Volume 3 Issue 6, August 2014

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-3 Issue-6, August 2014, ISSN: 2249-8958 (Online) Published By: Blue Eyes Intelligence Engineering & Sciences Publication Pvt. Ltd.	Page No.

1.

Authors: S. Harisingh Naik, K. Rama Rao, M. V. Ramana Murthy

Paper Title: The Effect of Hall Current on Unsteady MHD Free Convective Couette Flow of a Bingham Fluid with Thermal Radiation

Abstract: The objective of this study to find the numerical solution of unsteady magneto hydrodynamic flow of an electrically conducting viscous incompressible non – Newtonian Bingham fluid bounded by two parallel non – conducting porous plates is studied with thermal radiation considering the Hall Effect. An external uniform magnetic field is applied perpendicular to the plates and the fluid motion is subjected to a uniform suction and injection. The lower plate is stationary and the upper plate moves with a constant velocity and the two plates are kept at different but constant temperatures. The fluid is considered to be a gray, absorbing emitting but non – scattering medium and the Roseland approximation is used to describe the radioactive heat flux in the energy equation. Numerical solutions are obtained for the governing momentum and energy equations taking the Joule and viscous dissipations into consideration. The dimensionless governing coupled, non – linear boundary layer partial differential equations are solved by an efficient, accurate, and extensively validated and unconditionally stable finite difference scheme of the Crank – Nicolson method. The effects of the Hall term, the parameter describing the non – Newtonian behavior, thermal radiation parameter and the velocity of suction and injection on both the velocity and temperature distributions are studied through graphs and tabular form.

Keywords: Couette flow, Thermal radiation, Bingham fluid, Hall Effect and Finite difference method.

References:

1. Jana, R. N. and Datta, N., (1977). Couette flow and heat transfer in a rotating system, Acta Mechanical, Vol. 26, pp. 301 – 306.
2. Singh, A. K., Sacheti, N. C. and Chandran, P., (1994). Transient Effects in Magneto hydrodynamic Couette flow with rotation: Accelerated Motion, International Journal of Engineering Sciences, Vol. 32, pp. 133 – 139.
3. Kearsley, A. J., (1994). A steady state model of Couette flow with viscous heating, International Journal of Engineering Sciences, Vol. 32, pp. 179 – 186.
4. Kumar, J., Lakshmana Rao, C. and Massoudi, M., (2003). Couette flow of granular materials, International Journal of Non – Linear Mechanics, Vol. 38, pp. 11 – 20.
5. Choi, C. K., Chung, T. J. and Kim, M. C., (2004). Buoyancy effects in plane Couette flow heated uniformly from below with constant heat flux, International Journal of Heat and Mass Transfer, Vol. 47, pp. 2629 – 2636.
6. Hashemabadi, S. H., Etemad, S. Gh. and Thibault, J., (2004). Forced convection heat transfer of couette – poiseuilli flow of nonlinear viscoelastic fluids between parallel plates, International Journal of Heat and Mass Transfer, Vol. 47, pp. 3985 – 3991.
7. Attia, H. A., (2008). The effect of variable properties on the unsteady Couette flow with heat transfer considering the Hall Effect, Communications in Nonlinear Science and Numerical Simulation, Vol. 13, pp. 1596 – 1604.
8. Beg, O. A., Takhar, H. S., Zueco, J., Sajid, A. and Bhargava, R., (2008). Transient Couette Flow in a rotating non – Darcian porous medium parallel plate configuration: Network Simulation Method Solutions, Acta Mechanica, Vol. 200, pp. 129 – 144.
9. Schlichting, H. and Gersten, K., (2001). Boundary-Layer Theory, 8th Revised and Enlarged Edition, Springer.
10. Aung, W., (1972). Fully developed laminar free convection between vertical plates heated asymmetrically, International Journal of Heat and Mass Transfer, Vol. 15, No. 8, pp. 1577 – 1580.
11. Joshi, H. M., (1988). Transient effects in natural convection cooling of vertical parallel plates, International Communications in Heat and Mass Transfer, Vol. 15, pp. 227 – 238.
12. Barletta, A., (1999). Heat transfer by fully developed flow and viscous heating in a vertical channel with prescribed wall heat fluxes, International Journal of Heat and Mass Transfer, Vol. 42, pp. 3873 – 3885.
13. Jha, B. K., Singh, A. K. and Takhar, H. S., (2003). Transient free convection flow in a vertical channel due to symmetric heating, International Journal of Applied Mechanics and Engineering, Vol. 8, No. 3, pp. 497 – 502.
14. Campo, A., Manca, O. and Morrone, B., (2006). Numerical investigation of the natural convection flows for low – Prandtl fluids in vertical parallel – plates channels, ASME Journal of Applied Mechanics, Vol. 73, pp. 96 – 107.
15. Singh, A. K. and Paul, T., (2006). Transient natural convection between two vertical walls heated/cooled asymmetrically, International Journal of Applied Mechanics and Engineering, Vol. 11, No. 1, pp. 143 – 154.
16. Narahari, M., (2009). Oscillatory plate temperature effects of free convection flow of dissipative fluid between long vertical parallel plates, International Journal of Applied Mathematics and Mechanics, Vol. 5, No. 3, pp. 30 – 46.
17. Singh, A. K., (1988). Natural convection in unsteady Couette motion, Defense Science Journal, Vol. 38, No. 1, pp. 35 – 41.
18. Jha, B. K., (2001). Natural convection in unsteady MHD Couette flow, Heat and Mass Transfer, Vol. 37, pp. 329 – 331.
19. Jain, N. C. and Gupta, P., (2006). Three dimensional free convection Couette flow with transpiration cooling, Journal of Zhejiang University Science A, Vol. 7, No. 3, pp. 340 – 346.
20. Barletta, A. and Magyari, E., (2008). Buoyant Couette – Bingham flow between vertical parallel plates, International Journal of Thermal sciences, Vol. 47, pp. 811 – 819.
21. Barletta, A., Lazzari, S. and Magyari, E., (2008). Buoyant Poiseuille – Couette flow with viscous dissipation in a vertical channel, Zeitschriftfür angewandte Mathematic und Physik ZAMP, Vol. 59, pp. 1039 – 1056.
22. Vradis, G. C., Dougher, J. and Kumar, S., (1993). Entrance pipe flow and heat transfer for a Bingham plastic, Int. J. Heat Mass transfer, Vol. 96, pp. 543–550.
23. Bird,R.B., Dai,G.C. and Yarusso,B.J., (1983). The rheology and flow of visco – plastic materials, Rev. Chem. Engg.,Vol. 1, pp. 36–69.
24. Walton, I. C. and Bittleston, S.H., (1991). The axial flow of a Bingham plastic in a narrow eccentric annulus, J. Fluid Mech., Vol. 222, pp. 39–60.
25. Patel, N. and Ingham, D. B., (1994). Mixed convection flow of a Bingham plastic in an eccentric annulus, Int. J. Heat Flow, Vol. 15, No. 2,pp. 132–141.
26. Min, T., Yoo, J. Y. and Choi, H., (1997). Laminar convective heat transfer of a Bingham plastic in a circular pipe. II. Numerical approach – hydro dynamically developing flow and simultaneously developing flow, Int. J. Heat Mass Transfer, Vol. 40, No. 15, pp. 3689–3701.
27. Petrov, A. G., (2000). The development of the flow of viscous and visco – plastic media between two parallel plates, J. Appl. Math. Mech., Vol. 64, No. 1,pp. 123–132.
28. Seddeek, M. A., (2002). Effects of radiation and variable viscosity on a MHD free convection flow past a semi – infinite flat plate with an aligned magnetic field in the case of unsteady flow, Int. J. Heat and Mass Transfer, Vol. 45, pp. 931– 945.
29. Viskanta, R. and Grosh, R. J., (1962). Boundary layer in thermal radiation absorbing and emitting media, Int. J. Heat and Mass Transfer, Vol. 5, pp. 795–806.
30. Cess, R. D., (1966). The interaction of thermal radiation with free convection heat transfer, Int. J. Heat and Mass Transfer, Vol. 9, pp. 1269–1277.

1-16

31. Sparrow, E. M. and Cess, R. D., (1966). Radiation heat transfer, Belmont, Calif.: Brooks/Cole.
32. Howell, J. R., Siegel, R. and Menguc¸ M. P., (2010).Thermal radiation heat transfer, 5th ed. FL: CRC Press.
33. Takhar, H. S., Gorla, R. S. R. and Soundalgekar, V. M., (1966). Short communication radiation effects on MHD free convection flow of a gas past a semi – infinite vertical plate, Int. J. Numer. Methods Heat Fluid Flow,Vol. 6, pp. 77–83.
34. Raptis, A. and Massalas, C. V.,(1998). Magnetohydrodynamic flow past a plate by the presence of radiation, Heat Mass Transfer,Vol. 34, pp. 107– 109.
35. Chamkha, A. J., (2000). Thermal radiation and buoyancy effects on hydromagnetic flow over an accelerating permeable surface with heat source or sink,Int. J. Engg. Sci.,Vol. 38, pp. 1699– 1712.
36. Cookey, C. I., Ogulu, A. and Omubo – Pepple, V. B., (2003). Influence of viscous dissipation and radiation on unsteady MHD free convection flow past an infinite heated vertical plate in a porous medium with time – dependent suction,Int. J. Heat and Mass Transfer,Vol. 46, pp. 2305– 2311.
37. Ogulu, A. and Makinde, O. D., (2008). Unsteady hydromagnetic free convection flow of a dissipative and radiating fluid past a vertical plate with constant heat flux, Chem. Engg. Commun.,Vol. 196, pp. 454– 462.
38. Mahmoud, M. A. A., (2009). Thermal radiation effect on unsteady MHD free convection flow past a vertical plate with temperature dependent viscosity, Can. J. Chem. Engg., Vol. 87, pp. 47 – 52.
39. Pop, I. and Watanabe, T., (1994). Hall effect on magnetohydrodynamic free convection about a semi – infinite vertical flat plate, Int. J. Engg. Sci.,Vol. 32, pp. 1903– 1911.
40. Abo – Eldahab, E. M. and Elbarbary, E. M. E., (2001). Hall current effect on magnetohydrodynamic freeconvection flow past a semi – infinite vertical plate with mass transfer, Int. J. Engg. Sci.,Vol. 39, pp. 1641– 1652.
41. Takhar, H. S., Roy, S. and Nath, G., (2003). Unsteady free convection flow over an infinite vertical porous plate due to the combined effects of thermal and mass diffusion, magnetic field and Hall currents,Heat Mass Transfer,Vol. 39, pp. 825– 834.
42. Saha, L. K., Siddiqa, S. and Hossain, M. A., (2011). Effect of Hall current on MHD natural convection flow from vertical permeable flat plate with uniform surface heat flux, Appl. Math. Mech. Engl. Ed., Vol. 32, No. 9, pp. 1127– 1146.
43. Satya Narayana, P. V., Venkateswarlu, B. and Venkataramana, S., (2013). Effects of Hall current and radiation absorption on MHD micropolar fluid in a rotating system,Ain Shams Engg. J, http:// dx.doi.org/10.1016/j.asej.2013.02.002.
44. Seth, G. S., Mahato, G. K. and Sarkar, S., (2013). Effects of Hall current and rotation on MHD natural convection flow past an impulsively moving vertical plate with ramped temperature in the presence of thermal diffusion with heat absorption, Int. J. Energy Tech.,Vol. 5, No. 16, pp. 1–12.
45. Schlichting, H., (1986).Boundary Layer Theory, McGraw – Hill, New York, 1986.
46. Sutton, G. W. and Sherman, A., (1965).Engineering Magnetohydrodynamics, McGraw – Hill, New York.
47. Attia, H. A., (1998). Hall current effects on the velocity and temperature fields of an unsteady Hartmann flow, Can. J. Phys., Vol. 76, No. 9, pp. 739 – 746.
48. Brewster, M. Q., (1992). Thermal radiative transfer & properties, John Wiley & Sons.
49. Antia, M., (1991). Numerical Methods for Scientists and Engineers, Tata McGraw – Hill, New Delhi.
50. Attia, H. A., (1998). Hall current effects on the velocity and temperature fields of an unsteady Hartmann flow, Can. J. Phys., Vol. 76, No. 9, pp. 739–746.

2.

Authors: **C. K. Sridhar, S. B. Vanakudre**

Paper Title: **Strength Efficiency Factor for Nano Silica at Different Age**

Abstract: Concrete is being widely used as a construction material, hence it is necessary to improve its properties. These days supplementary cementecious materials are used for enhancement of concrete properties. Use of Nano materials is gaining importance due to its vital characteristics, these materials help in developing high performance concrete [5]. This study aims at determining efficiency factor 'K' for Nano silica. Efficiency factor is the part of supplementary cementecious material in the Nano silica concrete which can be considered as equivalent to Portland cement[3]. The efficiency factor helps in economic mix design of Nano silica concrete. This paper presents the results of an experimental study to evaluate strength of hardened concrete and strength efficiency factor 'K' for Nano silica by replacing the cement by various percentages of Nano silica (0.25% to 2.5% by weight of cement) for M20 ,M40 concrete at 7 & 28 days of curing. Modified Bolomey equation[3] is used for determination of strength efficiency factor. From this study it can be concluded that the optimum replacement of Nano Silica is 2% and 1.5% respectively for M20&M40 concrete. The mode value of 'K' is 6.0, 6.64 for 7 & 28 days respectively of M20 concrete,similarly 5.83, 5.94 for 7 &28 days respectively of M40 concrete.

Keywords: Nano Silica, Strength efficiency factor, Nano Silica concrete, Supplimentery Cementeticious Material (SCM)

17-20

References:

1. Hongxia Yang, " Strength and shrinkage properties of Nano Silica powder concrete". 2012 . 2nd International Conference on Electronic , Mechanical Engg &Information technology pp 794-797.
2. R Malathy & K Subramanian, "Efficiency factor for Silica fume and Matakaoline at various replacement levels". 2007, 32nd conference on our world in concrete and structures at Singapore.
3. K Suvarna Lata , M V Seshagiri Rao , Srinivasa Reddy V, "estimation of GGBS & HVFA strength efficiencies in concrete with age". 2012 IJEAT journal pp 221-225.
4. Taoji ,"Preliminary study of water permeability and micro structure of concrete incorporating Nano silica". 2005 cement and concrete research 35, pp1943-1947.
5. YE Qing, Zhang Zenan, et al, " A comparative study on the pozzolanic activity between Nano Sio2 and Silica fume". 2006 Journal of Wuhan university of Technology, pp 153-157.
6. Mostafa Khanzadi, Mohsen Tadayon et al, "Influence of Nano Silica Particles on Mechanical Properties & Permeability of concrete".2010, Second international conference on sustainable construction materials & Technology Italy ,pp 1-7.
7. Gengying li ," Properties of high volume flyash concrete incorporating Nano Sio2". 2004, cement and concrete research pp 1043-1049.
8. Byung Wan Jo & Chang Hyun Kim, " Characteristics of cement mortar with Nano silica particles". Construction and building materials 21, pp 1351-1355.
9. Hui Li ,Mao-hua zang , Jin-ping Ou, " Flexural fatigue performance of concrete containing nano particles for pavement".2007, International journal of fatigue29 pp 1292-1301.
10. Concrete Mix Proportioning- Guidelines IS 10262:2009.

3.

Authors: **L. Prasanna Kumar**

Paper Title: **Effective Bin Rank for Scaling Dynamic Authority Based Search with Materialized Sub Graphs**

Abstract: Dynamic authority-based keyword search algorithms, such as Object Rank and personalized Page Rank, leverage semantic link information to provide high quality, high recall search in databases, and the Web.

21-23

Conceptually, these algorithms require a query time Page Rank-style iterative computation over the full graph. In this paper we introduce Bin Rank system which approximates Object Rank results by utilizing a hybrid approach inspired by materialized views in traditional query processing.

Keywords: World Wide Web, Object Rank, sub graphs, Bin Rank.

References:

1. S.brin, l.page,"the anatomy of a large-scale hypertextual web search engine",computer networks,vol.30, nos.1-7, pp. 107-117, 1998.
2. T.h.haveliwala,"topic-sensitivepagerank,"proc.int'l world wide web conf.(www),2002.
3. G.jeh, j.widom,"scaling personalized web search,"proc.int'l world wide web conf.(www),2003.
4. D.fogaras, b.racz,k.csalogany,and .sarlos,"towards scaling fully personalized pagerank: algorithms, lower bounds,and experiment", internet Math.,vol.2,no.3,pp.333-358,2005.
5. K.avrachenkov,n.litvak,d.nemirovsky, n.osipova,"monte carlo methods in pagerank computation:when one iteration is sufficient", siam J.numerical analysis,vol.45,no.2, pp.890-904,2007.
6. A.balmin,v.hristidis, y.papakonstantinou,"objectrank:authority-based keyboard search in databases", proc.int'l conf.very large data bases (vldb),2004.
7. Znie , y. zhang , j .r . wen , w. y. ma , " object - level ranking:bringing order to web objects", proc.int'l world wide web conf.(www),pp.567-574,2005.
8. S.chakrabarti,"dynamic personalized pagerank in entityrelations graphs", proc.int'l world wide web conf.(www),2007.
9. H.hwang,a.balmin,h.pirahesh, b.reinwald,"information discovery in loosely integrated data,"proc.acm sigmod, 2007.
10. V.hristidis,h.hwang, y.papakonstantinou,"authority-based keyword search in databases,"acm trans. database systems,vol.33, no.1, pp. 1-40,2008.
11. M.r.garey, d.s. johnson,"a 71/60 theoremfor bin packing,"j.complexity,vol.1,pp.65-106, 1985.
12. K.s.beyer,p.j.haas,b.reinwald,y.sismanis, r.gemulla,"on synopses for distinct-value estimation under multiset operations,"proc.acm sigmod, pp .199-210, 2007.
13. J.t.bradley, d.v.de jager,w.j.knottenbelt, a.trifunovic, "hypergraph partitioning for faster parallel pagerank computation , " EPEW,pp. 155-171, 2005.

4.

Authors: **Sayed Mojtaba Tabibian, Maryam Khanian Najafabadi**

Paper Title: **Review on Various Kinds of Die Less Forming Methods**

Abstract: With the increasing demands for low-volume and customer-made products, a die-less forming method, also called Incremental Sheet Metal Forming (ISMF), has become one of the leading research and development topics in the industry. Incremental Sheet Metal Forming (ISMF) is a recently invented die-less forming method that is quite different to the traditional methods. In ISMF, a piece of sheet metal is formed to the desired shape by a series of small incremental deformations. As it does not use dies, ISMF is effective for small batch production and prototypes. There are various kinds of die-less forming methods which can produce sheet metal parts without dies are proposed. This paper can help anyone who is interested in Incremental Sheet Metal forming with insight for future research direction.

Keywords: Die-less forming, Incremental sheet metal forming, Sheet metal parts.

References:

1. Cai, Z.-Y.,. Li M.-Z., and Lan, Y.-W. (2012). "Three-dimensional sheet metal continuous forming process based on flexible roll bending: Principle and experiments." Journal of Materials Processing Technology 212(1): 120-127.
2. Cai, Z. Y., Wang, S. H., Xu, X. D. and Li, M. Z., "Numerical simulation for the multi-point stretch forming process of sheet metal", Journal of Materials Processing Technology, Vol. 209, Issue 1, pp396-407, 2009.
3. Dejardin, S., Thibaud, S., Gelin, J.C. and Michel, G., "Experimental investigations and numerical analysis for improving knowledge of incremental sheet forming process for sheet metal parts", Journal of Materials Processing Technology, Vol. 210, Issue 2, pp363-369, 2010.
4. Davoodi, B. and Zareh-Desari, B. (2014). "Assessment of forming parameters influencing spring-back in multi-point forming process: A comprehensive experimental and numerical study." Materials & Design 59(0): 103-114.
5. Examining Tool Shapes in Single Point Incremental Forming (Cawley et al, 2013).
6. Edwards, k. R., Edwardson, S. P., Carey, C, Geoff, D., Watkins, K. G. (2010). "Laser micro peen forming without a tamping layer", International Journal ofAdvanced Manufacturing Technology, Vol. 47, Issues 1-4, ppl91 -200.
7. Gariépy, A., Larose, S. , Perron, C., Bocher, P., and Lévesque, M. (2013). "On the effect of the peening trajectory in shot peen forming." Finite Elements in Analysis and Design 69(0): 48-61.
8. Gariépy, A., S. Larose, C. Perron and M. Lévesque (2011). "Shot peening and peen forming finite element modelling – Towards a quantitative method." International Journal of Solids and Structures 48(20): 2859-2877.
9. Shi, Y., Liu, Y., Yi., P. and Hu., J. (2012). "Effect of different heating methods on deformation of metal plate under upsetting mechanism in laser forming." Optics & Laser Technology 44(2): 486-491.
10. Kim, T. Y., Lee, J. H.. and Cheong, S. K. (2010). " An area-average approach to peening residual stress under multi-impacts using a three-dimensional symmetrycell finite element model with plastic shots", Materials & Design, Vol. 31, Issue 1, pp 50-59.
11. Hardt, D.E., Olsen, B.A., Allison, B.T. and Pasch, K.. (1981). "Sheet metal forming with discrete die surfaces", Proceedings of Ninth American Manufacturing Research Conference pp. pl40-pl44.
12. Marciniak, Z., Duncan, J. L. and Hu, S. J. (2002). Mechanics of sheet mental forming, Butterworth Heinemann, Oxford, England.
13. Manuelli, A., Persano., L and Pisignano., D. (2014). "Flexible organic field-effect transistors based on electrospun conjugated polymer nanofibers with high bending stability." Organic Electronics 15(5): 1056-1061.

