induction Motors," Proceedings of International Conference on PES General Meeting held in 333 S. Franklin Street Tampa, Florida,3602 USA, 2007.
10. A. F. Moreira T. A. Lipo G. Venkataramanan and S. Bernet "High Frequency Modeling for Cable and Induction Motor Over-voltage Studies in Long Cable Drives." IEEE Industrial Application Society 36th Annual Meeting Chicago, Illinois, USA, September 30 − October 5, pp 1-8, 2001.


**81.**


**Authors:** **Saurabh Karsoliya**


**Paper Title:** **Importance of Shape and Weight towards the Recital of Simple Adaptive Median Filter in Plummeting Impulse Noise Level from Digital Images**


**Abstract:** Noise is impulse on images due to several aspects like malfunctioning in pixels due to camera sensor, transmission of images in noisy channel, hardware problem etc. This study reviews various techniques for removal of impulse noise. To reduce the impulse noise level in Digital images various filters were introduced amongst which Simple Adaptive Median (SAM) is one of the method which uses Hybrid Technique of Adaptive Median Filter And Switching Median Filter. SAM filter which uses Square Filter as its basis has an ability to change the size of the filter spatially based on the approximated local noise level. Based on Local Noise Level on digital images size of filter is changed i.e. Square Filter Technique is used basically in SAM. SAM was compared with three derivatives namely Weighted SAM (WSAM), Circular SAM (CSAM) and Weighted CSAM (WCSAM) and images were restored maximum of Impulse Noise, but as Circular Filter has complicated implementation that resulted in increase of execution time. This study investigates the effect of shape and weight on digital images using SAM filter and restore all the digital images impulse with noise with reducing execution time for all three derivatives



**Keywords:** Impulse, Noise Level, Digital Image, SAM


**References:**


1. Hulyu Zhou, Jiahua Wu, Jianguo Zhang, Digital Image Processing – Part I Ventus Publishing ApS, (2010), 9-11
2. Asma Yasrib, Mohd Adam Suhaimi, Image Processing in Medical Applications, Journal of Information Technology Impact, (2003), Vol. 3, No. 2, 63-68.
3. Gary l. Hagnauer, James D. Kleinmeyer, John J. Wixted, John H. Grubbs, Applications of digital image processing In testing and evaluation of composite materials (1990), 1-12.
4. L. Yaroslavsky, Digital Holography and Digital Image processing: Principles, Methods, Algorithms, Kluwer Scientific Publishers, (2004), 1-7.
5. Yong Rui and Thomas S. Huang, Image Retrieval: Current Techniques, Promising Directions, and Open Issues, Journal of Visual Communication and Image Representation (1999) 10, 39–62.
6. S. Perreault, P. Hébert, "Median Filtering in Constant Time", IEEE Transactions on Image Processing, Vol. 16, No. 9, Sep 2007, pp 2389-2394.
7. S. J. Ko, and Y. H. Lee, "Center weighted median filters and their applications to image enhancement", IEEE Transactions on Circuits and Systems, vol. 38, no. 9, 1991, pp 984-993.
8. C. S. Panda, S. Patnaik, "Filtering Corrupted Image and Edge Detection in Restored Grayscale Image Using Derivative Filters", International Journal of Image Processing, (IJIP) Volume (3): Issue (3), pp 105-119.
9. T. Acharya, A. K. Ray, "Image processing: principles and applications", John Wiley and Sons, 2005 pp 116-127.
10. H. Ibrahim, N. S. P. Kong, and T. F. Ng, "Simple Adaptive Median Filter for the removal of impulse noise from highly corrupted images", IEEE Transactions on Consumer Electronics, Vol. 54, No. 4, 2008, pp1920-1927.



**411-413**