24-28

5.

Authors: **R. Abd Allah**

Paper Title: **Experimental Results and Technique Evaluation Based on Alienation Coefficients for Busbar Protection Scheme-Part II**

Abstract: In modern digital power protection systems, statistical coefficients technique is recently used for fault analysis. An alienation technique is developed for busbar protection against all ten types of shunt faults, which may locate in busbar protection zone, under different loading levels, fault resistances and fault inception angle. It does not need any extra equipment as it depends only on the three-line currents measurements, of all feeders connected to the protected busbar, which are mostly available at the relay location. It is able to perform fault detection, fault confirmation, faulty phase selection and determine the fault location in about a half-cycle period. Thus, the alienation technique is well suited for implementation in digital protection schemes. The technique is efficient to detect current

29-36

transformer saturation conditions without needing any additional algorithm. The effects of DC components and harmonics are eliminated with estimation of alienation coefficients. The proposed scheme is applied for an experimental circuit. LABVIEW program and MATLAB package are used to implement the proposed technique.

Keywords: Busbar protection, current transformer saturation, fault detection, internal and external faults, alienation coefficient, LABVIEW software, MATLAB.

References:

1. IEEE Guide for the Application of Current Transformers Used for Protective Relaying Purposes IEEE Std. C 37.110-1996.
2. Working group of the Relay Input Sources Subcommittee of the Power System Relaying Committee "Transient response of current transformers" IEEE Transaction on power apparatus and systems, Vol. PAS-96, no. 6, November/December 1977.
3. W.J. Smolinky "Design Consideration in the Application of Current Transformers For Protective Relaying Purposes", IEEE Transactions on Power Apparatus and System, Vol. PAS-92, no.4, July/August 1973.
4. D.A. Bradley, C.B.Gray, D.O'Kelly "Transient compensation of current transformers" IEEE Transactions on Power Apparatus and Systems, Vol. PAS-97, no.4, July/Aug 1978
5. Y.C. Kang, J.K.Park, S.H.Kang, A.T. Johns, R.K. Aggarawal " An algorithm for compensating secondary currents of current transformers" IEEE Transactions on Power Delivery, Vol.12, no.1, January 1997
6. D.C.Yu,Z.Wang, J.C. Cummins,H.-J. Yoon,L.A.Kojovic,and D.Stone "Neural network for current transformer saturation correction" in proc. IEEE Transm. Distrib. Conf., New Orrleans,LA,Apr.1999.
7. M.E. Masoud, E.H.Shehab-Eldin, M.M Eissa, and M.F.Elnagar. "A New Compensating secondary current technique for saturated current transformers" The 8thInternational Middle- East power system conference "MEPECON 2001", PP549-555.
8. Jiuping Pan, Khoi Vu, and Yi Hu "An Efficient Compensation Algorithm for Current Transformer Saturation Effects" IEEE Transactions on Power delivery, Vol. 19, no.4, October, 2004, PP1623-1628.
9. M.A. Salem, M.I. Gilany,Z. Osman and E. aboul Zahab " A new algorithm for compensating the secondary current during current transformer saturation" The tenth International Middle- East power systems conference "MEPECON 2005" PP 427-433.
10. M.S. Sachdev, T.S. Sidhu, H.S. Gill, "A busbar protection technique and its performance during CT saturation and CT ratio-mismatch", Power Delivery, IEEE Transactions on (Volume:15, Issue: 3), Page(s):895 - 901, Jul 2000.
11. Xuyang Deng, Jiale Suonan, Zaibin Jiao and Xiaoning Kang, "A Model Parameter Identification Based Bus-bar Protection Principle", Power and Energy Engineering Conference (APPEEC), 2010 Asia-Pacific, Page(s):1 – 6, March 2010.
12. Jiale Suonan, Xuyang Deng and Guobing Song, "A Novel Busbar Protection Based on Fault Component Integrated Impedance", Power and Energy Engineering Conference (APPEEC), 2010 Asia-Pacific, Page(s):1 – 6, March 2010.
13. Libao Xu, Grasset, H., Xingli Dong, Chenliang Xu and Ruidong Xu, "A new method for busbar protection stability improvement", Developments in Power System Protection (DPSP 2010). Managing the Change, 10th IET International Conference on, Page(s):1-4, April 2010.
14. W. Hauschild, and W. Mosch, "Statistical Techniques for High Voltage Engineering", hand book, English edition published by peter pere grinus Ltd., London, United Kingdom, chapter 2, pp. 78-79, 1992.
15. Labview 8.5, (Labview professional development system), NI.com/Labview.
16. Edwards, A. L. "The Correlation Coefficient." Ch. 4 in an Introduction to Linear Regression and Correlation. San Francisco, CA: W. H. Freeman, pp. 33-46, 1976.
17. Snedecor, G. W. and Cochran, W. G. "The Sample Correlation Coefficient r and Properties of r." 10.1-10.2 in Statistical Methods, 7th ed. Ames, IA: Iowa State Press, pp. 175-178, 1980.
18. Press, W. H.; Flannery, B. P.; Teukolsky, S. A.; and Vetterling, W. T. "Linear Correlation", Cambridge, England: Cambridge University Press, pp. 630-633, 1992.
19. Spiegel, M. R. "Correlation Theory." Ch. 14 in Theory and Problems of Probability and Statistics, 2nd ed. New York: McGraw-Hill, pp. 294-323, 1992.

6.

Authors: **Yang. Jung-Hua, Yu. Shih-Shien**

Paper Title: **A Simple Adaptive PD Control Scheme for Underactuated Mechanical Manipulators**

Abstract: Robot arms have been widely used in the industry for many decades. They have played a very important role in factory automation. However, actuators failure might occur due to unfrequent maintenance or limited life cycle, which could cause severe damages to the operators and products. To solve this problem, an adaptive PD controller incorporated with a nonlinear compensation term is developed. This controller is designed based on conventional PD control scheme combined with adaptive control algorithm. Theoretical proof for the closed-loop dynamic system is given via Lyapunov theorem and La Salle's theorem. To demonstrate the validity of the controller, a number of computer simulations as well as experiments are also performed.

Keywords: Adaptive control, Underactuated mechanical system, PD control

References:

1. Chemori and A. Loria (2004) Control of a Planar Underactuated Biped on a Complete Walking Cycle, IEEE Transaction on Automatic Control, Vol. 49, No. 5, pp. 838-843.
2. F. Mnif (2003) On the Reduction and Control for a Class of Non-holonomic Underactuated Systems, Journal of ELECTRICAL ENGINEERING, Vol. 54, No. 1-2, pp. 22-29.
3. A.D. Luca and S. Iannitti (2002) A Simple STLC Test for Mechanical Systems Under-actuated by One Control, Proc. of the IEEE International Conference on Robotics and Automation, pp. 1735-1740.
4. H. Yu, Y. Liu, and T. Yang (2007) Tracking Control of A Peddulum-driven Cart-pole Underactuated System, IEEE International Conference on Systems, Man, and Cybernetics, Montreal, QC, Canada, 7-10, Oct.
5. W. N. White and M. Foss (2006) A Direct Lyapunov Approach for a Class of Underactuated Mechanical Systems, Proc. of the American Control Conference Minneapolis, Minnesota, USA, June 14-16.
6. K. Lin (2003) A Reinforcement Learning Adaptive Fuzzy Controller for Robots, Fuzzy set and systems, pp. 339-352.
7. Y. Su and Y. Stepanenko (1999) Adaptive Variable Structure Set-point Control of Underactated Robot, IEEE Transactions on Automatic Control, Vol. 44, No. 11.
8. M. Zhang and T. J. Tarn (2003) A Hybrid Switching Control Strategy for Nonlinear and Underactuated Mechanical Systems, IEEE Transaction on Automatic Control, VOL. 48, NO.10, pp. 1777-1782.
9. Nadeem Qaiser, Naeem Iqbal, Amir Hussain, and Naeem Qaiser (2007), Exponential Stabilization of a Class of Underactuated Mechanical Systems using Dynamic Surface Cont, International Journal of Control, Automation, and Systems, vol. 5, no. 5, pp. 547-558, October.
10. Z. Sun, S. S. Ge, and T. H. Lee (2001) Stabilization of Underactuated Mechanical Systems: A Non-regular Backstepping Approach, International Journal of Control, Vol. 74, No. 11, pp. 1045-1051.
11. G. Hu, ,C. Makkar, and W. E. Dixon (2007) Energy-Based Nonlinear Control of Underactuated Euler-Lagrange Systems Subject to Impacts,

IEEE Trans. Automatic Control, Vol. 52, No. 9, pp. 1742-1748.
12. Liu, W. Guo, and J. Yi (2008) Dynamics and GA-Based Stable Control for a Class of Underactuated Mechanical Systems, International Journal of Control, Automation, and Systems, Vol. 6, No. 1, pp. 35-43.
13. L. T. Aguilar (2009) Output Feedback Nonlinear Tracking Control of a Nonminimum Phase 2 DOF Underactuated Mechanical Systems, Journal of Robotics, Vol. 2009.
14. Y. Hao, J. Yi, D. Zhao, and D. Qian. (2008), Robust Control Using Incremental Sliding Mode for Underactuated Systems with Mismatched Uncertainties, Proc. of American Control Conference Westin Seattle Hotel, Seattle, Washington, USA , June 11-13.
15. J.A. Acosta and M. L'opez-Martınez (2005) Constructive Feedback Linearization of Underactuated Mechanical Systems with 2-DOF, Proc. of the 44th IEEE Conference on Decision and Control Seville, pp.12-15.

	Authors:	**Pradnya N. Shinde, M. S. Chaudhari**
	Paper Title:	**Certification Revocation in Cluster Based MANET using Rerouting Mechanism**

Abstract: MOBILE ad hoc networks (MANETs) now a days acquires attention of researcher, investors and manufactures due to their mobile nature , easy positioning and hot pluggable nature of involving devices into network . However, the wireless natures reduces security hence MANET becomes more defenseless to various types of security attacks than the cable connected networks. To overcome this challenge various approaches came forward. Cluster based Certificate Revocation with Vindication Capability (CCRVC) is one of them. This approach successfully overcome security challenge but did not pay attention on congestion in network as well as it has no solution for node failure. Proposed system improves CCRVC approach by applying label switched path algorithm which overcome problem of congestion and also gives solution for node failure also.

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

References:

1. R. Callon, P. Doolan, N. Feldman, A. Fredette, G. Swallow, and A. Viswanathan, A framework for multiprotocol label switching, Internet draft¡draft-ietfmpls- framework-05.txt¿, September 1999.
2. E. Rosen, A. Viswanathan, and R. Callon, Multiprotocol label switching architecture , RFC 3031,, January 2001.
3. D. Awduche, J. Malcolm, J. Agogbua, M. O Dell, and J. McManus, Requirements for traffic engineering over mpls , RFC 2702, September 1999.
4. V. Sharma, Ben-Mack Crane, S. Makam, K. Owens, C. Huang, F. Hellstrand, J. Weil, L. Andersson, B. Jamoussi, B. Cain, S. Civanlar, andA. Chiu, Framework for mpls-based recovery, Internet draft¡draftietf- mpls-recovery-frmwrk-01.txt¿,, November 2000.
5. D. Haskin and R. Krishnan, A method for setting an alternative label switched paths to handle fast reroute, Internet draft¡draft-haskin-mplsfast- reroute-05.txt¿, November 2000.
6. S.Makam, V.Sharma, K.Owens, and C.Huang, Protection/restoration of mpls networks, Internet draft¡draft-makam-mpls-protection-00.txt¿, October, 1999.
7. G. Swallow, Mpls advantages for traffic engineering, in IEEE Comunication Magazine, pp 54-57, December 1999.
8. L. Andersson, P. Doolan, N. Feldman, A. Fredette, and B. Thoma,Ldp specification,, RFC 3036,, January 2001.
9. Daniel O. Awduche, L. Berger, D. Gan, T. Li, V. Srinivasan, and G. Swallow,Rsvp-te: Extensions to rsvp for lsp tunnels, draft ¡draftietf-mpls-rsvp-lsptunnel- 07.txt¿, August 2000.
10. E. Rosen, D. Tappan, G. Fedorkow, Y. Rekhter, D. Farinacci, T. Li, and A. Conta Mpls label stack encoding , RFC 3032,, January 2001.
11. A. Gaeil and C. Woojik Design and implementation of mpls network simulator (mns) supporting qos , 15th International Conference on Information Networking,, January 2001.
12. Gaeil and C. Woojik, Design and implementation of mpls network simulator (mns) supporting ldp and cr-ldp, proceedings of the IEEE International Conference on Networks (ICON 00), September 2000.
13. Gaeil and C. Woojik Simulator for mpls path restoration and performance evaluation, http://flower.ce.cnu.ac.kr/Ë. fog1/mns/index.htm see path protection/restoration, April 2001.
14. H. Yang, H. Luo, F. Ye, S. Lu, and L. Zhang Security in Mobile Ad Hoc Networks: Challenges and Solutions, IEEE Wireless Comm., vol. 11, no. 1, pp. 38-47, Feb. 2004.
15. P. Sakarindr and N. Ansari Security Services in Group Communications Over Wireless Infrastructure, Mobile Ad Hoc, and Wireless Sensor Networks , IEEE Wireless Comm., vol. 14, no. 5, pp. 8-20, Oct. 2007.
16. A.M. Hegland, E. Winjum, C. Rong, and P. Spilling A Survey of Key Management in Ad Hoc Networks , IEEE Comm. Surveys and Tutorials, vol. 8, no. 3, pp. 48-66, Third Quarter 2006.
17. L. Zhou and Z.J. Haas Securing Ad Hoc Networks , IEEE Network Magazine, vol. 13, no. 6, pp. 24-30, Nov./Dec. 1999.
18. L. Zhou, B. Cchneider, and R. Van Renesse COCA: A Secure Distributed Online Certification Authority, , ACM Trans. Computer Systems, vol. 20, no. 4, pp. 329-368, Nov. 2002.
19. H. Chan, V. Gligor, A. Perrig, and G. Muralidharan On the Distribution and Revocation of Cryptographic Keys in Sensor Networks , Trans. Dependable and Secure Computing, vol. 2, no. 3, pp. 233-247, July 2005.
20. P. Yi, Z. Dai, Y. Zhong, and S. Zhang, Resisting Flooding Attacks in Ad Hoc Networks, Proc. IntâAZl Conf. Information Technology: Coding and Computing, vol. 2, pp. 657-662, Apr. 2005.
21. B. Kannhavong, H. Nakayama, A. Jamalipour, Y. Nemoto, and N. Kato, A Survey of Routing Attacks in MANET , IEEE Wireless Comm. Magazine, vol. 14, no. 5, pp. 85-91, Oct. 2007. Technology: Coding and Computing, vol. 2, pp. 657-662, Apr. 2005.

7. **42-45**

	Authors:	**P. Asha, A. Salman, R. Arun Kumar**
	Paper Title:	**Experimental Study on Concrete with Bamboo Leaf Ash**

Abstract: The use of waste materials with pozzolanic properties in concrete production is a becoming a worldwide practice. The assessment of the pozzolanic activity of cement replacement materials is becoming increasingly important because of the need for more sustainable cementing products. In this paper, bamboo leaf ash is used as partial replacement for cement in ranges of 5%, 10%, 15%. Strength and durability tests were carried out to assess the feasibility of using bamboo leaf ash as partial replacement of cement in concrete

Keywords: Bamboo Leaf Ash, Concrete, Compressive Strength, Durability tests.

References:

1. Hernandez JF, Martirena, Middendorf B, Gehrke M, Budelmaun H (1998) "Use of wastes of the sugar industry as pozzolana in lime pozzolana binders: Study of the reaction". Cem. Concr. Res. 28(11): 1528-1536.
2. Massaza F, Costa U (1979). "Aspects of the Pozzolanic activity and Properties of pozzolanic cements Il" .Cemento. 76: 318.
3. Vatsala (2003). Bamboos in India, NISCAIR, New-Delhi.
4. Mehta PK (1987). "Natural Pozzolanas in Supplementry Cementing Materials for Concrete"Ed. VM Malhotra, CANMET, Canada. pp: 3-

8. **46-51**

33.
5. Ernesto Villar-Cociña a,⇑, Eduardo Valencia Morales a, Sergio F. Santos b, Holmer Savastano Jr. b, Moisés Frías "Pozzolanic behavior of bamboo leaf ash: Characterization and determination of the kinetic parameters".
6. V.N. Dwivedia , N.P. Singhb , S.S. Dasa and N.B. Singha, Department of Chemistry, DDU Gorakhpur University, Gorakhpur, India.
7. Mehta PK (1994). 'Mineral admixtures for concrete - An overview of Recent Developments' Advances in Cement and Concrete, Proceedings of an Engineering Foundation Conference, (Ed.) MW Gutzeck, SL Sarkar. pp: 243-256.
8. Nachbaur L, Mutin JC, Nonat A, Choplin L (2001). "Dynamic mode rheology of cement and tricalcium silicate pastes from mixing to setting. Cem. Concr. Res. 31: 183-192".
9. Narang DC (1992). "Portland and Blended Cements, Proceedings of 9th International Congress", New Delhi. Chem. Cem. Vol. 1: 213-257. Powers TC (1958). J. Am. Ceram. Soc. 41(1): 1-6.
10. Singh NB, Singh VD, Rai S (2000). "Hydration of bagasse ash-blended Portland cement". Cem. Concr. Res. 30: 1485-1488.
11. Detwiler R.J., Kjellsen K.O. and Gjorv O.E. 1991. "Resistance to Chloride Intrusion of Concrete Cured at Different Temperatures. ACI Materials Journal. 88(1): 19-24."
12. Hansson C.M. and Sorenson B. 1990. The Threshold Concentration of Chloride in Concrete for the Initiation of Corrosion. Corrosion Rates of Steel in Concrete. ASTM SP. 1065(99): 3-16.
13. McGrath. P. 1996. Development of Test Methods for Predicting Chloride Penetration into High Performance Concrete. Ph.D Thesis. Department of Civil Engineering, University of Toronto.
14. "Standard Test Method for Electrical Indication of Concrete's Ability to Resist Chloride Ion Penetration,"ASTM C 1202-97, Annual Book of ASTM Standards, Vol. 04.02, pp. 639–644.
15. Chandramouli K., Srinivasa Rao P. Seshadri Sekhar T., Pannirselvam N. and Sravana P. "Rapid Choride Permeability Test On Durability Study on Glass Fibre Reinforced Concrete" 1. Priyadrashini Institute of Technology for Women, Tenali, Guntur, Andhra Pradesh, India 2 JNTU College of Engineering, Hyderabad, Andhra Pradesh, India 3 Samual George Institute of Technology, Markapur, Prakasam District, Andhra Pradesh, India 4 VIT University, Vellore, India.
16. SinghNB. Neelam Singh. Santa Rai & Namwar Singh "Hydration of rice husk ash blended portland cement". Department of Chemistry, DDU Gorakhpur University. Gorakhpur 273 009. India
17. Taylor HFW. Proposed structure for calcium silicate hydrate gel. J Am Ceram Soc 1986;69:464–7.
18. Siddique R (2008) "Waste Material and By-Product in Concrete". Thapar Institute of Engineering & Technology (Deemed University), Patiala, India. ISBN 978-3-540-74294-4

Authors:	**A. Nouri Houshyar, Z. Leman, H. Pakzad Moghadam, R. Sulaiman**	
Paper Title:	**Review on Cellular Manufacturing System and its Components**	

Abstract: Shorter product life cycle, variable demands and international competitions become challenging issues nowadays hence, most of manufacturer made attempts to select type of manufacturing system for their company which be able to respond to these issues. Group technology [GT] is one of the most recent manufacturing philosophies which is able to cover the existed problems. Cellular manufacturing system [CMS] is one of the main applications of GT during these decades. Importance of CMS during these decades makes author motivated for haveing a brief review on literature of this topic. This paper made attempts to have a brief review on Cellular manufacturing system and its main components.

Keywords: Cellular manufacturing system, Cell formation, Machine layout Design.

References:

1. Rafiee, K., Rabbani, M., Rafiei, H., & Rahimi-Vahed, A. (2011). A new approach towards integrated cell formation and inventory lot sizing in an unreliable cellular manufacturing system. Applied Mathematical Modelling, 35(4), 1810-1819. doi: http://dx.doi.org/10.1016/j.apm.2010.10.011.
2. Ariafar, S. (2012). Inter-cell and intra-cell facility layout models under different demand environments in cellular manufacturing systems. (PHD), universiti Putra Malaysia.
3. Tavakkoli-Moghaddam, R, Javadian, N, Javadi, B, & Safaei, N. (2007). Design of a facility layout problem in cellular manufacturing systems with stochastic demands. Applied Mathematics and Computation, 184(2), 721-728.
4. Ramkumar, A.S., Ponnambalam, S.G., & Jawahar, N. (2009). A new iterated fast local search heuristic for solving QAP formulation in facility layout design Robotics and Computer-Integrated Manufacturing, 25(3), 620-629.
5. Logendran, R, & Talkington, D. (1997). Analysis of cellular and functional manufacturing system in the presence of machine breakdown. International Journal of Production Economics, 53(3), 239-256.
6. Papaioannou, G.and Wilson, J.M. (2010). The evoultion of cell formation problem methodologies based on recent studies (1997-2008): Review and directions for future resaerch. European Journal of Operational Research, 206(3), 509-521.
7. Ouk Kim *, Chang, Baek, Jun-Geol, & Baek, Jong-Kwan. (2004). A two-phase heuristic algorithm for cell formation problems considering alternative part routes and machine sequences. International Journal of Production Research, 42(18), 3911-3927. doi: 10.1080/00207540410001704078.
8. Mahdavi, Iraj, & Mahadevan, B. (2008). CLASS: An algorithm for cellular manufacturing system and layout design using sequence data. Robotics and Computer-Integrated Manufacturing, 24(3), 488-497.
9. Drira, Amine, Pierreval, Henri, & Hajri-Gabouj, Sonia. (2007). Facility layout problems: A survey. Annual Reviews in Control, 31(2), 255-267.
10. See, p., & Wong, K. (2008). Application of ant colony optimisation algorithms in solving facility layout problems formulated as quadratic assignment problems: a review. International Journal of Industrial and Systems Engineering, 3(6), 644-672.
11. Singh, S. P., & Sharma, R. R. K. (2006). A review of different approaches to the facility layout problems. The International Journal of Advanced Manufacturing Technology, 30(5-6).
12. Lee, Mehrdad Kazerooni, Luong, H. S., & Abhary, Kazem. (1997). A genetic algorithm based cell design considering alternative routing. Computer Integrated Manufacturing Systems, 10(2), 93-108. doi: http://dx.doi.org/10.1016/S09515240(97)00001-3.
13. Vakharia, AJ., & Chang, YL. (1997). Cell formation in group technology: a combinatorial search approach. International Journal Production resaerch 35(2), 185-207.
14. Hsu, C. T., & Su, C. M. (1998). Multi-objective machine-part cell formation through parallel simulated annealing. International Journal of Production Research, 36(8), 2185-2207. doi: 10.1080/002075498192841.
15. Nair, G. Jayakrishnan, & Narendran, T. T. (1998). CASE: A clustering algorithm for cell formation with sequence data. International Journal of Production Research, 36(1), 157-180. doi: 10.1080/002075498193985.
16. Sofianopoulou, S. (1999). Manufacturing cells design with alternative process plans and/or replicate machines. International Journal of Production Research, 37(3), 707-720. doi: 10.1080/002075499191742.
17. Baykasoglu, A., Gindy, NNZ. , & Cobb, RC. . (2001). Capability based formulation and solution of multiple objective cell formation problems using simulated annealing. Integr Manuf Syst 12(4), 258-274.
18. Mak, KL., & Wang, XX. (2002). Production scheduling and cell formation for virtual cellular manufacturing system. International Journal of Advance Manufturing Technology, 20(2), 144-152.
19. Yin, Y., & Yasuda, K. (2002). Manufacturing cells' design in consideration of various production factors. International Journal of

9. **52-57**

Production Research, 40(4), 885-906. doi: 10.1080/00207540110101639.
20. Das, K. , Lashkari, RS., & Sengupta, S. . (2006). Reliability considerations in the design of cellular manufacturing systems: a simulated annealing based approach. International Journal of Quality Reliability Manage 23(7), 880-904.
21. Schaller, Jeffrey. (2007). Designing and redesigning cellular manufacturing systems to handle demand changes. Computers & Industrial Engineering, 53(3), 478-490. doi: http://dx.doi.org/10.1016/j.cie.2007.05.006.
22. Ameli, M.S., & Arkat, J. (2008). Cell formation with alternative process routing and machine relaibility consideration. The International Journal of Advanced Manufacturing Technology, 35(7-8), 761-768.
23. Tavakkoli-Moghaddam, R., Javadian, N., Khorrami, A. , & Gholipor-Kanani, Y. (2010). Design of a scatter search method for a novel multi-criteria group scheduling problem in a cellular manufacturing system. Expert Syst Appl, 37(3), 2661-2669.
24. Mahdavi, Iraj, Aalaei, Amin, Paydar, Mohammad Mahdi, & Solimanpur, Maghsud. (2012). A new mathematical model for integrating all incidence matrices in multi-dimensional cellular manufacturing system. Journal of Manufacturing Systems, 31(2), 214-223.doi:http://dx.doi.org/10.1016/j.jmsy.2011.07.007.
25. Tompkins, J., White, J. and Bozer, Y. (2010). Facilities Palnning.
26. Ahi, A, Aryanezhad, M.B, Ashtiani, B, & Makui, A. (2009). A novel approaach to determine cell formation, intracellular machine layout and cell layout in CMS problem based on TOPSIS method. Computers and Operations Research., 36(5), 1478-1496.
27. Sangwan, K. S., & Kodali, R. (2009). FUGEN: A tool for the design of layouts for cellular manufacturing systems. International Journal of Services and Operations Mangement, 5(5), 595-616.
28. Wang, T. Y., Wu, K. B., & Liu, Y. W. (2001). A simulated annealing algorithm for facility layout problems under variable demand in Cellular Manufacturing Systems. Computers in Industry, 46(2), 181-188. doi: http://dx.doi.org/10.1016/S0166-3615(01)00107-5.
29. Ariafar, S, & Ismail, N. (2009). An improved algorithm for layout design in cellular manufacturing systems. Journal of Manufacturing Systems, 28(4), 132-139.
30. I, I., Shirazi, B., & Paydar, M. (2008). A flow matrix-based heuristic algorithm for cell formation and layout design in cellular manufacturing system. The International Journal of Advanced Manufacturing Technology, 39(9-10), 943-953. Doi: 10.1007/s00170-007-1274-7.
31. Jajodia, Satish, Minis, Ioannis, Harhalakis, George, & Proth, Jean-Marie. (1992). CLASS: Computerized Layout Solutions using Simulated annealing. International Journal of Production Research, 30(1), 95-108. Doi: 10.1080/00207549208942880.
32. Won, Y.D. (1997). A Linear programming approach to linear machine layout problem. Industrial Mathematics, 47(2), 59-68.
33. Wang, T., Lin, H., & Wu, K. (1998). An improved simulated annealing for facility layout problems in cellular manufacturing system. Computers & Industrial Engineering, 34(2), 309-319.
34. Bazargan-Lari, Massoud. (1999). Layout designs in cellular manufacturing. European Journal of Operational Research, 112(2), 258-272.
35. Wang, T.Y, Wu, K.B, & Liu, Y.W. (2001). A simulated annealing algorithm for facility layout problem under ariable demand in Cellular Manufacuring Systems. Computers in Industry, 46(2), 181-188.
36. Chang, J., Zhong, Y., & Han, Z. (2004). Small cell layouts based on accounting product demand and operating sequences. Tsinghua Science and Technology, 9(5), 589-595.
37. Solimanpur, M, Vrat, P, & Shankar, R. (2004). Ant colony optimization algorithm to the inter-cell layout problem in cellular manufacturing. European Journal of Operational Research, 157(3), 592-606.
38. Iranshahi, M.B., Shahandeh, A., & Husseini, S.M.M. (2005). A Simulated annealing solving for facility layout problems under variable demand in cellular manufacturing system. Amirkabir Journal of Science & Technology, 16(61B), 1-11.
39. Zhu, H., & Ye, W. (2009). Application of particle swarm algorithm based on simulated annealing in variable cellular facility layout problems. Zhongguo Jixie Gongcheng/ china Mechanical Engineering, 20(2), 181.
40. Jolai, F., Taghipour, M., & Javadi, B. (2011). A Variable neighborhood binary particle swarm algorithm for cell layout problem. International Journal of Advanced Manufacturing Technology, 55(1-4), 327-339.
41. Khaksar-Haghani, F., Kia, R., I, I., Javadian, N., & Kazemi, M. (2011). Multi-floor layout design of cellular manufacturing systems. International Journal of Management Science and Engineering Management, 6(5), 356-365. Doi: 10.1080/17509653.2011.10671184.
42. Afrazeh, A., Keivani, A., & Najafabadi Farahani, L. (2010). A new model for dynamic multi floor facility layout problem Journal of Advanced Modeling and Optimization, 12(2), 249-256.
43. Kia, R., Paydar, M.M., Jondabeh, M.A, Javadian, N., & Nejatbakhsh, Y. (2011). A fuzzy linear programming approach to layout design of dynamic cellular manufacturing systems with route selection and cell reconfiguration. International Journal of Management Science and Engineering Management, 6(3), 219-230. Doi: 10.1080/17509653.2011.10671166.
44. Li, H. , & Love, P.E.D. (2000). Genetic search for solving construction site-level unequal-area facility layout problems. . Automation in Construction, 9(2), 217-226.
45. Dunker, T., Radons, G., & Westkämper, E. (2005). Combining evolutionary computation and dynamic programming for solving a dynamic facility layout problem. European Journal of Operational Research, 165(1), 55-69. Doi: http://dx.doi.org/10.1016/j.ejor.2003.01.002.
46. Hakobyan, A. (2008). Heuristics for the dynamic facility layout problem with unequal area departments. (Doctor of Philosophy), West Virginia University.
47. McKendall Jr, R., & Hakobyan, A. (2010). Heuristics for the dynamic facility layout problem with unequal-area departments. European Journal of Operational Research, 201(1), 171-182. doi: http://dx.doi.org/10.1016/j.ejor.2009.02.028.
48. Hernandez Gress, ES., Mora-Vargas, J., Herrera del Canto, LE., & Diaz-Santillan, E. A. (2011). Genetic algorithm for optimal unequal-area block layout design. International Journal of Production Research, 49(8), 1-13.
49. Samarghandi, H., Taabayan, P., & Behroozi, M. (2013). Metaheuristic for fuzzy dynamic facility layout problem with unequal area constraints and closness ratings. International Journal of Advanced Manufacturing Technology, 67, 2701-2715.
50. Kia, R., khorrami, J., Mahdavi, I., Javadian, N., & Kazemi, M. (2012b). Designing an intra-cell layout model in dynamic cellular manufacturing systems with unequal-area facilities. International Journal of Management Science and Engineering Management, 7(1), 10-19. doi: 10.1080/17509653.2012.10671202.
51. Chang, C., Wu, T., & Wu, C. (2013). An efficient approach to determine cell formation, cell layout and intracellular machine sequence in cellular manufacturing systems. Computers & Industrial Engineering, 66(2), 438-450. doi: http://dx.doi.org/10.1016/j.cie.2013.07.009.
52. Heragu, S.S. (1989). Knowlede based approach to machine cell layout. Computer and Industrial Engineering, 17(1-4), 37-42.
53. Sarker, B.R. and Xu, Y.I. (2000). Designing multi-product lines:Job routing in cellular manufacturing systems. IIE Transactions, 32(3), 219-235.
54. Akturk, M. , & Turkcan, A. (2000). Cellular manufacturing system design using a holonistic approach. International Journal of Production Research, 38(10), 2327-2347. doi: 10.1080/00207540050028124.
55. Chan, Felix T. S., Lau, K. W., Chan, P. L. Y., & Choy, K. L. (2006). Two-stage approach for machine-part grouping and cell layout problems. Robotics and Computer-Integrated Manufacturing, 22(3), 217-238. doi:http://dx.doi.org/10.1016/j.rcim.2005.04.02.
56. Nsakanda, A., Diaby, M., & Price, W. . (2006). Hybrid genetic approach for solving large-scale capacitated cell formation problems with multiple routings. European Journal of Operational Research, 171, 1051-1070.
57. Wu, X., Chu, C., Wang, Y., & Yan, W. (2007). A genetic algorithm for cellular manufacturing design and layout. European Journal of Operational Research, 181(1), 156-167. doi: http://dx.doi.org/10.1016/j.ejor.2006.05.035.
58. Paydar, M., Mahdavi, I., Sharafuddin, I., & Solimanpur, M. (2010). Applying simulated annealing for designing cellular manufacturing system using MDmTSP. Computer and Industrial Engineering, 59(4), 929-936.
59. Dixit, A.R., & Mishra, P.K. (2010). Ex-CLASS: Extended cell formation and layout selection considering production parameters with sequence data. International Journal of Production Development, 10(1-3), 180-200.
60. Sangwan, K.S., & Kodali, R. (2011). An integrated hybrid model for the integrated design of cellular manufacturing systems. International Journal of Services and Operations Management, 9(2), 202-226.

10.	**Authors:**	**Geed S. R, Singh R. P, Rai B. N**

	Paper Title:	**Recent Development of Extraction Processes and Extraction of Essential Oil from Coriander by Clean Technology**	
	Abstract: By increasing demand of essential oil in medical and cosmetically field various different extraction technologies are used to extract a essential oil Semi-continuous supercritical carbon dioxide extraction or clean technology unit was used to extract the essential oil from the coriander seeds. Dried seeds were subjected to extraction after grinding to particle size of 300µm. The extraction was carried out at three different pressure levels (30, 35 and 40 MPa), three temperature levels (308, 313, 318 K) and three levels of supercritical CO2 flow rates (10, 15, 20 g/min). The highest essential oil was obtained at 40MPa, 313 K and 15 g/min combination of parameters and the highest yield was equal to 3.20 gm/100gm. The study showed that the temperature has more significant effect than the pressure while the flow rate was having no significant effect on the yield of coriander seed oil **Keywords:** Recent technology, clean technologies, coriander seed; supercritical carbon dioxide; temperature; essential oil. **References:** 1. Al-Rawi, S.S., Ibrahim, A.H., Abdul Majid, A.S., Abdul Majid, A.M.S., Ab Kadir, M.O., 2013. Comparison of yields and quality of nutmeg butter obtained by extraction of nut megrind by Soxhlet and supercritical carbon dioxide (SC-CO2). J. Food Eng.119 (3), 595–601. 2. Anderson ML, Burney DP (1998) J AOAC Int 81:1005 Colegate SM, Molyneux RJ (1993) (eds) Bioactive natural products, CRC Press, Boca Raton. 3. Couto, R.M., Fernandes, J., Silva, M., Simoes, P.C., 2009. Supercritical extraction of lipids from spent coffee grounds. J. Supercrit. Fluids 51, 159–166. 4. Diederichesen A (1996), Promoting the conservation and use of underutilized and neglected crops.3.IPGRI,22-2 5. Donehower RC, Rowinsky ER (1993) Cancer Treat Rev 19C: 63 Hostettmann K, Marston A, Maillard M, Hamburger M (1995) (eds) Phytochemistry of plants used in traditional medicine. Clarendon Press, Oxford. 6. El-dengawy, R.A., Khalifa, A., Ramadan, B.R. 2001. Use of Bottle gourd (Lagenaria siceraria) seeds in production of Tahina. Egypt J. of Food Sci., 29(1), 1-11 7. Sukhdev Swami Handa, Sumit Preet Singh Khanuja, Gennaro Longo, Dev Dutt Rakesh 2008) Extraction Technology for Medicinal and Aromatic Plants, 155-177 8. John Shi , Sophia Jun Xue , Ying Ma , Yueming Jiang,Xingqian Ye, and Dianyu Yu (2012) Green separation technologies in food processing: supercritical-CO2 fluid, Journal of Food Engineering, 93, 273-294 9. Jokic, S., Nagy, B., Zekovic, Z., Vidovic, S., Bilic, M., Velic, D., Simandi, B., 2012. Effects of supercritical CO2 extraction parameters on soybean oil yield. Food Bioprocess Technol. 90 (4), 693–699. 10. Kaufman PB, Csake LJ, Warber S, Duke JA, Brielmann HL (1999) (eds) Natural products from plants. CRC Press, Boca Raton 11. McDonald, S., Prenzler, P. D., Antolovich, M., & Robards, K. (2001). Phenolic content and antioxidant activity ofolive extracts. Food Chemistry, 73, 73–8. 12. Miguel Herreroa,b, Jose A. Mendiolaa, Alejandro Cifuentesa, Elena Iba˜neza,(2010) Supercritical fluid extraction: Recent advances and applications Journal of Chromatography A,1217, 2495–2511. 13. Miller, D.J., Hawthorne, S.B., Clifford, A.A., 1997. Solubility of chlorinated hydrocarbons in supercritical carbon dioxide from 313 to 413 K and at pressures from 150 to 450 bar. J Supercrit. Fluids. 10 (1), 57–63. 14. Pradhan, R.C., Meda, V., Rout, P.K., Naik, S., Dalai, A.K., 2010. Supercritical CO2 extraction of fatty oil from flaxseed and comparison with screw press expression and solvent extraction processes. J. Food Eng. 98, 393–397. 15. Romvari, M., 1976. Book of Spices, third ed, Konyve Kiado, Mezogazdasagi, Budapest, pp91. 16. Stahl, E., Quirin, K.W., Gerard, P. 1987. Verdichtete Gaze zur Extraktion und Raffination. Springer, Heidelberg. 17. Sthal E. and Gerard D. 1985. Solubility Behaviour and Fractionation of Essential Oils in Dense Carbon Dioxide. Perfumer and Flavorist, 10, 29-37. 18. Said, P.P., Pradhan, R.C. and Rai, B.N. (2014), A green separation of Lagenaria siceraria seed oil, Industrial Crops and Product, 52,796-800 19. Salgin, U., Korkmaz, H., 2011. A green separation process for recovery of healthy oil from pumpkin seed. J. Supercrit. Fluids 58, 239–248. 20. V. Ille´s, H.G. Daood , S. Perneczki, L. Szokonya, M. Then(1999) Extraction of coriander seed oil by CO2 and propane at super- and subcritical conditions, journals of Supercritical Fluids 17 (2000) 177–186 21. Zhao, S., Zhang, D., 2013. A parametric study of supercritical carbon dioxide extraction of oil from Moringa oleifera seeds using a response surface methodology. Sep. Purif. Technol. 113, 9-17.	**58-63**
11.	**Authors:**	**S. Narasimha, M. Sushama**	
	Paper Title:	**Control Method for Improving the Voltage Utilization Factor of Multilevel Inverters Considering Co-Generation System Voltage Fluctuation**	
	Abstract: Given the threat of diminution of fossil fuels and several environmental concerns, cogeneration systems using natural energy and fuel cells have begin widespread. In such systems, the generated power is converted into a DC voltage, stored in batteries, and then converted into an AC voltage by inverters. The generated power is often unsteady and large voltage fluctuations. In an attempt to improve efficiency and decrease costs, a simple control method for improving the voltage utilization factor of multilevel inverter. This paper describes a control method which combined feed back control of output voltage with the improvement on voltage utilization factor that the superposition ratio is controlled in the three phase multilevel inverter application to smart grid/co-generations. The aim of this control method is to realize improvement on the controllability and absorption of the fluctuation of the DC voltage by superimposing the moderate third harmonic wave. It is applied to the multilevel inverter, and the operation principle and features are explicated, By simulation/MATLAB. **Keywords:** Multilevel inverter; improvement of voltage utilization factor; feedback control; DC-link voltage; Co-generation. **References:** 1. Amei,K.;Tanizaki,Y.;Ohji,T.;Sakui,M.”A Control Method of Superposition Ratio in the Improvement of Voltage Utilization Factor in Three-Phase Multilevel Inverter considering the DC Voltage Fluctuation” Power Conversion Conference - Nagoya, 2007.7Publication Year: 2007, Page(s):37 – 142. 2. Maruyama T, Asaeda T, Ikeda K. “Multilevel inverter”. 1992 Annual Meeting Record IEE Japan, No. S8-4. 3. Imai K. Power electronics hand book. NTS Co. Ltd.; 2002. p 533–535. 4. Amei K, Maeda T, Ohji T, Sakui M. “Method for reducing of high frequency component in the single phase PWM inverter by the multilevel”. Joint Technical Meeting on Semiconductor Power Converter and Industry Electric Application IEE Japan, SPC-03, No. 95, p	**64-67**

41–46, 2003.
5. Sugimoto H, Koyama M, Tamai S. "Theory and actual design for AC servo system". p 44–46, 1990.
6. Velaerts B, Mathys P, Tatakis E, Bingen G. "A novel approach to the generation and optimization of three level PWM waveforms". Proc IEEE Pesc'88, P1255.

12.	**Authors:**	**Shivalingappa I. Battur, Shweta S. Bagali**
	Paper Title:	**A Survey on Energy Efficient Target Tracking Techniques in Wireless Sensor Networks**

Abstract: Wireless sensor networks (WSNs) find its application in areas such as target detection and tracking, environmental monitoring, industrial process monitoring, and tactical systems. Energy efficiency is one of the important research issues in WSNs, since it determines the lifetime of the sensor network deployed for the intended applications. Target tracking is one of the killer applications of wireless sensor networks and energy-efficient target tracking algorithms are used for accurate tracking. In this paper, the focus is mainly driven over the survey of the different energy-efficient target tracking techniques for Wireless Sensor Network.

Keywords: Clustering, Prediction, target tracking, Wireless Sensor Networks.

References:

1. Tian He., Vicaire P., Ting Yan., Liqian Luo., Lin Gu, Gang Zhou, Stoleru R, Qing Cao, Stankovic and Abdelzaher J A (2006). Achieving Real-time Target Tracking using Wireless Sensor Networks, Proceedings of IEEE Real-Time and Embedded Technology and Applications Symposium, San Jose, California, pp. 37-48.
2. Xu Y., Winter J and Lee W C (2004). Prediction-Based Strategies for Energy Saving in Object Tracking Sensor Networks, In Proc. International Conference on Mobile Data Management, Berkeley, CA, pp. 346-357.
3. Xu Y., Winter J and Lee W C (2003). On Localized Prediction for Power Efficient Object Tracking in Sensor Networks, In Proc. 1st International Workshop on Mobile Distributed computing, Providence RI, pp.434-439.
4. Samarah S., Hajri M and Boukerche A (2011). A Predictive Energy-Efficient Technique to Support Object-Tracking Sensor Networks, IEEE Transactions On Vehicular Technology, 60 (2), pp. 656–663.
5. Nandhini M and Sarma Dhulipala V R (2012). Energy-Efficient Target Tracking Algorithms in Wireless Sensor Networks: An Overview, International Journal of Computer Science And Technology IJCST , 3 (1), pp.
6. Ramya K., Praveen Kumar K and Srinivas Rao V (2012). A Survey on Target Tracking Techniques in Wireless Sensor Networks, International Journal of Computer Science & Engineering Survey (IJCSES), 3 (4), pp.
7. Nirmala S., Haripriya C and Suma S (2012). An energy-efficient trade-off between data estimation and data aggregation to maximize lifetime in WSN, International Journal of Advanced Technology & Engineering Research (IJATER), 2 (4), pp.
8. Jin Zheng., Weijia Jia and Guojun Wang (2009). Data Management of Mobile Object Tracking Applications in Wireless Sensor Networks, journal of Computers, 4(9), pp.
9. Virendra Choudhary and Chowdhary K R (2012). Energy Efficient Object Tracking Technique using Mobile Data Collectors in Wireless Sensor Networks, International Journal of Computer Applications, 3, pp.
10. Jukka Kohonen (2004). Data Gathering in Sensor Networks, Helsinki Institute for Information Technology in Finland, pp.
11. Ancy R (2012). Energy Reduction using Adaptive Clustering in Sensor Networks, International Journal of Communications and Engineering, 1(1), pp.

13.	**Authors:**	**Khushal Khera, Anmol Bhatia, Sanjay Kumar, Mehul Bhatia**
	Paper Title:	**Investigation of the Effects of Various Heat Treatment Processes on Microstructure & Hardness with Respect to Corrosion Behavior for Carbon Steels**

Abstract: In this paper, the effect of heat treatments on microstructure and mechanical properties of EN -31 and EN-8 carbon steel are being studied. Further both the carbon steels are compared on the basis of their mechanical properties as well as the rate of corrosion, then the hardness of both the carbon steel are noted before and after the heat treatment processes. The heat treatment processes i.e. Annealing, Tempering & Oil quenching (hardening) are done. The hardening temperature for EN-31 varies from 8200C - 8600C whereas the hardening temperature for EN-8 varies from 7500C - 9000 C. The mechanical properties such as the hardness and tensile strength among three process, the oil quenching sample posses highest hardness and the annealed sample posses highest elongation. That is how heat treatment plays an important role in the mechanical properties and corrosion resistance of the experimental steel.

Keywords: EN-31, EN-8, heat treatment, microstructure, mechanical properties.

References:

1. N. El-Bagoury, Mohammed A. Amin, Q. Mohsen (2011), Effect of Various Heat Treatment Conditions on Microstructure, Mechanical Properties and Corrosion Behavior of Ni Base Superalloys, International journal of electrochemical science, vol 6,pp.6718 – 6732.
2. Ashish Bhateja , Aditya Varma, Ashish Kashyap and Bhupinder Singh Study the Effect on the Hardness of three Sample Grades of Tool Steel i.e. EN-31, EN-8, and D3 after Heat Treatment Processes Such As Annealing, Normalizing, and Hardening & Tempering,The International Journal of Engineering And Science (IJES) ,Vol 1 ,Issue 2 pp. 253-259.
3. Datong ZHANG , Ruiping CHEN, Weiwen ZHANG, Zongqiang LUO and Yuanyuan LI (2010), Effect of microstructure on the mechanical and corrosion behaviors of a hot-extruded nickel aluminum bronze, Acta Metall. Sin.(Engl. Lett.)Vol.23 No.2 pp113-120.
4. http://kvsteel.co.uk/steel/EN8.html).
5. Calister- Materials science and engineering- an introduction 7th edition John wiley publication, 2007.
6. Kakani, Material Science,New Age International limited, 3rd edition, 2004.

14.	**Authors:**	**Olatunji S. O, Oke A. E, Owoeye L. C**
	Paper Title:	**Factors Affecting Performance of Construction Professionals in Nigeria**

Abstract: The construction industry is made up of professionals whose various disciplines are to ensure that construction work can be completed. This study evaluates the effects of the performance of construction professionals on construction project success in Nigeria. The study adopted a survey research design with the use of a well structured questionnaire which was administered on construction professionals, 68 copies were retrieved and used for the analysis out of the administered 139. Frequency and percentiles was used to analyse the distribution of demographic descriptors of construction professionals while mean score and mean difference was used to analyse the roles of construction professionals and factors influencing the performance of construction professional. The findings

revealed that the major role of an architect is to translate the user's needs into builders requirement, engineer is most concerned with the calculation of load and grade requirements, liquid flow rates and materials stress points to ensure that the structure can withstand stress, the quantity surveyor is mostly concerned with management and control of costs within the construction projects while a builders major role is building production management. The performances of construction professionals are, however, affected mostly by remuneration, motivation and incentives and promotion opportunities and least affected by supervision and co-worker. The demographic factors which mostly affect the professionals are experience, gender and age. Based on the findings of the research, the majority of the construction professionals are male therefore; better friendly work environment should be created by the managements of the construction industry so as to attract female professionals. Also, construction industries should focus its efforts on improving the performance of young and newly employed construction professionals by developing management training programs, workshops, financial incentives, and other non–work-related activities that would encourage and support them to stay and grow with the industry, since there are relatively few young professional in the industry.

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

References:

1. Mohamed, Q. J. (2011). Evaluation of a structural model relating job satisfaction, organization commitment and precursors to voluntary turnover.
2. Nidhi A. M (2010) Employee Satisfaction: Scope and Influencing Factors, Journal of Industrial Teacher Education, 58(7), 187-195.
3. Judge B. (2004) The Construction Industry. Summary Report on the Nigerian Construction Industry.
4. Morgan F. (1997). A Review and an Integration of Research on Job Burnout. Academy of Management Review
5. Molander V. (1996). Risk Factors in the Nigerian Construction Industry. Msc thesis submitted to university of Ghana.
6. Oke, A. E. (2013). Project management leadership styles of Nigerian construction professionals, International Journal of Construction Project Management, 5(2), 159-169.
7. Oloyede, P.E. (2008). Performance: Application, assessment, causes, and consequences. Msc thesis submitted to University of Ibadan, Nigeria.
8. Raabe E and Beehr T. (2003). The changing nature of nurses' job satisfaction: an exploration of sources of satisfaction in the 1990s. Journal of Advanced Nursing, 36, 67-75.
9. Odeyinka T. (2006), "Personal correlates of job satisfaction: empirical evidence fromUK
10. Pergamit, M.R. and J.R. Veum. (1999). What is a promotion? Industrial and Labor Relations.
11. Aje I. O., & Awodele, O. A. (2006). A study of the ethical values of quantity surveyors in Nigeria. Paper presented at a 2-day national seminar on Ethical issues and the challenges in construction professionals' service delivery.
12. Ofori D. and Chan T. (2001) Immigration, acculturation and adaptation. Applied Psychology.
13. Atkinson, R. (1999). Project management: Cost time and quality, Two best guesses and a phenomena. International Journal of Project Management, 17(6), 337–343.
14. Robbins, L. O. (2003). Job performance. Verimlilik Dergisi Publication, New Zealand. universities", International Journal of Social Economics, 30, 34-46.
15. Luthans, F. (1995). Organisational behaviour. (7th ed.). McGraw-Hill, Inc, New York.
16. Currall, S. C., Towler, A. Judge, T. A. and Kohn, L. (2005) 'Pay Satisfaction and Organizational Outcomes', Personnel Psychology, 11(4), 102-110.
17. Greenberg, J. (1990). Yesterday, Today, and Tomorrow. Journal of Management, 2, 15-18.
18. Aamodt M. G. (2004). Applied industrial / Organisational psychology. USA Thomson Wadsworth
19. Egan, M., & Kadushan, G. (2004). Job satisfaction of home health social workers in the environment of cost containment. Health and Social Work, 18(6), 96-103.
20. Connolly, K., & Myers, E. (2003). Wellness and mattering: the role of holistic factors in contracting companies in Jordan. Journal of information technology in construction, 17(9), 156-166.
21. Clark (1997). A Review and an Integration of Research on Job Burnout. Academy of Management
22. Beutel, A.M. & M.M. Marini. (1995). Gender and values. American Sociological Review, 13(6) 88-94.
23. Moyes G. D (2008). Comparative Analysis Of Employee Job Satisfaction in the Accounting Profession; University of Texas-Pan American
24. Bonache (2005). factors influencing performance in India banking sector Singapor Management Review.
25. Gurbuz A. (2007). The relationship between information technology adoption and job satisfaction in Indian banking sector. Singapore Management Review, 12(3), 32-36.
26. Gately F.B. (1997). The relationship between job satisfaction and organizational Commitment amongst high school teachers in disadvantaged areas in the Western Cape. Mini-thesis submitted to the Department of Industrial Psychology, Faculty of Economic and Management Science, University of the Western Cape, Western Cape, South Africa.
27. Kreitner, R., & Kinicki, A. (2007). Organizational Behavior. (17th Edition). Boston, MA: McGraw Hill Irwin, New York.
28. Onukwube, H N (2012) 'Correlates of job satisfaction amongst quantity surveyors in consulting firms in Lagos, Nigeria', Australasian Journal of Construction Economics and Building, 18, 345-356.

15.

Authors: **P. Veera Swamy, B. Venkateswara Reddy, N. B. S. Naveen**

Paper Title: **Efficient Compression of Image by Lifting Based Technique**

Abstract: Images contain large amounts of information that requires much storage space, large transmission bandwidths and long transmission times. Therefore it is advantageous to compress the image by storing only the essential information needed to reconstruct the image. Discrete Wavelet Transform (DWT) is most popular transformation technique adopted for image compression In this work" LIFTING BASED-DWT" technique is proposed and is implemented on FPGA Instead of using ROM as a cache memory we are using FIFO as an storage device by which throughput can be increased.

Keywords: Image compression, FIFO, Xilinx, lifting base DWT

85-88

References:

1. Nagabushanam, Cyril Prasanna Raj P, Ramachandran, "Design and implementation of Parallel and Pipelinined Distributive Arithmetic based Discrete Wavelet Transform IP core", EJSR, Vol . 35, No. 3, pp. 378-392,2010.
2. Majid Rannani and Rajan Joshi, "An Overview of the JPEG2000 Still Image Compression Standard", Signal Processing, Image Communication, vol. 17, pp. 3-48, 2010.
3. David S. Taubman, Michael W. Marcellin – "JPEG 2000 – Image compression, fundamentals, standards and practice", Kluwer academic

publishers, Second printing – 2009.
4. C. Chakrabarti and M. Vishwanath, "Architectures for Wavelet Transforms: A Syrvey", Journal of VLSI Signal Processing, Kulwer vol.lO, pp. 225-236,2007.
5. Lifting-BasedWavelet Transform," IEEE Transactions on
6. Computers, vol. 53, no. 4, 2004.
7. W.H. Chang, Y.S. Lee,W.S. Peng, and C.Y. Lee, "A Line-Based,
8. Memory Efficient and Programmable Architecture for 2D DWT
9. Using Lifting Scheme," in IEEE International Symposium on
10. Circuits and Systems, Sydney, Australia, 2001, pp. 330–333.
11. C.T. Huang, P.C. Tseng, and L.G. Chen, "Flipping Structure: An
12. Efficient VLSI Architecture for Lifting-Based DiscreteWavelet
13. Transform," in IEEE Transactions on Signal Processing, 2004,
14. pp. 1080–1089.
15. K. Andra, C. Chakrabarti, and T. Acharya, "A VLSI Architecture
16. for Lifting-Based Forward and InverseWavelet Transform,"
17. IEEE Trans. of Signal Processing, vol. 50, no. 4, 2002, pp. 966–
18. Daubechies, W. Sweldens,(1998), " Factoring wavelet transform into lifting steps", J. Fourier Anal. Appl. 4, 247–269.
19. Chao Cheng and Keshab K. Parhi,(2008), ".High-Speed VLSI Implementation of 2-D Discrete Wavelet Transform",IEEE Transactions on Signal Processing, Vol. 56, No. 1.
20. Ali M. Al-Haj "Fast Discrete Wavelet Transformation Using FPGAs and Distributed Arithmetic" International Journal of Applied Science and Engineering 2003. 1, 2: 160-171.
21. S.Masud "VLSI system for discrete wavelet transforms", PhD Thesis, Dept. of electrical engineering, The Queen's University of Belfast, 1999.
22. M. Nagabushanam, Cyril Prasanna Raj "Design and FPGA Implementation of Modified Distributive Arithmetic Based DWT – IDWT Processor for Image Compression" IEEE Transaction on signal processing Vol.32, No.3.
23. G.R.Shruti,V.Prabhu"Low Power And High Speed Encoder Using Lossless Image Compression" MASAUM Journal of Open Problems in Science and Engineering, Vol.1, No.1, October 2009.

16.

Authors: **Bhageerathy K. P, Anu P. Alex, Manju V. S, Raji A. K**

Paper Title: **Use of Biomedical Plastic Waste in Bituminous Road Construction**

Abstract: The quantum of plastic in solid waste is increasing due to increase in population, urbanization, development activities and changes in life style which is leading to widespread littering on the landscape. The disposal of waste plastic has thus become a serious problem globally due to their non-biodegradability. The deteriorating quality of roads is another area of concern as the present roads are not able to withstand the increasing traffic and also are less resistant to adverse weather conditions. Research is being carried out to develop suitable alternatives to the conventional road construction materials. In this work, the use of autoclaved medical plastic waste in the form of shredded syringes in road construction is tested. The main objective of the study was to investigate the performance of the bituminous mix modified with bio-medical plastic waste and to compare it with the normal mix. Medical plastic waste was collected from IMAGE (Indian Medical Association Goes Eco-friendly), Palakkad, Kerala, India. As part of the study, the properties of Plastic Coated Aggregates (PCA) were determined. The results showed improved properties for PCA when compared to normal aggregates. The properties of both the mixes were tested by conducting creep test and indirect tensile stiffness modulus test.

Keywords: Autoclaved medical plastic, Plastic Coated Aggregates, Creep test, Indirect tensile stiffness modulus test.

89-92

References:

1. Vidula Swami, J. Abhijeet, and P. Karan, "Use of waste plastic in the construction of bituminous road", International Journal of Engineering Science and Technology, vol. 4, Issue 5, 2012, pp. 1-5.
2. S. K. Sultana and K. S. B. Prasad, "Utilization of waste plastic as a strength modifier in surface course of flexible and rigid pavements", International Journal of Engineering Research and Applications, vol. 2, Issue 4, 2012, pp. 1185-1191.
3. A. Gawande, G. Zamare and V. C. Renge, "An overview on waste plastic utilization in asphalting of roads", Journal of Engineering Research and Studies, vol. 3, Issue 2, 2012, pp. 1-5.
4. R. Vasudevan, A. Ramalinga Chandra Sekar, Sundarakannan, and R. Velkennedy, "A technique to dispose waste plastics in an eco friendly way - Application in construction of flexible pavements", Construction and Building Materials Journal, vol. 28, Issue 7, 2011, pp. 311-320.
5. C. S. Bindu and K. S. Beena, "Waste plastic as a stabilizing additive in stone mastic asphalt", International Journal of Engineering and Technology, vol. 2, Issue 6, 2010, pp. 379-387.
6. K. K. Babu and A. K. Raji, "Utilization of marginal materials as an ingredient in bituminous mixes", Highway Research Record No. 36, Indian Roads Congress, 2007, pp. 42-43.
7. A. K. Raji, K. K. Babu and G. Sreekala, "Use of certain industrial solid wastes in Flexible pavement construction", Proc. XXI Kerala Science Congress, Kollam, 2009, pp. 276-278.
8. A. K. Raji, K. K. Babu and G. Sreekala, "Utilisation of medical plastic wastes in bituminous pavement", Proc. XXI Kerala Science Congress, Kollam, 2009, pp. 325-327.

17.

Authors: **Chander Garg, Ankush Khadwal**

Paper Title: **Behavior of Ground Granulated Blast Furnace Slag and Limestone Powder as Partial Cement Replacement**

Abstract: One of the main ingredients used for the production of concrete is the Ordinary Portland Cement (OPC). Carbon-dioxide (CO2) gas which is a major contributor in green house effect and the global warming, is produced in the production of cement, hence it is needed either to search for another material or partially replace cement by some other material.[2] In recent years ground granulated blast furnace slag (GGBS) and Limestone powder (LP) 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.[1]. This paper investigates the possibility of utilizing Blast Furnace Slag (BFS) and Limestone powder (LP) as a cement substitute in concrete, in order to reduce environmental problems due to manufacturing of cement and waste disposal. The present study reports the results of an experimental study, conducted to evaluate the strengths and strength of hardened concrete, by partially replacing the cement by various percentages of blast furnace slag and

93-96

Limestone powder for M25 grade of concrete at 7 and 28 days. In this study w/c ratio of 0.42 is used. The compressive strengths at various ages are studied. From this study it is observed that BFS and LP could be utilized partially as alternative construction material for replacement of cement in concrete.

Keywords: Concrete, Replacement, Blast furnace slag, Limestone Powder, Workability, Compressive strength, Flexure strength, Tensile strength, Durability.

References:

1. Latha K.S, Rao M.V.S, and Reddy V. S. "Estimation of GGBS and HVFA strength efficiencies in concrete with age", International Journal of Engineering and Advanced Technology (IJEAT) ISSN: 2249 – 8958, Vol. 2, Issue 2, December (2012)
2. Dubey A, Chandak R, and Yadav R.K. "Effect of blast furnace slag powder on compressive strength of concrete", International Journal of Scientific & Engineering Research. ISSN 2229-5518, Vol. 3, Issue 8, August (2012)
3. Pathan V.G, Ghutke V.S, and Pathan G. "Evaluation of concrete properties using ground granulated blast furnace slag", International Journal of Innovative Research in Science, Engineering and Technology Vol. 1, Issue 1, November (2012)
4. Gudissa W, and Dinku A. "The use of limestone powder as an alternative cement replacement material: An experimental study", Journal of EEA. Vol. 27, (2010)
5. Allahverdi A, and Salem S, "Simultaneous influences of micro silica and Limestone powder on properties of Portland cement paste", Ceramics – Silikáty 54 (1) 65-71 (2010)
6. Ahmed A.H.H, Abdurrahman R.B, and Mohammed Z.A, "Influence of Limestone Powder as Partial Replacement of Cement on Concrete and the Effect of High Temperature on It", Received 13/5/2009 and Accepted 10/12/2009
7. IS: 8112-1989 Specification for coarse and fine aggregate from natural sources of concrete
8. IS: 456-2000 Plain and reinforced concrete - Code of practice
9. IS: 9013-1999 Specification for admixtures for concrete (First Revision).
10. IS: 10262-2009 Concrete mix proportioning-guidelines (First Revision).

18.

Authors: **A. Benuel Sathish Raj, S. Praveen Kumar, G. Manikandan, P. Jerry Titus**

Paper Title: **An Experimental Study on the Performance of Concentrated Photovoltaic System with Cooling System for Domestic Applications**

Abstract: Concentrated photovoltaic (CPV) system helps in focusing the direct solar radiation on the photovoltaic module. The CPV systems use lenses or mirrors and tracking systems to focus a large area of sunlight into a small beam. As the Concentrated Solar radiation reaches the PV panel system, the temperature increases rapidly and because of this increase in temperature, the output efficiency will be decreased. In order to reduce the temperature and to increase the output efficiency, the Cooling System is used. It has been found that the electrical output of the water cooled CPV is 4.7 to 5.2 times more than the PV module (without concentration and cooling). The cooling system has a heat pipe filled with Acetone. The performance of the CPV module with cooling system based on voltage output and temperature were evaluated and verified with the help of an experimental setup. The electrical energy from the CPV panel is stored in the battery and it is converted to AC supply by using inverter and then used for the residential lighting.

Keywords: Concentrated Solar Photovoltaic (CPV); Cooling System; Pulsating Heat pipe.

References:

1. Skoplaki E, Palyvos JA., On the temperature dependence of photovoltaic module electrical performance: a review of efficiency/power correlations, Solar Energy, 2009, 614–24.
2. Coventry JS, Performance of a concentrating photovoltaic/thermal solar collector, Solar Energy, 2005; 78(2): 211-222.
3. Sendhil Kumar Natarajan a, Tapas Kumar Mallick, Matty Katz, Simon Weingaertner, Numerical investigations of solar cell temperature for photovoltaic concentrator system with and without passive cooling arrangements, International Journal of Thermal Sciences, 50 (2011) 2514-2521.
4. V.Jafari Fesharaki, Majid Dehghani, J. Jafari Fesharaki, The Effect of Temperature on Photovoltaic Cell Efficiency, Proceedings of the 1st International Conference on Emerging Trends in Energy Conservation - ETEC Tehran, Tehran, Iran, 20-21 November 2011.
5. Hanif M., M. Ramzan, M.Rahman, M. Khan, M. Amin, M.Aamir, Studying Power Output of PV Solar Panels at Different Temperatures and Tilt Angles, ISESCO Journal of Science and Technology, Volume 8 - Number 14 - November 2012 (9-12).
6. Carlo Renno, Fabio Petito, Design and modeling of a concentrating photovoltaic thermal (CPV/T) system for a domestic application, Energy and Buildings 62 (2013) 392–402.
7. Mohan Kolhea, Du Binb, and Eric Huc , Water Cooled Concentrated Photovoltaic System, International Journal of Smart Grid and Clean Energy, vol. 2, no. 2, May 2013.
8. Concentrating Solar Power-Technology Brief, International Renewable Energy Agency (IRENA), 2013.
9. Royne A, Dey CJ, Mills DR. Cooling of photovoltaic cells under concentrated illumination: a critical review. Solar Energy Materials & Solar Cells, 2005; 86(4):451-483.
10. Anderson, W.G., Dussinger P.M, Sarraf D.B, Tamanna, S, Heat pipe cooling of concentrating photovoltaic cells, 33rd IEEE Photovoltaic Specialists Conference, pp. 1 – 6, 11-16 May 2008.
11. Akbarzadeh, A., and Wadowski, T., "Heat Pipe-Based Cooling Systems for Photovoltaic Cells Under Concentrated Solar Radiation," Applied Thermal Engineering, 16(1), pp. 81-87, 1996.
12. Kinsey, G.S, Nayak, A, Mingguo Liu, Garboushian, V., Increasing Power and Energy in Amonix CPV Solar Power Plants, IEEE Journal of Photovoltaics, Volume:1, Issue: 2, pp 213 – 218, 2011.
13. Heng-Yau Pan, Chang, Sheng-Hsiung, Bo-Hong Ke, Kuan-Jen Chen, The study on the allowing angle of the sun's rays of concentrated photovoltaic (CPV) concentrator, International Conference on Electrical and Control Engineering (ICECE), 2011, pp 6185 – 6188, 16-18 Sept. 2011.
14. Mingguo Liu, Gordon, R, Plesniak A, Bagienski W, Garboushian V, Performance analysis and modeling of the world's largest CPV power plant, 39th IEEE Photovoltaic Specialists Conference (PVSC), pp 1749 – 1754, 16-21 June 2013.
15. Pascal Biwole1, Pierre Eclache, Frederic Kuznik, Improving the performance of solar panels by the use of phase-change materials, World Renewable Energy Congress, 8-13 May 2011, Sweden.
16. Ahmad Hasan, Sarah Josephine McCormack, Ming Jun Huang, Brian Norton, Energy and Cost Saving of a Photovoltaic-Phase Change Materials (PV-PCM) System through Temperature Regulation and Performance Enhancement of Photovoltaics, Energies 2014, 7, 1318-1331.
17. K.A. Moharrama, M.S. Abd-Elhadyb, H.A. Kandila, Enhancing the performance of photovoltaic panels by water cooling, Ain Shams Engineering Journal Volume 4, Issue 4, December 2013, Pages 869–877.
18. Anja, Christopher J. Dey, David R. Mills, Cooling of photovoltaic cells under concentrated illumination: a critical review, Solar Energy Materials and Solar Cells, Volume 86, Issue 4, 1 April 2005, Pages 451–483.

19. H.G. Teoa, P.S. Lee, M.N.A.Hawlader, An active cooling system for photovoltaic modules, Applied Energy, 2012 309–315.
20. Gur Mittelman, Abraham Kribus, Abraham Dayan, Solar cooling with concentrating photovoltaic/thermal (CPVT) systems Energy Conversion and Management, Volume 48, Issue 9, September 2007, Pages 2481–2490.
21. L. Dorobanțu, M. O. Popescu, C. L. Popescu, and A. Crăciunescu, Experimental Assessment of PV Panels Front Water Cooling Strategy, International Conference on Renewable Energies and Power Quality (ICREPQ'13), Bilbao (Spain), 20th to 22th March, 2013.
22. Li Zhua, Robert F Boehm, Yiping Wang, Christopher Halford, Yong Sunc, Water immersion cooling of PV cells in a high concentration system, Solar Energy Materials & Solar Cells, 2011, 538–545.

19.

Authors: **S.H.V Prasada Rao, B.Rajesh, P.Kanakaraja**

Paper Title: **Secure Data Communication on ARM using Embedded 'C'**

Abstract: The encryption standards such as DES (Data Encryption Standard), AES (Advanced Encryption Standard) and EES (Escrowed Encryption Standard) are widely used to solve the problem of communication over an insecure channel. With advanced technologies in computer hardware and software, these standards seem not to be as secure and fast as one would like. In this paper we propose a fast and secure encryption algorithm using substitution mapping, translation and transposing operations. Like one's compliment methodology the proposed symmetric encryption technique has two advantages over traditional schemes. First, the encryption and decryption procedures are much simpler, and consequently, much faster. Second, the security level is higher due to the inherent poly-alphabetic nature of the substitution mapping method used here, together with the translation and transposition operations performed in the algorithm. In this paper, the encryption and decryption procedures are explained and the performance is compared with popular encryption algorithms.

Keywords: Cipher text; Decryption; Encryption; Plaintext; Secret key, mode switch, GSM modem, Siren

References:
1. William Stallings, "Network Security Essentials (Applications and Standards)" Pearson Education, 2004, pp. 2–80.
2. Charles P. Pfleeger, Shari Lawrence Pfleeger. "Security in computing" Pearson Education 2004 – pp. 642-666
3. Jose J. Amador, Robert W. Green, "Symmetric-Key Block Ciphers for Image and Text Cryptography", International Journal of Imaging System Technology, Vol. 15 – pp. 178-188, 2005.
4. Dragos Trinca, "Sequential and Parallel Cascaded Convolution Encryption with Local Propagation: Toward Future Directions in Cryptography", Proceedings of The third International Conference on information Technology-New Generations. (ITNG'06), 2006, IEEE Computer Society.
5. Data Encryption Standard: [Online] Available: http://csrc. nist.gov/publications/fips/fips 46-3/fips- 46-3.pdf
6. Advanced Encryption Standard, [Online] Available: http:// csrc.nist.gov/publications/fips/fips197/ fips-197.pdf
7. Escrowed Encryption Standard [Online] Available: http:// csrc.nist.gov/publications/fips/fips1185/ fips-185.txt
8. Dr. Varghese Paul, "Data Security in Fault Tolerant Hard Real-time Systems: Use of Time Dependant Multiple Random Cipher Code". Ph.D dissertation, Cochin University of Science and Technology, April, 2003.
9. Aameer Nadeem, Dr. M. Younus Javed, "A Performance Comparison of Data Encryption Algorithms", 2005 IEEE.Of the Encryption Scheme.

20.

Authors: **Deepa M Raju, Abraham C G, V Suresh Babu**

Paper Title: **FPGA Implementation of Frame Decoding Behaviour of Flex Ray Communication Protocol**

Abstract: This paper has highlighted the concept of Frame decoding behaviour of Flex Ray Communication Protocol. The VHDL model of Flex Ray frame decoder of Flex Ray Communication Controller is designed. The design is simulated using ModelSim Altera Edition 13.0 and synthesized using Quartus II 13.0.0.156. The frame decoding behaviour is implemented using Stratix IV GX FPGA. This project design is made with the intention of development of low power; high performance FPGA for decoding the data transmitted which will be a basic for the development of Flex Ray communication controller.

Keywords: Area Efficient, FPGA, Low power, VHDL Language

References:
1. S. Shreejith, S. A. Fahmy, and M. Lukasiewycz, "Accelerating Validation of Time-Triggered Automotive Systems on FPGAs," in Proc. of the International Conference on Field Programmable Technology (FPT), 2013.
2. J. Sobotka and J. Novak, "Flex Ray controller with special testing capabilities," in Proc. of the Conference on Applied Electronics (AE), 2012, p. 269 to 272.
3. Dominique Paret. "Flex Ray and its Applications: Real Time Multiplexed Network", First Edition. © 2012 John Wiley & Sons, Ltd. Published 2012 by John Wiley & Sons, Ltd.
4. Michael Gerke, "Flex Ray: Coding and Decoding, Media Access Control, Frame and Symbol Processing and Serial Interface", November 24,
5. Bernhard Schatz, Christian Kuhnel, "Automotive Embedded Systems Handbook", Technical University of Munich, Michael Gonschorek, Elektrobit Corporation, 2007.
6. Sergey Kosovo, "Flex Ray Communication Protocol" (Wake Up and Start Up).
7. "Method of Synchronizing clock of different clusters", US Patent Application, 2009.
8. Vector Training
9. Flex Ray Communication System Protocol Specification Version 3.0.1 Flex Ray
10. Flex Ray Communication System Protocol Specification Version 2.1 Flex Ray Consortium Revision A, Flex Ray Consortium Std., December 2005
11. Flex Ray Communications System - Electrical Physical Layer Specification, v3.0.1, Flex Ray Consortium.

21.

Authors: **Mohammad Sharear Kabir, Ehsan Ahmed Ashrafi, Tamzid Ibn Minhaj, Md Moinul Islam**

Paper Title: **Effect of Foundry Variables on the Casting Quality of As-Cast LM25 Aluminium Alloy**

Abstract: The effect of foundry variables, such as mold materials and pouring temperature on the microstructure, dendrite arm spacing, percentage porosity and mechanical properties of as-cast LM25 Al alloy was investigated. The microstructure of the as-cast samples was characterized by optical microscopy. The results showed that the secondary dendrite arm spacing (SDAS, λ) is well refined by pouring at higher temperatures in metal mold compared to

greensand mold. The SDAS decreases with increasing pouring temperature due to multiplication of nucleation sites in the superheating liquid melt. The percentage porosity of the cast specimens decreases with increasing pouring temperatures and is lowest for metal mold at highest pouring temperature. The mechanical properties of the as-cast LM25 Al alloy, such as hardness and ultimate tensile strength increases as pouring temperature increases. However, percentage elongation of the as-cast alloy decreases with increasing pouring temperatures. Among the mold materials, permanent metal mold casting has shown to impart better quality than greensand mold casting.

Keywords: LM25 Al alloy, Pouring temperature, secondary dendrite arm spacing (SDAS, λ), percentage porosity, permanent metal mold, greensand mold, mechanical property.

References:

1. P.K.Mallick, fiber reinforced composites Materials, Manufacturing and design, CRC Press Taylor and Francis Group P.No:70(2010).
2. EEA Report: Aluminum Usage in Cars, 2008.
3. V. Suresh, R. Maguteeswaran, R. Sivasubramaniam, D. Shanmuga Vadivel, "Micro Tensile Behaviour of LM25 Aluminium Alloys by Stir Cast Method Compared with Finite Element Method", International Journal of Research in Mechanical Engineering, Volume 1, Issue 1, July-September, 2013, pp.111-116, www.iaster.com, ISSN Online:2347-5188 Print: 2347-8772
4. http://www.azom.com/article.aspx?ArticleID=75
5. Z. Li, A.M. Samuel, F.H. Samuel, C. Ravindran, S. Valtierra H.W. Doty, Mater. Sci. Eng., A 367 (2004) 96-110.
6. Z. Li, A.M. Samuel, F.H. Samuel, C. Ravindran, H.W. Doty, S. Valtierra, Mater. Sci. Eng., A 367 (2004) 111-122.
7. M. Zeren, J. Mater. Process. Technol. 169 (2005) 292-298.
8. R. Torres, J. Esparza, E. Velasco, S.Garcia-Luna, R. Colas, Int. J. Microstructure and Materials Properties, 1 (2006) 129-138.
9. J. E. Gruzleski, B. M. Closset, The treatment of liquid aluminium-silicon alloys, 3rd ed., American Foundryman's Society, Inc. Des Plaines, Illinois, 1990.
10. L. Ananthanarayanan, J. E. Gruzleski, AFS Transactions, 141(1992) 383-391.
11. H. G. Kang, H. Miyahara, B. Ogi in: Proceeding of the 3rd Asian Foundry Congress '95 Eds.
12. Lee Z.H., Hong C.P., Kim M.H., The Korean Foundrymen's Society 1995, p. 108.
13. K. Rhadhakrishna, S. Seshan, M. R. Seshadri, AFS Transactions 88 (1980) 695-702.
14. J. Pavlović-Krstić, R. Bähr, G. Krstić, S. Putić, " The effect of mold temperature and cooling conditions on the size of secondary dendrite arm spacing in Al-7Si-3Cu alloy", MJoM Vol 15 (2) 2009 p. 105-113.
15. S. Hasse, editor of Gießerei-Lexikon, Schiele und Schön, publishing house for technical literature, Berlin
16. ASTM Standard B557, 1984, " Standard Test Methods for Tension Testing Wrought and Cast Aluminum- and Magnesium-Alloy Products," ASTM International, West Conshohocken, PA, 2003, DOI: 10.1520/B0557-10, www.astm.org.
17. Xiaowu HU , Fanrong AI and Hong YAN, "Influences of pouring temperature and cooling rate on microstructure and mechanical properties of casting Al-Si-Cu aluminum alloy", Acta Metall. Sin.(Engl. Lett.)Vol.25 No.4 pp272-278 August 2012
18. M. C. Flemings, Solidification Processing, McGraw-Hill, Inc, USA, 1974.
19. W. Kurz, D.J. Fisher, Fundamentals of solidification, Trans.Tech. Publications, Switzerland-Germany-UK-USA, 1984.
20. K. Rhadhakrishna, S. Seshan, M. R. Seshadri, AFS Transactions 88 (1980) 695-702.
21. B. Zang, M. Garro, C. Tagliano, Mater. Sci. Technol., 21 (2003) 3-8
22. C. H. Caceres, C. J. Davidson, J.R. Griffiths, Mater. Sci. Eng., A 197 (1995) 171-179.
23. T. Jing, Simulations during the Process of Solidification (Publishing House of Electronics Industry, Beijing, 2002)

22.

Authors: **Joshua T.O, Alao O.A, Oluyori R.T**

Paper Title: **Effects of Various Quenching Media on the Mechanical Properties of Inter - Critically Annealed 0.267%C - 0.83% Mn Steel**

Abstract: The mechanical properties of a medium carbon steel of known composition after been subjected to various quenching media at various inter - critical temperatures were evaluated. The microstructures obtained were used to explain the results. Tensile test specimens were produced from the medium carbon steel, which was in the as - rolled condition. Samples were quenched in water, distilled water and palm kernel oil respectively after been allowed to attain the following inter - critical temperatures 7600c, 7700c, 7800c, 7900c, 8000c. After each treatment, the mechanical properties and microstructures of each specimen were evaluated.

Keywords: Mechanical Properties, Medium Carbon Steel, Quenching media

121-127

References:

1. Avner S.H, (2006): Introduction to physical metallurgy, second edition, Tata McGraw-will publish company Ltd.
2. http://www.carbon steel.com/Types-of-carbon steel
3. Kashim O.S (2010): Evaluation of Khaya senegalensis seed oil as a quenching medium for plain carbon steel. Unpublished B.Eng. Project, Department of Metallurgical Engineering, Ahmadu Bello University, Zaria, Nigeria.
4. Oberg, E; et al. (1996). Machinery's Handbook (25th ed.), Industrial Press Inc
5. Rajan, T.V; Sharma, C.P. and Sharma, A. (1989). Heat Treatment Principles and Techniques.Prentice Hall of India Private'Limited, New Delhi. pp. 36-58
6. www.1psinda.com/knowledge/knowledge -heat - treatment. asex

23.

Authors: **Md. Masud Alom, Md. Zahid Husain Khan**

Paper Title: **Environmental and Social Impact Due to Urban Drainage Problems in Dhaka City, Bangladesh**

Abstract: Dhaka, the capital city of Bangladesh is one of the populous Mega City in the world. As the growth of urban population tacking place at an exceptionally rapid rate, the city is unable to cope with changing situations due to their internal resource constraints and management limitations. In recent years Dhaka City is facing extensive drainage problems during the monsoon (May to October) as a common and regular problem like water pollution, traffic congestion, air and noise pollution, solid waste disposal etc. This paper focuses on the overall situation of the drainage system, environmental impact and health hazard of urban people by unplanned drainage system of Dhaka city. This work includes some lab test (Water test), questionnaire survey and collection of drainage maps. Inadequate drainage sections, conventional drainage system with low capacity and gravity, natural siltation, absence of inlets and outlets, lack of proper maintenance are the prime causes of blockage in drainage system. Management of drainage system of Dhaka City is presently a challenge for the urban authorities. Therefore, a close coordination among urban authorities and agencies and collaboration between public and private sectors is needed for effective management

128-132

and sustainable operation of urban drainage system.

Keywords: Drainage System, Environmental Impact, Management, Maintenance and Operation.

References:

1. Bari, F.M., and Hasan, M. 2001. Effect of Urbanization on Storm Runoff Characteristics of Dhaka City. Tsinghua University Press. XXIX IAHR Congress. Beijing.
2. BBS. 2003. National Population Census 2001, Preliminary Report, Bangladesh Bureau of Statistics. Government of Bangladesh. University Press Limited, Dhaka.
3. Chowdhury, J. U. et al. 1998. Measurement and Analysis of Rainfall Runoff in Selected Catchments of Dhaka City. Institute of Hydrology. Wallingford, UK.
4. Huq, S. and Alam, M. 2003. Flood Management and Vulnerability of Dhaka City. Bangladesh Center of Advance Studies (BCAS). Dhaka.
5. M. Ali Ashraf & Md. Shariful Alam Chowdhury. 2009. Drainage Planning in the Cities of Bangladesh: Case Study of Drainage and Water Logging in Chaktai Commercial area, Chittagong.
6. Mark, O. and Chusit, A. 2002. Modeling of Urban Runoff in Dhaka City. Asian Institute of Technology (AIT). Thailand.
7. www.weatherbase.com. Retrieved 2008-12-15.

24.

Authors: **Manoj D. Kharad, Naveen Kumar**

Paper Title: **Modeling and Simulation of Unified Power Quality Conditioner (UPQC)**

Abstract: This paper presents design, modeling and simulation of Unified power quality conditioner system to improve the power quality. Unified power quality conditioner consists of combined series and shunt active power filters for simultaneous compensation of voltage and current. The Unified power quality conditioner system is modeled using the elements of Simulink and it is simulated using matlab.A new synchronous-reference- frame based control method and d-q-0 theory is used to improve the power quality at the point of common coupling on power distribution systems under unbalanced and distorted load conditions. The results are analyzed and presented using matlab/simulink software.

Keywords: Active power filter (APF), phaselockedloop (PLL), power quality (PQ), synchronous referenceframe (SRF), unified power-quality (PQ) conditioner (UPQC).

References:

1. H. Akagi, E. H. Watanabe, and M. Aredes," Instantaneous Power Theory and Applications to Power Conditioning". Hoboken, NJ: Wiley-IEEEPress, Apr. 2007.
2. MetinKesler, EnginOzdemir," A Novel Control Method for Unified Power Quality Conditioner (UPQC) Under Non-Ideal Mains Voltage and Unbalanced Load Conditions",978-1-4244-4783-1/10/2010 IEEE.
3. MetinKesler and EnginOzdemir," Synchronous-Reference-Frame-Based Control Method for UPQC Under Unbalanced and Distorted Load Conditions", IEEE Trans. Industrial electronics, vol. 58, no. 9, september 2011.
4. VinodKhadkikar,Ambrish Chandra,"A New Control Philosophy for a Unified Power Quality Conditioner (UPQC) to Coordinate Load-Reactive Power Demand between Shunt and Series Inverters", IEEE trans. on power delivery, vol. 23, no. 4, october 2008.
5. P. Kannan, V.Rajamani,"Design, Modeling and Simulation of UPQC system with PV array", International Journal of Engineering Research & Technology (IJERT)Vol. 1 Issue 6, August – 2012 ISSN: 2278-0181.

25.

Authors: **Abdul-Husain M. Abdullah, Enas W. Abood**

Paper Title: **Race Classification using Craniofacial Features from Colored Face Images**

Abstract: This paper produces a system for race classification from face images. Two powerful types of local features have been considered: craniofacial features (eyes,mouth,nose) of the faces and color variance of the skin color together to further improves race classification accuracy. For classification, five ratios have been taken which calculated as a mathematically relation between features using four race groups selected from FG-NET ,CPIR database and other gathered by us as own database. The system scored a success about 82% in recognition for tested images .

Keywords: Race recognition; facial features.

References:

1. J. Brigham, The influence of race on face recognition, in Aspects of Face Processing, eds. H. Ellis, M. Jeeves, and F. Newcombe (1986), pp. 170–177.
2. A. O'Toole, J. Peterson, and K. Deffenbacher, Another-race effect for classifying faces by sex, Perception 25 (1996) 669–676.
3. Y. Cheng, A. O'Toole, and H. Abdi, Classifying adults' and children's faces by sex .Computational investigations of subcategorical feature encoding, Cognitive Science 25 (2001).
4. A. Dina ,(2013). Age Classification From Facial Images System.Computer dept.collage of science .Basrah university.Iraq.
5. M. Ghulam, H. Muhammad , F. Alenezy, B. George, M. M.Anwar, H. Aboalsamh, Race Classification From Face Images Using Local Descriptors, International Journal on Artificial Intelligence Tools ,Vol. 21, No. 5 (2012) 1250019 .
6. R. Brunelli and T. Poggio, Face recognition: Features versus templates, IEEE Transactions on Pattern Analysis and Machine Intelligence 15(10) (1993) 1042–1052.
7. O. H. MacLin and R. S. Malpass, Racial categorization of faces: The ambiguous race face effect, Psychology, Public Policy, and Law 7(1) (2001) 98–118.
8. P. J. Phillips, F. Jiang, A. Narvekar, J. Ayyad, and A. O'Toole, An other-race effect for face recognition algorithms, ACM Transactions on Applied Perception 8(2) (2011).
9. S. Hosoi, E. Takikawa, and M. Kawade, Ethnicity estimation with facial images, in Proc. 6th IEEE Int. Conf, on Automatic Face and Gesture Recognition (AFGR), (2004), pp. 195–200.
10. Levin, D. T. (1996). Classifying faces by race: The structure of face categories. Journal of Experimental Psychology: Learning, Memory, and Cognition, 22, 1364–1382.
11. Levin, D. T. (2000). Race as a visual feature: Using visual search and perceptual discrimination tasks to understand face categories and the cross-race recognition deficit. Journal of Experimental Psychology: General, 129, 559–574.
12. A. M.Triesman, , & G. Gelade, (1980). A feature-integration theory of attention. Cognitive Psychology, 12, 97–136.
13. M. H. Papesh and S. D. Goldinger . Deficits in Other-Race Face Recognition: No Evidence for Encoding-Based Effects. Canadian Journal of Experimental Psychology .2009, Vol. 63, No. 4, 253–262.

14. S. Gutta, H. Wechsler, and P. J. Phillips, Gender and ethnic classification of face images, in Third IEEE International Conference on Automatic Face and Gesture Recognition, 1998. Proceedings, (1998), pp. 194–199.
15. F.S. Manesh, M. Ghahramani, and Y.P. Tan, Facial part displacement effect on templatebased gender and ethnicity classification, 11th International Conference on Control Automation Robotics & Vision (ICARCV), (2010), pp. 1644–1649.
16. C. Solomon and T. Breckon: "Fundamentals of Digital Image Processing", EBook 9780470689783; Wiley Online Library 9780470689776,2011.
17. N. Dayan: "Skin Aging Handbook: Market Perspectives, Pharmacology Formulation, and evaluation Techniques", Andrew William Press, 2008.

26.

Authors: **T. Bheemeswara Reddy, K. Satyanarayana, T. Himaja**

Paper Title: **Modeling and Analysis of Adaptive Neuro Fuzzy Inference System Based BLDC Motor under Different Operating Conditions**

Abstract: In this paper the performance factors of adaptive neuro fuzzy inference system (ANFIS) based brushless direct current (BLDC) motor for controlling speed and torque under different operating conditions are analyzed. The above scheme has many characteristics like small torque ripple, strong robustness, good anti interference ability and reduction of starting currents. The dynamic characteristics of the brushless DC motor such as speed, torque, current and voltages of the inverter components are observed and analyzed. In order to verify the effectiveness of the controller, the simulation results are compared with PID controller. The simulation result show that the overall performance of ANFIS based BLDC motor is much better when compared to PID controller under different operating conditions.

Keywords: Brushless DC motor, speed control, torque control, PID controller and ANFIS controller

References:

1. P. Yedamale, Brushless DC (BLDC) Motor Fundamentals. Chandler,AZ: Microchip Technology, Inc., last access; March 15, 2009.
2. R. Akkaya, A.A. Kulaksız, and O Aydogdu, DSP implementation of a PV system with GA-MLP-NN based MPPT controller supplying BLDC motor drive, Energy Conv. and Management 48, 210-218, 2007.
3. Tan Chee Siong, Baharuddin; M.Fayzul; M.Faridun N.T, Study of Fuzzy
4. and PI Controller for Permanent-Magnet Brushless DC Motor Drive, IEEE International Power Engineering and Optimization Conference.PEOCO 2010
5. Derong Luo1, Wei Huang1, Shoudao Huang1, Wenqiang Li1, Lei Zheng1Simulation Study of the Fuzzy-PID Control System for Brushless DC Motors 1Department of Electrical Engineering, Hunan University, China
6. Tan Chee Siong, Baharuddin Ismail, Siti Fatimah Siraj, Mohd Fayzul Mohammed fuzzy logic controller for BLDC pemanenet magnet motor drives
7. M. V. Ramesh1, J. Amarnath2, S. Kamakshaiah3 and G. S. Rao3 speed control of brushless dc motor by using fuzzy logic pi controller Department of Electrical and Electronics Engineering, P.V.P. Siddhartha Institute of Technology, Vijayawada, A.P, India
8. Soni Monika Gordhandas., 2Girish V Jadav Speed Control of BLDC Motor using Fuzzy Logic Controller Parul Institute of Engg. &Technology, Vadodara, India

144-148

27.

Authors: **Binu Sara Mathew, Gayathri Mohan, Kuncheria P. Isaac, Susan Rose**

Paper Title: **Analytical Investigation on the Benefit of Sisal Fibre Reinforcement of Expansive Clayey Subgrade using Fem**

Abstract: Well-built and maintained highways play a major role in nation's development. The subgrade soil is integral part of pavements which provides support to the pavement. The subgrade soil and its properties are important in the design of pavement structure. Expansive soils are those soils, which have high swelling and shrinkage characteristics, extremely low CBR value and shear strength. The soil of Kuttanad region of Alappuzha district of Kerala in India is example of expansive soil entirely different from the normal well drained soils in their morphological, chemical and physical characteristics. Thus construction of roadbeds on or with these soils, which do not possess sufficient strength to support wheel loads imposed upon them either during construction or during the service life of the pavement is a commonly encountered problem. Hence extensive research is being done on improvement of strength properties of these types of soils. Ground improvement technique use locally available material to the maximum and hence found economical. It includes stabilization technique and reinforced earth technique. Lime when added to the soil, can substantially increase the stability, impermeability, and load-bearing capacity of the subgrade. Presently, the soil reinforcement technique is well established and is used in variety of applications like improvement of bearing capacity, filtration and drainage control. Conventional methods of reinforcement consists of continuous inclusions of strips, fabrics, and grids into an earth mass. An experimental investigation was done earlier by the same authors to study the effect of stabilization with lime, sand and sisal fibre on compaction characteristics, CBR value, swelling property, and elastic modulus of expansive soil. The optimum quantity of fibers was decided based on CBR value. The static triaxial test was conducted on unstabilized and stabilized soils at a confining pressure of 40 kPa. In this study, a finite element analysis was done to quantify the benefits of stabilization of clay. The stress-strain data from tri-axial test were used as input parameters for evaluating the vertical compressive strain at the top of subgrade soils using elasto-plastic finite-element analysis. It was observed that the elastic modulus value almost doubled as a result of stabilization. The vertical compressive strain at the top of unreinforced and reinforced subgrade soils obtained as an output from the finite element model was used for estimating the improvement in service life of the pavement or decrease in layer thickness and consequent reduction in construction cost. It was observed that a 14% reduction in construction cost and 7.3 times improvement in TBR value can be attained due to sisal fibre stabilization. Hence it can be concluded that the stabilization with sisal fibre after lime stabilization is as an efficient and economic method of stabilizing expansive subgrade soil.

Keywords: CBR, TBR, subgrade, fibre, stabilization, Kuttanad, Alappuzha.

References:

1. Binu, S. M. and Gayathri, M. (2012), "Effect of Sisal Fibre Reinforcement on the Performance of Kuttanad Clay as Subgrade Soil", Proceedings of 13th National Conference on Technological Trends, Aug 10th &11th, 2012. pp. 275-280.

149-153

2. Chandra, S., Viladkar, M. N. and Prashant, P. N. (2008), " Mechanistic Approach for Fibre Reinforced Flexible Pavements", ASCE (10). pp.1061-1069.
3. Helwany, S., Dyer, J., and Leidy, J. (1998), "Finite Element Analysis of Flexible Pavements", Journal of Transportation Engineering, pp: 491–499.
4. Kown, J., Tutumluer, E., and Kim, M. (2005), "Mechanistic analysis of geogrid base reinforcement in flexible pavements considering unbounded aggregate quality." Proceedings of 5th International Conf. on Road and Airfield Pavement Technology, Seoul, Korea, pp: 54–63.
5. Rajesh, R. (2006), "Experimental and Analytical Study on Coir Geotextile',M.TechThesis (Un Published), University of Kerala, Trivandrum.

28.

Authors:	**Ashaar Ahmad, Syed Ali Imam, Syed Razi Haider, Zar Khitab Afridi**
Paper Title:	**Design and Study of G-Shaped Microstrip Antenna for WLAN Applications**

Abstract: This paper illustrates the usage of G shape patch antenna in WLAN applications. Due to transformation of telecommunication industry and rapid increase in usage of WLAN dual band antennas are preferred. This antenna resonates at single frequency i.e. 2.45 GHz and operates on 2.4 GHz and 5.2 GHz. This proposed antenna can be used for WLAN application worldwide. Due to efficient bandwidth and very less VSWR this antenna is preferred over many microstrip patch antennas. VSWR for 2.4 and 5.2 GHz is is 1.2 and 1.5 dB and bandwidth for 2.4 and 5.2 GHz is 50 and 72 MHz. Fabricated antenna have VSWR of 1.24 and 1.49 dB at 2.4 and 5.2 GHZ which is in standard range.

Keywords: Ansoft HFSS, Dual Band, G shaped patch, Microstrip Patch Antenna, WLAN.

References:

1. Song, C. T. P., P. S. Hall, H. Ghafouri-Shiraz, and D. Wake, \Triple band planar inverted F antennas for handheld devices," Electron. Lett., Vol. 36, No. 2, 112{114, 2002.
2. Choi, W., S. Kwon, and B. Lee, \Ceramic chip antenna using meander conductor lines,"Electron. Lett., Vol. 37, No. 15, 933{934, 2001.
3. Kuo, Y. L. and K. L. Wong, \Printed double-T monopole antenna for 2.4/5.2 GHz dual-band WLAN operations," IEEE Trans. Antennas Propagat., Vol. 51, No. 9, 2187{2192, 2003.
4. Raj, R. K., M. Joseph, B. Paul, and P. Mohanan, \Compact planar multiband antenna for GPS, DCS, 2.5/5.8 GHz WLAN applications," Electron. Lett., Vol. 41, No. 6, 290{291, 2005.
5. Liu, W. C., \Broadband dual-frequency cross-shaped slot cpw-fed monopole antenna for WLAN operation," Microwave Opt. Technol. Lett., Vol. 46, No. 4, 353{355, 2005.
6. Liu, W. C., \Broadband dual-frequency meandered cpw-fed monopole antenna," Electron.Lett., Vol. 40, No. 21, 1319{1320, 2004.
7. Indrasen Singh, Dr. V.S. Tripathi, " Microstrip Patch Antenna Applications:a Survey",Motilal Nehru National Institute of Technology Allahabad , 2011.

154-157

29.

Authors:	**Baiju B, Gokul S, Schin Sunny, Ranjith C. M, Sathyamoorthy U**
Paper Title:	**Hydrogen Petrol Mixture SI Engine**

Abstract: The threat posed by climate change and the striving for securities of energy supply are issues high on the political agenda these days. Governments are putting strategic plans in motion to decrease primary energy use, take carbon out of fuels and facilitate modal shifts. Taking a prominent place in these strategic plans is hydrogen as a future energy carrier. Energy stored in hydrogen would be available at any time and at any place on Earth, regardless of when or where the solar irradiance, the hydropower, or other renewable sources such as biomass, ocean energy or wind energy was converted. The fundamental variations in the times and places of solar energy supply and human energy demands can be overcome using hydrogen. Hydrogen gas combined with the standard air/fuel mixture increases the mileage. This form of alternative fuel is provided by a hydrogen generator mounted in the vehicle. Once set up is ready, the hydrogen gas (fuel) will be produced from water, an electrolyte compound, and electricity supplied from a battery provided. Here we are designing a mixed fuel two wheeler engie.ie in a conventional SI engine we are incorporating traces of hydrogen along with gasoline in order to minimize the consumption of gasoline as well as to increase the power of vehicle. Here in addition, a hydrogen generating unit is made to produce hydrogen .It is actually an electrolysis unit having high grade stainless steel/graphite/semiconductors as electrodes in a closed container and mixture of distilled water & suitable ionic solution(KOH or NAOH) as electrolyte. Power for electrolysis is taken from an additional battery provided (12V).This battery can be recharged from a dynamo/alternator/motor provided on the vehicle. Recharging process is in such a way that a circuit is provided which includes dynamo/alternator/motor and the battery and which completes only when the brake applies while running.ie in spite of using the energy from the bike alternator directly here waste energy is used for the process of electrolysis.

Keywords: KOH, NAOH, SI engine, Hydrogen, Hydropower.

References:

1. Delorme A, Rousseau A, Sharer P, Pagerit S, Wallner T, 2010, "Evolution of hydrogen fueled vehicles compared to conventional vehicles", SAE Paper No.01-08
2. AL Berland,M Sibulkin,C.H Yang 1983.Hydrogen combustion characteristics related to reactor accidents.
3. Levie, R. de (October 1999). "The electrolysis of water". Journal of Electroanalytical Chemistry.
4. Junzhi Zhang*, Xin Lu*, Junliang Xue*, andBos Li* Regenerative braking system for series hybrid city bus.
5. Shelef M, Kukkonen CA, 1994, "Prospects of hydrogen-fueled vehicles". Prog Energy Combust Sci; 20:139–48.
6. Romdhane Ben Slama.2012. Hydrogen production by Water electrolysis, Effects of electrodes materials,Nature on the solar water electrolysis performances.
7. L. Zhou, Y. Zhou, Int. J.Hydrogen Energy 26, pp. 597-601, 2001.Determination of compressibility factor and fugacity coefficient of hydrogen in studies of adsorptive storage.
8. Di Sarli & Di Menetto, Dipartimento di Ingegneria, Universita degli studi "Frederico II", Napoli, Italy. Study of hydrogen enriched premixed flames.
9. Utz-Jens Beister & Rudy Smaling, MTZ issue 10/2005 p.784.Hydrogen Enhanced Combustion. A romising concept for ultra-lean homogenous combustion
10. L. Bromberg, D.R. Cohn, K. Hadidi, J.B. Heywood and A. Rabinovich, MIT.Emissions reductions using hydrogen from plasmatron fuel

158-163

converters.
11. David H.kroon and Lynne M.Ernes,2007.MMO coated titanium anodes for cathodic protection.
12. Marcelo Carmo,David L,Fritz Jurgen Mergel,Detlef Stolten.A comprehensive Review on PEM water Electrolysis.
13. A Brent Strong. (3rd edition),36-37,68-72, Plastics:materials and processising
14. Baiju B,Das L M ,Gajendra Babu M K,2008,Experimental investigations on a rubber seed oil methyl ester fueled compression ignition engine.
15. Baiju B,Das LM,Gajendra babu M K,2008, The effect of using high FFA rubber seed based bio diesel with cold and hot EGR on performance and emission of CI engines.

30.

Authors: **Vivek Ware, Bharathi H. N**

Paper Title: **Decision Support System for Inventory Management using Data Mining Techniques**

Abstract: Timely identification of newly emerging trends is needed in business process. Data mining techniques are best suited for the classification, useful patterns extraction and predications which are very important for business support and decision making. Patterns from inventory data indicate market trends and can be used in forecasting which has great potential for decision making, strategic planning. Our objectives is to get better decision making for improving sale, services and quality, which is useful mechanism for business support, investment and surveillance. An approach is implemented for mining patterns of huge stock data to predict factors affecting the sale of products. For this divide the stock data in three different clusters on the basis of sold quantities i.e. Dead-Stock (DS), Slow-Moving (SM) and Fast- Moving (FM) using K-means algorithm or Hierarchical agglomerative algorithm. After that Most Frequent Pattern (MFP) algorithm is implemented to find frequencies of property values of the corresponding items. MFP provides frequent patterns of item attributes and also gives sales trend in a compact form. Clustering and MFP algorithm can generate more useful pattern from large stock data which is helpful to get item information for inventory.

Keywords: Most Frequent Patterns, Clustering, Decision Making.

References:

1. A Khan, B. Baharudin, K. A. Khan, "Mining Customer Data for Decision Making using new Hybrid Classification algorithm" in journal of theoretical and applied Information Technology Vol 27 no.1 ,15th May 2011
2. Dattatray Gandhmal, Ranjeetsingh Parihar and Rajesh Argiddi ,"An Optimized Approach to Analyze Stock market using Data Mining Technique" in International Conference on Emerging Technology Trends (ICETT) 2011
3. Mrs. Tejaswini Hilage and R. V. Kulkarni, "Review of Literature on Data Mining" IJRRAS 10 (1) , January 2012.
4. Chidanad Apte, Bing Liu,Edwin P.D, Pednault and Padhraic Smyth "Business Application of Data Mining " ,Communication of the ACM August 2002/Vol. 45, No. 8
5. http://nccur.lib.nccu.edu.tw/bitstream/140.119/35231/8/35603108.pdf
6. Abubakar, Felix, "Customer satisfaction with supermarket retail shopping", 2002.
7. Sung-Ju Kim, Dong-Sik Yun and Byung-Soo chang, "Association Analysis of Customer Services from the Enterprise Customer Management System" ,ICDM-2006.
8. Jiawan Han, Micheline Kamber "Data Mining Concepts and Techniques" 2nd edition 2004
9. Neelamadhab Padhy, Dr. Pragnyaban Mishra , and Rasmita Panigrahi, "The Survey of Data Mining Applications And Feature Scope", International Journal of Computer Science, Engineering and Information Technology (IJCSEIT), Vol.2, No.3, June 2012
10. L.K. Soon and Sang Ho Lee, "Explorative Data Mining on Stock Data Experimental Results and Findings", pringer- ADMA 2007, LNAI 4632, pp. 562–569, 2007.
11. Darken, C. Moody, J. Yale Comput. Sci., New Haven, "Fast adaptive k-means clustering" IEEE- 2002
12. Berry and Linoff, "data mining techniques: for marketing, sales and customer support", John Eilry #Sons, inc, 1997
13. Usama Fayyad, Gregory Piatetsky-Shapiro, and Padhraic Smyth, "From Data Mining to Knowledge Discovery in Databases", AI Magazine Volume 17 , Number 3, 1996
14. Shelly Gupta, Dharminder Kumar and Anand Sharma, "Performance Analysis of Various Data Mining Classification Techniques on Healthcare Data", International Journal of Computer Science & Information Technology (IJCSIT) Vol 3, No 4, August 2011
15. Er. Mamta Juneja and Er.Nikita Phulll, "Data Mining and its Scope"
16. http://iasri.res.in/ebook/win_school_aa/notes/Data_Preprocessing.pdf
17. E Balagurusamy, "Programming in C#", Second Edition, Tata Mcgraw Hill
18. Kumar Sanjeev and Shibi Panikkar, "Magic of ASP.Net with C#", Firewall Media
19. Emin Aleskerov, Bernd fieisleben and Bharat Rao, "Neural network based database mining system for credit card fraud detection", Department of Electrical Engineering and Computer Science, University of Siegen
20. http://www.microarrays.ca/services/hierarchical_clustering.pdf
21. Matt Hartely "Using data mining to predict inventory levels" , IEEE,2005
22. http://en.wikipedia.org/wiki/Data
23. Shu-Hsien Liao, Hsu-hui Ho, Hui-wen Lin, "Mining stock category, association and cluster on Taiwan stock market", Expert Systems with Applications Volume 35 , Issue 1-2 July 2008.
24. P.Thomas, Macredie "Knowledge Discovery and Data Mining" 1999.
25. Artigan, J. A. Clustering Algorithms. Ohn Wiley and Sons, Inc., New York, NY. 1975.
26. http://en.wikipedia.org/wiki/cluster_analysis, visited 2009.
27. M. Al-Noukari, and W. Al-Hussan, "Using Data Mining Techniques for Predicting Future Car market Demand" IEEE, 2008

31.

Authors: **Ramu R, A. Sukesh Kumar**

Paper Title: **Real-Time Monitoring of ECG using Zigbee Technology**

Abstract: Cardiovascular disease is one of the leading causes of death around the world. Telemedicine has a great impact in the cardiac monitoring of patients in remote environment. A wireless electrocardiograph monitoring system is implemented with Zigbee module for remote monitoring of cardiac patient. ECG Acquisition system is designed and the signals are plotted in LabVIEW. The Signal from ECG acquisition module is given to Zigbee module. The transmitted signals are then received by Zigbee Transceiver. TTL output from the receiver Zigbee module is converted to RS232 using MAX232 level converter. The serial data are then plotted in Laptop using LabVIEW.

Keywords: ECG, LabVIEW, Telemedicine, Zigbee.

References:

1. Joe Rafferty, Steve Ward, Julie Hendry and Sally Chisholm, "Cardiac Telemedicine in Primary Care," A Report for Commissioners, Buckinghamshire Chilterns University College .
2. Ramu R and Sukesh Kumar, " Transmission of Analog Signal Using Sim 900,"First International Conference on Emerging Trends in Engineering and Technology,Munnar ,October 2013..
3. Bin Yu and Lisheng Xu and Yongxu Li , " Bluetooth Low Energy based Mobile Electrocardiogram Monitoring System.,"Proceedings of the IEEE International Conference on Information and Automation, China 2012.
4. Shebi Ahammed S, Binu C Pillai, "Design of Wi-Fi Based Mobile Electrocardiogram Monitoring System on Concerto Platform," Procedia Engineering , Elsevier IConDM, 2013.
5. Alfredo I Hermandez ,Fernando Mora Guillermo Villegas, Gianfranco Passariello and Guy Carrault,"Real-Time ECG Transmission Via Internet for Nonclinical Applications," IEEE Transactions on information Technology in Biomedicine,Vol.5,No.3,2001
6. Wu Baochun, Li Min, Yang Yaning and Zhang Weiwei, "ECG Acquisition Circuit Design Based on C8051F330", Proceedings of the IEEE-EMBS International Conference on Biomedical and Health Informatics,China,2012.
7. INA321 Datasheet by Texas instruments.
8. ATMEGA328 Data Sheet by Atmel Corporation.
9. Zigbee/Xbee Data Sheet by Digi International.

32.

Authors: **T. Revathi, P. Sumathi**

Paper Title: **An Overview of Data Mining Classification Methods in Aortic Stenosis Prediction**

Abstract: There is a huge amount of data in medical science industry. But most of this data is not mined to find out the hidden information. To discover those hidden information, advanced data mining techniques are used. Models developed from these techniques are seemed to be very useful for medical practitioners to take effective decision. In this research paper data mining classification techniques Decision Tree and Support Vector Machine (SVM) are analyzed on Aortic Stenosis disease dataset. Performance of these techniques is compared by sensitivity, specificity, accuracy, error rate, True Positive Rate and False Positive Rate. As per our results error rates for Decision Tree and SVM are 0.2755 and 0.1488 respectively. Accuracy of Decision Tree and SVM are 79.05% and 85.12% respectively. Our analysis shows that among these two classification models SVM predicts Aortic Stenosis disease with least error rate and highest accuracy.

Keywords: Heart disease, Aortic Stenosis, Data Mining techniques, decision tree and support vector machine.

References:

1. Palaniappan, S.; Awang, R., "Intelligent Heart Disease Prediction System Using Data Mining Techniques". Proceedings of IEEE/ACS International Conference on Computer Systems and Applications 2008, pp. 108-115.
2. K.Srinivas, B.Kavihta Rani , A.Govrdhan , Applications of Data Mining Techniques in Healthcare and Prediction of Heart Attacks, (IJCSE) International Journal on Computer Science and Engineering Vol. 02, No. 02, 2010, 250-255.
3. Harleen Kaur , Siri Krishan Wasan and Vasudha Bhatnagar, The impact of data mining techniques on medical diagnostics, Data Science Journal, Volume 5, 19 October 2006 pp119-126.
4. Avci, E.; Turkoglu, I., "An intelligent diagnosis system based on principle component analysis and ANFIS for the heart valve diseases". Journal of Expert Systems with Application, Vol. 2, No. 1, 2009, pp. 2873-2878.
5. Asha Rajkumar, G.Sophia Reena, Diagnosis Of Heart Disease Using Datamining Algorithm, Global Journal of Computer Science and Technology 38 Vol. 10 Issue 10 Ver. 1.0 September 2010.
6. Milan Kumari, Sunila Godara, "Comparitive study of data mining classification methods in cardiovascular disease prediction", International Journal of Computer Science and Technology (IJCST) vol.2, Issue 2, june 2011, pp. 304-308.
7. Jyoti Soni, Ujma Ansari, Dipesh Sharma, Sunita Soni, "Predictive Data Mining for medical diagnosis: An overview of heart disease prediction", International journal of Computer Applications, vol. 17- no. 8, march 2011.
8. Chau, M.; Shin, D., "A Comparative Study of Medical Data Classification Methods Based on Decision Tree and Bagging Algorithms". Proceedings of IEEE International Conference on Dependable, Autonomic and Secure Computing 2009, pp. 183-187.
9. Khemphila, A.; Boonjing, V., "Comparing performance of logistic regression, decision trees and neural networks for classifying heart disease patients". Proceedings of International Conference on Computer Information System and Industrial Management Applications 2010, pp. 193 – 198.
10. Yao, Z.; Lei, L.; Yin, J., "R-C4.5 Decision tree model and its applications to health care dataset". Proceedings of International Conference on Services Systems and Services Management 2005, pp. 1099-1103.
11. Magnus Stensmo, Terrence J. Sejnowski Automated Medical Diagnosis based on Decision Theory and Learning from Cases, World Congress on Neural Networks 1996 International Neural Network society pp. 1227-1 231.
12. Han. J, Kamber, M., "Data Mining Concepts and Techniques". 2nd Edition, Morgan Kaufmann, San Francisco.
13. N. Aditya Sundar, P.Pushpa Latha, M. Rama Chandra," Performance Analysis of classification data mining techniques over heart disease data base", IJESAT, vol. 2, Issue 3, pp 470-478.
14. Ruben D. Canlas Jr., Data mining in healthcare: current applications and issues, August 2009.

173-175

33.

Authors: **M. Nazeer, R. Arun Kumar**

Paper Title: **Strength Studies on Metakaolin Blended High-Volume Fly Ash Concrete**

Abstract: The usage of blended cement is growing rapidly in construction industry due to the considerations of cost saving and environmental protection. The addition of fly ash in concrete improves certain properties such as workability, later age strength development and few durability characteristics. The major disadvantage observed in such concrete is the slower development of strength. This drawback can be addressed by adding superpozzolanic materials such as silica fume, Metakaolin and rice husk ash. This report presents the results of an experimental investigation dealing with concrete incorporating high volumes of Class F Fly Ash and Metakaolin as a partial replacement of ordinary Portland cement. Portland cement was replaced with 50% volume of cement with Class F Fly Ash, and again the remaining cement content was replaced by four different percentage of Metakaolin content 5%, 10%, 15%, and 20%. Tests were performed on fresh and hardened concrete to determine its workability and mechanical strength properties. A concrete mix of grade M30 was investigated keeping water binder ratio as 0.44 with a total cementatious material content of 399 kg/m3 of concrete. Two different curing conditions investigated are boiling and normal curing condition. Test results indicated that the use of High volumes of Class F Fly Ash and Metakaolin as a partial replacement of cement in concrete decreased its compressive strength, splitting tensile strength and modulus of elasticity, Poisson's ratio of the concrete. However, the strength properties like impact resistance, abrasion resistance of concrete was increased which may be due to the pozzolanic reaction of Fly Ash.

176-179

Keywords: metakaolin, boiling curing, high volume fly ash concrete, ternary blend

References:

1. M. J. Chinsu, "Durability Study on Metakaolin Admixed Superplasticised Concrete", M Tech Thesis, Department of Civil Engineering, T K M College of Engineering Kollam. 2007.
2. J.T. Ding, and Z. Li, "Effects of metakaolin and silica fume on properties of concrete", ACI Materials journal, Vol. 9(4), 2002, pp. 393 – 398.
3. J.M. Khatib, and J.J. Hibbert, "Selected Engineering properties of concrete incorporating slag and metakaolin", Construction and Building Materials, Vol. 19(6), 2005, pp. 460-472.
4. P.K. Mehta, (2007), High - Performance, High-volume Fly ash concrete for Sustainable Development, International Workshop on Sustainable Development and Concrete Technology.
5. N. Bouzouba, M. H. Zhang, and V. M. Malhotra, Laboratory Produced High-Volume Fly Ash Blended Cements: Compressive Strength and Resistance to the Chloride-Ion Penetration of Concrete, Cement and Concrete Research, (30), 2000, pp. 1037-1046.
6. R. Siddique , "Performance characteristics of high-volume Class F fly ash concrete", Cement and Concrete Research (34), 2004, pp. 487–493
7. H.-S. Kim, S-H. Lee, and H-Y. Moon.,"Strength properties and durability aspect of high strength concrete using Korean Metakaolin", Construction and Building Materials, Vol. 21(6), 2007, pp .1229-1237.
8. A.M. Fadzil, M.J. Megat Azmi, A.B. Badrol Hisyam, M.A. Khairun Azizi., Engineering Properties of Ternary Blended Cement Containing Rice Husk Ash and Fly Ash as Partial Cement Replacement Materials, International Conference on Construction and Building Technology, A - (10) – 2008, pp. 125 – 134.
9. IS: 12269-1987- Specification for 53 Grade Ordinary Portland Cement, Bureau of Indian Standards, New Delhi, 2000.
10. IS:383–1970 - Specification for coarse and fine aggregate from natural sources for concrete, Bureau of Indian Standards, New Delhi.
11. IS: 1199-1959, Indian standard methods of sampling and analysis of concrete, Bureau of Indian Standards, New Delhi, India.
12. IS: 516-1959, Indian standard code of practice methods of test for strength of concrete, Bureau of Indian Standards, New Delhi, India.
13. IS: 5816-1999, Indian standard splitting tensile strength of concrete - method of test, Bureau of Indian Standards, New Delhi, India.
14. ACI 544.2R – 89 – Measurement of properties of Fibre Reinforced Concrete. American Concrete Institute, Farmington Hills, MI: 2001.

34.

Authors:	**Manju Devi, Arun Kumar P. Chavan, K. N. Muralidhara**
Paper Title:	**A 9-Bit, 200MS/s Low Power CMOS Pipeline ADC**

Abstract: This paper describes 9-bit, 200MS/s Pipeline analog to digital converter implemented in 0.18µm CMOS process consuming 48.97mW power from 1.8v supply. To improve the linearity of pipeline ADC is designed which has three stages, 3-bit/stage architecture. Operational transcconductance amplifier is adopted in all pipeline stage to give good power efficiency. The converter is optimized for low voltage, low power application by optimizing opamp and 3- bit flash at circuit level.

Keywords: Operational Transconductance Amplifier (OTA), Thermometric Codes, Flash ADC, Pipeline ADC.

References:

1. Maxim Integrated, Design Support, Technical Documents, tutorial no 634 "Pipeline ADCs Come of age". [ONLINE] Availableat:http://www.maximintegrated.com/appnotes/index.mvp/id/634.
2. R. Jacob Baker, Harry W. Li, David E. Boyce, "CMOS Circuit Design, Layout, And Simulation", 3rd edition, IEEE Press, 1964
3. Philip E. Allen, Douglas R. Holberg, "CMOS Analog Circuit Design", Second Edition, Oxford University Press, 1995
4. SiddharthDevarajan, Larry Singer, Dan Kelly, Steven Decker, Abhishek Kamath, and Paul Wilkins "A 16-bit, 125 MS/s, 385 mW, 78.7 dB SNRCMOS Pipeline ADC" IEEE Journal Of Solid-State Circuits, Vol. 44, No. 12, December 2009
5. B. Murmann and B. E. Boser, "A 12-bit 75-MS/s pipeline ADC using open-loop residue amplification," IEEE J. Solid-State Circuits, vol. 38, no. 12, pp. 2040–2050, Dec. 2003.
6. J. K. Fiorenza, T. Sepke, P. Holloway, C. G. Sodini, and H.-S. Lee, "Comparator-based switched-capacitor circuits for scaled CMOS technologies," IEEE J. Solid-State Circuits, vol. 41, no. 12, pp. 2658–2668, Dec. 2006.
7. L. Brooks and H.-S. Lee, "A zero-crossing-based 8-bit 200 MS/s pipeline ADC," IEEE J. Solid-State Circuits, vol. 42, no. 12, pp. 2677–2687, Dec. 2007.
8. L. Brooks and H.-S. Lee, "A zero-crossing-based 8-bit 200 MS/s pipeline ADC," IEEE J. Solid-State Circuits, vol. 42, no. 12, pp. 2677–2687, Dec. 2007.
9. W. Yang, D. Kelly, I. Mehr,M. T. Sayuk, and L. Singer, "A 3-V 340-mW14-b 75-Msample/s CMOS ADC with 85-dB SFDR at Nyquist input,"IEEE J. Solid-State Circuits, vol. 36, pp. 1931–1936, Dec. 2001.

180-183

35.

Authors:	**G. Nageswara Reddy, S. S. Dash, S. Sivanagaraju, Ch. V. Suresh**
Paper Title:	**Economic Load Dispatch using Imperialistic Competitive Algorithm: An Effect of Control Variables**

Abstract: The operation of an electric power system is a complex one due to its nonlinear and computational difficulties. One task of operating a power system economically and securely is optimal scheduling, commonly referred to as the Optimal Power Flow (OPF) problem. Optimal power flow has become an essential tool in power system planning and operation. OPF is a typical nonlinear programming problem which consists in determining an optimal steady state operation of an electric power system. In this paper, conventional quadratic and non-convex fuel cost functions optimized while satisfying equality and in-equality constraints. The effect of control variables is identified by considering limited and all control variable cases are analyzed with the supporting numerical results on standard IEEE-14 bus and IEEE-30 bus test systems.

Keywords: Optimal power flow, Imperialistic competitive algorithm, effect of control variables, Quadratic cost, Non-convex cost.

References:

1. E.Ewald, D.W.Angland, "Regional integration of electric power systems", IEEE Spectrum, 1964, pp.96-101.
2. D.Watts, "Security & vulnerability in electric power system", NAPS 2003, 35th North American Power Symposium, University of Missouri-Rolla in Rolla, Missouri, 2003, pp.559-566.
3. Bullock, G.C., "Cascading Voltage Collapse in Tennese, August 22, 1987", Proceedings of 17th Annual Western Protective Relay Conference", Spokane, Washington, October 1990.
4. IEEE Special Publication 90TH0358-2PWR, "Voltage Stability of Power Systems: Concepts, Analytical Tools and Industry Experience",

184-190

IEEE Working Group on Voltage Stability, 1990.
5. North American Electric Reliability Council, "Survey of the voltage collapse phenomenon", 1991.
6. T. K. P. Medicherla, R. Billinton, and M. S. Sachadev, "Generation rescheduling and load shedding to alleviate line over loads: analysis", IEEE Trans. on PAS, Vol.98, No.12, 1979, pp.1876-1884.
7. T K P Medicherla, R Billinton, and M S Sachadev, "Generation rescheduling and load shedding to alleviate line over loads: system studies", IEEE Trans. on PAS, Vol.100, No.1, pp.36-42.
8. IEEE Power Engineering Society/CIGRE: "FACTS applications", IEEE service center, Piscataway, N.J., 1996. Special Issue.96TP116-0.
9. A J Wood and B F Wollenberg, "Power generation operation and control, John Wiley and Sons Inc.Singapore, 1984.
10. Irving,M.R., and Sterling.M.J.H."Economic dispatch of active power with constraint relaxation", IEE Proc.C. 1983, 130, (4), Pp.172-177.
11. Wood, A.J.,and Wollenberg, B.F.: "Power Generation, Operation And Control" (Wiley, New York, 1984).
12. Lee,K.Y.,Park,Y.M., and Ortis, M.S,: "Fuel-cost minimization for both real and reactive power dispatches", IEEE Proc. C , 1984, 131.
13. Lin,C.E., and Viviani, G.L.: "Hierarchical economic dispatch for Piece-wise quadratic cost functions", IEEE Trans.,1984. PAS-103, (6), pp.1170-1175.
14. W.G.Wood, "Spinning reserve constrained economic dispatch", IEEE Transactions on Power Apparatus and Systems, Vol. PAS-101, No.2.
15. S.M. Amado, C.C. Rebeiro, "Short-term generation scheduling of hydraulic multi-reservoir multi-area interconnected systems", IEEE Trans. On Power Systems, Vol. Pwrs-2, No.3, Aug.1987, pp.758-763.
16. Nanda, J., Kothari, D.P., and Srivastava, S.C.: "New optimum power-dispatch algorithm using Fletcher's quadratic programming method", IEE Proc.C. 1989, 136, (3), pp.153-161.
17. Berry. P.E. and Dunnett, R.M., "Contingency constrained economic dispatch algorithm for Transmission planning', IEE Proc.C, 1989, 136, (4), pp.238-244.
18. J.S.Yang, N.Chen, "Short term hydrothermal coordination using multi-pass dynamic programming'., IEEE Trans. on Power Systems, Vol.4, No.3, Aug.1989, pp.1050-1056.
19. Luo,G.X., Habibollahzadeh,H., Semylen,A., "Short-term hydrothermal scheduling, detailed model and solutions", IEEE Trans. PWRS, Vol.1, No.4, Oct.1989, pp.1452-1462.
20. K.S.Hindi and M.R.AbGhani, "Dynamic economic dispatch for large scale power systems: A Lagrangian Relaxation approach," Electrical. Pwr Syst Research., Vol.13, No.1, pp.51-56, 1991.
21. IEEE Committee Report: "Practices in the economic operation of power systems", IEEE Trans., 1971, Pas-90, pp.1768-1775.
22. Wong,K.P., and Fung,C.C:' Simulated-Annealing Based Economic Dispatch Algorithm', IEEE Proc.C, 1993, 140, (6), pp.509-515.
23. Moosa Moghimi Hadji, Behrooz Vahidi, "A Solution to the Unit Commitment Problem Using Imperialistic Competition Algorithm", IEEE Trans. Pwr Syst.,2012, Vol.27, No.1,pp. 117-124.
24. A.A. Abou El Ela, M.A. Abido, S.R. Spea "Optimal power flow using differential evolution algorithm" Electric Power Systems Research, 2010, Vol. 80, pp.878-885
25. O.Alsac, B.Stott., "Optimal Load Flow with steady state security," IEEE PES summer meeting & EHV/UHV conference., July, 1973., pp.745-751.
26. M A Abido., "Optimal power flow using Tabu search algorithm", Electric power components and systems, 2002, Vol.30, pp.469-483.

36.

Authors: **Prakash Hiremath, Shambhavi B. R**

Paper Title: **Approaches to Named Entity Recognition in Indian Languages: A Study**

Abstract: Named Entity Recognition (NER) is subtask of information extraction that seeks to locate and classify the elements in some text into pre-defined categories. NER finds its application in Natural Language Processing tasks like machine translation, question-answering systems and automatic summarization. The approaches to NER are rule based, statistics based or a combination of both. In this paper, we present a survey of these various approaches for identification of Names Entities (NE) in Indian Languages.

Keywords: Named Entity Recognition (NER), Natural Language Processing, Machine Learning

References:

1. Charles L. Wayne. 1991., "A snapshot of two DARPA speech and Natural Language Programs" in the proceedings of workshop on Speech and Natural Languages, pages 103-404, Pacific Grove, California. Association for Computational Linguistics.
2. B. D. M, M. Scott, S. Richard, and W. Ralph, "A High Performance Learning Name-finder," in Proceedings of the fifth Conference on Applied Natural language Processing, 1997, pp. 194–201.
3. J. Lafferty, A.McCallum, and F. Pereira, "Probabilistic Models for Segmenting and Labelling Sequence Data, "in Proceedings of the Eighteenth International Conference on Machine Learning (ICML-2001), 2001.
4. B. Andrew, "A Maximum Entropy Approach to NER," Ph.D. dissertation, 1999.
5. Cortes and Vapnik, "Support Vector Network, Machine Learning," 1995, pp. 273–297.
6. R. Grishman. 1995. "The NYU system for MUC-6 or Where's the Syntax" in the proceedings of Sixth Message Understanding Conference (MUC-6) , pages 167-195, Fairfax, Virginia.
7. Andrew Borthwick. 1999. "Maximum Entropy Approach to Named Entity Recognition" Ph.D. thesis, New York University.
8. Michael Fleischman, "Automated sub categorization of named entities". Proc. Conference of the European Chapter of Association for Computational Linguistic, pp 25–30, 2001.
9. Yungwei ding hsinhsi Chen and Shihchung TsaI, "Named entity extraction for information retrieval". Proc. of HLT-NAACL.
10. Kamaldeep Kaur; Vishal Gupta. "Name Entity Recognition for Punjabi Language". International Journal of Computer Science and Information Technology & Security (IJCSITS), ISSN: 2249-9555 Vol. 2, No.3, June 2012.
11. Riaz K. Rule-based named entity recognition in Urdu. In Proceedings of the Named Entities Workshop. pages 126-135.2010
12. Bhuvaneshwari C Melinamath." Rule based Methodology for Recognition of Kannada Named Entities", (IJLTET) Vol. 3 ISSN: 2278-621. March 2014.
13. Amarappa, Dr. S V Sathyanarayana. 2012. "Named Entity Recognition and Classification in Kannada Language". International Journal of Electronics and Computer Science Engineering.
14. Praneeth M Shishtla, Prasad Pingali, and Vasudeva Varma 2008 "ACharacter n-gram Based Approach for Improved Recall in Indian Language NER s" Proceedings of the IJNLP-08 Workshop on NER for South and South East Asian Languages Hyderabad, India.
15. A. Goyal, "Named Entity Recognition for South Asian Languages," in Proceedings ofthe IJCNLP-08 Workshop on NER for South andSouth- East Asian Languages, Hyderabad, India, Jan 2008, pp. 89–96.
16. Ekbal and S. Bandyopadhyay, "Named entity recognition in Bengali: A Conditional random field". Proc. ICON, pp 123–128, 2008.
17. Amandeep Kaur, Gurpreet Singh Josan and Jagroop Kaur. 2009 Named Entity Recognition for Punjabi: A Conditional Random Field Approach. In Proceedings of 7th international conference on Natural Language ProcessingICON-09. Macmillan Publishers, India.
18. Malarkodi, C S; Pattabhi; RK Rao and Sobha; Lalitha Devi.2012 "Tamil NER – Coping with Real Time Challenges". Proceedings of the Workshop on Machine Translation and Parsing in Indian Languages (MTPIL- 2012), pages 23–38, COLING 2012, Mumbai, December 2012.
19. Vijayakrishna R and Sobha L, "Domain focused Named Entity Recognizer for Tamil using Conditional Random Fields," in Proceedings of the IJCNLP-08 Workshop on NER for South and South East Asian languages, Hyderabad, India, 2008, pp. 59–66.
20. Asif Ekbal, Sivaji Bandyopadhyay. "Bengali Named Entity Recognition using Support Vector Machine" in the proceedings of the IJCNLP-

08 workshop on NER for South and South East Asian Languages, pages 51-58, Hyderabad, India.
21. Kumar N. and Bhattacharyya Pushpak. 2006. "Named Entity Recognition in Hindi using MEMM" in the proceedings of Technical Report, IIT Bombay, India.
22. G. Raju, B.Srinivasu, D. S. V. Raju, and K. Kumar, "Named Entity Recognition for Telegu using Maximum Entropy Model," Journal of Theoretical and Applied Information Technology, vol. 3, pp. 125–130, 2010.
23. Mukund Sangalikar, Shilpi Srivatsava and D.C. Kothari. "Named entity recognition System for Hindi language". International journal of Computational Linguistics Volume (2), pp 10–23.
24. Sujan Kumar Saha, Sanjay Chatterji, Sandipan Dantapat,Sudeshna Sarkar and Pabitra Mitra 2008 "A Hybrid Approach for Named Entity Recognition in Indian Languages" Proceedings of the IJNLP-08 Sorkshop on Ner for South and South East Asian Languages Hyderabad, India.
25. S.Pandian, K.A.Pavithra and T.Geetha, "Hybrid Three-stage Named Entity Recognizer for Tamil," INFOS2008, March 2008.
26. P Srikanth and Kavi Narayana Murthy 2008 "Named Entity Recognition for Telugu" Proceedings of the IJNLP-08 Workshop on NER for South and South East Asian Languages Hyderabad, India.

37.

Authors: **Divyesh Dave, Vimal Patel, Dhrumil Parikh, Sachin Prajapati, Sumaiya Patel**

Paper Title: **Working Model of Remote Controlled Hovercraft**

Abstract: In this study, mainly focus on analysis and procedure about designing and making of the working model of Hovercraft. Different criteria vital in designing procedure of the model hovercraft are theoretically calculated here. Subsequently, proper material is elected and working Hovercraft was prepared. Main problem is to create enough pressure of air cushion and that leads to decrease in accuracy and poor operation of model. Main intention of our project is to produce an amphibious vehicle that can also be operated over less perfect surfaces.

Keywords: working model, Hovercraft, Design, Performance, function, component.

References:

1. http://umpir.ump.edu.my/3745/1/EDWIN_CHAN_HANJIANG
2. http://www.hoverhawk.com/lcalc.html
3. http://www.rqriley.com/hc-calc.html
4. http://www.leanproduction.com/tpm.html
5. http://personal.osi.hu/fuzesisz/strc_eng/
6. Kofi Anguah & Nick Szapiro, (2009) Design and Construction of a Passenger Hovercraft. E90 final report
7. David D. Moran (1981) Dynamic response of hovercraft lifts fans.
8. Okafor (2013),; Development of a Hovercraft Prototype; International Journal of Engineering and Technology Volume 3 No. 3; p.no. 276-281
9. Jeffrey Schleigh (2006) Construction of a Hovercraft Model and Control of its Motion. Undergraduate report, Institute for Systems Research, Maryland.
10. Michael McPeake (2004) History of the Hovercraft.

195-201

38.

Authors: **Shivanand Pandey, Bhagirath Pandey**

Paper Title: **DC Motor Torque Control using Fuzzy Proportional-Derivative Controllers**

Abstract: This paper demonstrates the design of a fuzzy logic control system to torque control of a DC motor by using fuzzy rules in Mamdani interference system. So, as to achieve the better control performing results, fuzzy rules and fuzzy sets optimize the input parameters as well as the parameters of fuzzy logic controller, which is defined by Membership Function (MFs). By using the torque- speed characteristic of DC motor we design the simulation model which shows the optimization of torque near to ideal value as well as comparable result between the output values with its input unit step value. The numbers of rule design are much enough to minimize the ripples in its output torque signal.The mathematical modeling of proposed DC motor is also presented. To achieve effective control output the simulink software is used. This proposed paper is able to obtain results for variable load torque. This paper is also describing the comparative description of conventional PID controller technique with fuzzy logic controller technique.

Keywords: DC motor, Fuzzy logic controller, Torque control, Membership function, PID controller.

References:

1. Theodore Wildi, " Electrical Machines, Drives and Power Systems," in Ed., 6th ed., Pearson Hall,2013
2. Prof. Krishna Vasudevan, Prof. G. Sridhara Rao, Prof. P.Sasidhara Rao, "Electrical Machines I" in Indian Institute of Technology, Madras, India. pp. 1-8
3. Naveen Joy and C. K. Vijayakumari , "Direct Torque Control of BLDC motor using Fuzzy Logic in Labview", Department of Electrical Engineering Rajiv Gandhi Institute of Technology, Kottayam, Kerala, India , Volume- 2, Issue- 1, Jan.-2014
4. Zadeh L. A., "Outline of a New Approach to the Analysis of Complex Systems and Decision Processes", IEEE Transactions Systems, Man and Cybernetics, SMC-3, 1973, pp. 28-44.
5. Manafeddin Namazov and Onur Basturk, "DC motor position control using fuzzy proportional-derivative controllers with different defuzzification methods", Cumhuriyet University, Faculty of Engineering, Turkish Journal of Fuzzy Systems , May 26, 2010 , Vol.1, No.1, pp. 36-54, 2010.
6. Vikas S. Wadnerkar , Mithun M. Bhaskar, Tulasi Ram Das and A.D. Raj Kumar, "A New Fuzzy Logic based Modelling and Simulation of a Switched Reluctance Motor", Journal of Electrical Engineering & Technology Vol. 5, No. 2, pp. 276 - 281, 2010.
7. John D. Jackson. Classical Electrodynamics (Second Edition). John Wiley & Sons, New York, 1975.
8. Fuzzy Logic Toolbox user's Guide R2012b, © COPYRIGHT 1995–2012, The MathWorks, Inc. Revised for Version 2.2.16 (Release 2012b) pp. 34-36, 109-144, September 2012, Available: http:// www.mathworks.com
9. Glenn Vinnicombe, "Impulse responses, step responses and transfer functions." Part IB Paper 6: Information Engineering "LINEAR SYSTEMS AND CONTROL",pp. 3-22
10. Allan R. Hambley, "Electrical Engineering Principles and Applications," Chapter 16.
11. Giorgio Rizzoni, "Principles and Applications of Electrical Engineering," Chapter 17.
12. John Mouton, "Brushed DC Motor Basics", Part 1 in a 4 part series of web seminars on "Controlling a Brushed DC Motor using a Microcontroller", AN905 "Brushed DC Motor Fundamentals.", Available: http:// Microchip.com.
13. Luca Zaccarian, " DC motors: dynamic model and control techniques" pp. 9-15
14. 14. E.Kalika, "A High Performance Direct Torque Control of PMDC Motor Using Hybrid (GA Based Fuzzy Logic) Controller" – Springer , Power Electronics and Instrumentation Engineering Communications in Computer and Information Science Volume 102, 2010, pp. 96-99

202-207

39.	**Authors:**	**Senzota Kivaria Semakuwa, Florence Upendo Rashid**	
	Paper Title:	**Artificial Intelligence in My Eyes on the Applications to Game Design**	
	Abstract: Artificial Intelligence (AI) is the ability of a digital computer or computer-controlled robot to perform tasks commonly associated with intelligent beings. A computer game is an electronic game that involves human interaction with a user interface to generate visual feedback on a video device. Using of AI in game designing makes exciting playing strategies in game, which keeps player attracted and focused on it. Also the AI in game avoid the monotony of repetition where by the player are provided with exciting opponents, more intelligent creative that dwell the world of their games. In order to give a player good game experience, an AI is implemented to produce the illusionary effect of intelligence augments. Here in we are surveying the interaction of AI technology such as path finding and perception, neural networks, finite state machines, rule based systems and genetic algorithm, in different kind of games like strategy, action, adventure and, role playing. We provide comparison of the surveyed technologies in terms of their usability, efficiency and robustness. The survey results indicate the more interaction of finite states machines technology in game design although may not always provide the optimal solution, but it generally provide a simple solution that works. Furthermore a game object that uses an FSM can also use other techniques such as neural networks. For these advantages FSM can be used in most commercial games designing, for example Enemy Nations and Quake **Keywords:** Artificial intelligence, Game, Technologies. **References:** 1. A. Nareyek, “Game AI Is Dead. Long Live Game AI!” IEEE Computer Society, January/February 2007, Vol. 22, No. 1. 2. A. Nareyek, “Artificial Intelligence in Computer Games—State of the Art and Future Directions,” ACM Queue, vol. 10, 2004, pp.58–65. 3. B. Tracy. “Game Intelligence AI Plays Along”. Computer Power User. Volume 2, Issue 1. January 2002. pp 56-60. 4. A. Nareyek, “Computer Games—Boon or Bane for AI Research?” Künstliche Intelligenz, vol. 18, no. 1, 2004, pp. 43–44. 5. S. Bandi, M. Cavazza, I.Palmer. “Situated AI in Video Games”. University of Branford, 2009. 6. M.Morhaime, A. Adham, F. Pearce, “Sylicon and Synapse”, Feb 8, 1991 Blizzed Entertainement, Inc., 7. W. Wright, “SimCity”, 1989, Maxis. 8. K.Greg, "Black & White Review". 30 March 2001, GameSpot. 9. A.Jakulin, “Artificial Intelligence in Games:” 2003, http://www.stat.columbia.edu/~jakulin/FT,2003. 10. Z. Cai, G. Xu , Artificial Intelligence: Principles & Applications 4th Edition, , Beijing 2010 Tsinghua Univ. Press, Reprinted 2013 11. M. Tim Jones. Artificial Intelligence System Approach, John and Bartlett, 2009. 12. D. Keheo. “Designing Artificial Intelligence for Games part 1”, Feb 9, 2012, Available: https://software.intel.com. 13. D. Keheo. “Designing Artificial Intelligence for Games part 2”, Feb 9, 2012, Available: https://software.intel.com. 14. S. S. Haykin, “Neural Networks: A Comprehensive Foundation.” New York: Maxwell Macmillan International, 1994. 15. J. Manslow, “Using a Neural Network in a Game: A Concrete Example.” In M. Deloura (Ed.), Game Programming Gems 2. Hingham, MA: Charles River Media, Inc., 2001, pp. 351-357. 16. A. J. Champandard, “The Dark Art of Neural Networks.” In S. Rabin (Ed.), AI Game Programming Wisdom. Hingham, MA: Charles River Media, Inc., 2002, pp. 640-65. 17. P. Keller, “Commercial Applications, Artificial Neural Networks.” Retrieved June 5, Pacific Northwestern Laboratory. 2002, from http://www.emsl.pnl.gov:2080/proj/neuron/neural/p roducts, 1997 18. A. LaMothe, “A Neural-Net Primer.” In M. Deloura (Ed.), Game Programming Gems. Hingham, MA: Charles River Media, Inc, 2000, pp. 330-350. 19. J .Manslow, “Imitating Random Variations in Behaviour Using a Neural Network.” In S. Rabin (Ed.), AI Game Programming Wisdom. Hingham, 20. MA: Charles River Media, Inc., 2002, pp. 624-628. 21. S. Woodcock, “AI Roundtable Moderator’s Report.” Retrieved April 9, 2002, from http://www.gameai.com, 2002. 22. M. Buckland, “Genetic Algorithms in Plain English.” Retrieved March 7, 2002, from http://www.btinternet.com/~fup/ga_tutorial.html. 23. F. D. Laramee, “Genetic Algorithms: Evolving the Perfect Troll.” In S. Rabin (Ed.), AI Game Programming Wisdom. Hingham, MA: Charles 24. River Media, Inc, 2002, pp. 629-639. 25. S. Hsiung,, J. Matthews, “An Introduction to Genetic Algorithm and Genetic Programming.” Retrieved July 16, 2002, from http://www.generation5.org/ga.shtml, 2000. 26. N. Dulay, “Application of Genetic Algorithm.” Retrieved July 18, 2002, from http://www.doc.ic.ac.uk/~nd/surprise_96/journal/vol1/tcw2/article1.html, 1996. 27. N. Dulay, Genetic Algorithms. Retrieved July 18, 2002, from http://www.doc.ic.ac.uk/~nd/surprise_96/journal/vol4/tcw2/report.html, 1996. 28. G. James, “Using Genetic Algorithms for Game AI.” Retrieved July 18, 2002, from http://www.gignews.com/gregjames1.htm, 2002 29. N. Dimension, Inc. “Genetic Algorithms: Common Applications.” Retrieved July 18, 2002, from http://www.nd.com/products/genetic/apps.htm, 2002. 30. A. LaMothe, “Tricks of the Windows Game Programming Gurus.” Indianapolis, Indiana: SAMS, 1999. 31. Buckland, M. “Genetic Algorithms in Plain English.” Retrieved March 7, 2002, from http://www.btinternet.com/~fup/ga_tutorial.html, 2002. 32. M.Peter. “Interview with Gamespot” Online Magazine, March 2001 http://www.gamespot.com. 33. “Game Programming Information”, 5 May 2002, Videogiochi.net. http://www.videogiochi.net/cgi-bin/search/gamesearch.cgi?ID=938448137. 34. F. John, “AI for Games and Animation” AK Peters, 1999. 35. E. Richard, “Interview with divineorder.org”, http://www.divineorder.org 36. E. Richard. “The Future of AI in Games: A Personal View”, Game Developer Magazine, August 2001.	**208-214**
40.	**Authors:**	**Roshni Kishan, Siri A, Meghana G. R, Meghana S**	
	Paper Title:	**Embedded Spiking Neural Network**	
	Abstract: NEURAL networks are computational models of the brain. These networks are excellent at solving problems for which a solution seems easy to obtain for the brain, but requires a lot of efforts using standard algorithmic techniques. Examples of such problems are pattern recognition, perception, generalization and non-linear control. In the brain, all communication between neurons occur using action potentials or spikes. In classical neural models these individual spikes are averaged out in time and all interaction is identified by the mean firing rate of the neurons. Recently there has been an increasing interest in more complex models, which take the individual	**215-217**

spikes into account. This sudden interest is catalyzed by the fact that these more realistic models are very well suited for hardware implementations, more specifically embedded systems. In addition they are computationally stronger than classic neural networks.

Keywords: embedded systems, neural network, neurons, spikes.

References:

1. C. M. Bishop. Neural Networks for Pattern Recognition. Claren- don Press, Oxford, 1995.
2. W. Maass and C. M. Bishop. Pulsed Neural Networks. Bradford Books/MIT Press, Cambridge, MA, 2001.
3. W. Gerstner and W. Kistler. Neurons, Populations, Plasticity. Cambridge University Press, Cambridge, 2002.
4. J-Y. Mignolet, S. Vernalde, D. Verkest, and R. Lauwereins. En- abling Hardware-Software Multitasking on a Reconfigurable Com- puting Platform for Networked Portable Multimedia Appliances. In Proceedings. The 2002 International Conference on Engineer- ing of Reconfigurable Systems and Algorithms. June 2002.
5. H. Chang, L. Cooke, M. Hunt, G. Martin, A. McNelly, and L. Todd. Surviving the SOC Revolution. Kluwer Academic Pub- lishers, Dordrecht, 1999.
6. B. Gold and N. Morgan. Speech and Audio Signal Processing: Processing and Perception of Speech and Music. John Wiley and Sons, New York, NY, 2000.
7. M. S. Ahmed. Neural net based MRAC for a class of nonlinear plants. Neural Networks, 13:111–124, 2000. Spiking Neuron Models: Single
8. Biologically Sound Neural Networks for Embedded Systems Using OpenCL By István Fehérvári, Anita Sobe and Wilfried Elmenreich1.
9. Design and FPGA implementation of an embedded real-time biologyically plausible spiking neural network processor by M.J.Pearson , C.Melhuish, A.G.Pipe, M.Nibouche, I.Gilhesphy, K.Gurney, B.Mitchinson
10. Embedded spiking neural networks By Benjamin Schrauwen,Korea University, Sŏul, Seoul, South Korea [4] Embedded spiking neural networks By Chandra Mohanty

41.

Authors: **Seematai S. Patil, Koganti Bhavani**

Paper Title: **Dynamic Resource Allocation using Virtual Machines for Cloud Computing Environment**

Abstract: Cloud computing allows business customers to scale up and down their resource usage based on needs. Many of the touted gains in the cloud model come from resource multiplexing through virtualization technology. In this paper, we present a system that uses virtualization technology to allocate data center resources dynamically based on application demands and support green computing by optimizing the number of servers in use. We introduce the concept of "skewness" to measure the unevenness in the multi-dimensional resource utilization of a server. By minimizing skewness, we can combine different types of workloads nicely and improve the overall utilization of server resources. We develop a set of heuristics that prevent overload in the system effectively while saving energy used. Trace driven simulation and experiment results demonstrate that our algorithm achieves good performance

Keywords: Cloud computing, Green computing, Resource, Skewness, Virtual machine.

References:

1. M. Armbrust et al., "Above the Clouds: A Berkeley View of Cloud Computing," technical report, Univ. o California, Berkeley, Feb. 2009.
2. L. Siegele, "Let It Rise: A Special Report on Corporate IT," The Economist, vol. 389, pp. 3-16, Oct. 2008.
3. P. Barham, B. Dragovic, K. Fraser, S. Hand, T. Harris, A. Ho, R. Neugebauer, I. Pratt, and A. Warfield, "Xen and the Art of Virtualization," Proc. ACM Symp. Operating Systems Principles (SOSP '03), Oct. 2003E. H. Miller, "A note on reflector arrays (Periodical style—Accepted for publication)," IEEE Trans. Antennas Propagat., to be published.
4. "Amazon elastic compute cloud (Amazon EC2)," http://aws. amazon.com/ec2/, 2012.
5. C. Clark, K. Fraser, S. Hand, J.G. Hansen, E. Jul, C. Limpach, I. Pratt, and A. Warfield, "Live Migration of Virtual Machines," Proc. Symp. Networked Systems Design and Implementation (NSDI '05), May 2005..
6. M. Nelson, B.-H. Lim, and G. Hutchins, "Fast Transparent Migration for Virtual Machines," Proc. USENIX Ann. Technical Conf., 2005.M. Young, The Techincal Writers Handbook. Mill Valley, CA: University Science, 1989.
7. N. Bobroff, A. Kochut, and K. Beaty, "Dynamic Placement of Virtual Machines for Managing SLA Violations," Proc. IFIP/IEEE Int'l Symp. Integrated Network Management (IM '07), 2007.
8. T. Wood, P. Shenoy, A. Venkataramani, and M. Yousif, "Black-Box and Gray-Box Strategies for Virtual Machine Migration," Proc. Symp. Networked Systems Design and Implementation (NSDI '07), Apr. 2007.

218-221

42.

Authors: **Vitul Varshney, Melvin Wilson, Sakthivel Sivaraman**

Paper Title: **PID based Stabilization of Gesture Controlled Drones using HIL Simulation**

Abstract: In order to understand the balancing dynamics of a quadcopter, a hardware-in-the-loop simulation (HIL Simulation) using NI ELVIS II+ was undertaken. The purpose of this project was to implement collision avoidance on a quadcopter prototype in a controlled environment. The extra mile was run by simulating PID control for the motor actions in the balancing of the quadcopter. Three modules were developed to simulate the control, which upon implementation, provoked an angular change in the quadcopter position. Upon removal of the control, the balancing aspect comes into the picture. PID control was used to simulate the balancing procedure and its constituting effects. The project was approached with modular programming and project approach in mind to incorporate a readable, maintainable and fool-proof environment..

Keywords: Balancing, Collision avoidance, Gesture control, PID .

References:

1. Dirman Hanafi1, Mongkhun Qetkeaw1, Rozaimi Ghazali1, "Simple GUI Wireless Controller of Quadcopter," in Int. J. Communications, Network and System Sciences, 2013, 6, 52-59
2. Atheer L. Salih1, M. Moghavvemi1, Haider A. F. Mohamed, "Flight PID controller design for a UAV quadrotor" Scientific Research and Essays Vol. 5(23), pp. 3660-3667, 4 December, 2010.
3. Andrew Gallaghar "Surveillance UAV" in Worchester Polytechnic Institute, 1May, 2014

222-225

4. Manju Kurien, "Overview of different approach of PID controller tuning" in International Journal of Research in Advent Technology E-ISSN: 2321–9637.
5. Ajanta Ganguly, Abinash Banerjee Lane, Yuni Awan Wijonarko, "Design of Tuning method for PID controller using Fuzzy Logic" International Journal of Emerging trends in Engineering and Development., Volume Issue 3, Vol.5 (September 2013).
6. Damir Vrančić, "A New PID Controller Auto-tuning Method based on Multiple Integrations" J. Stefan Institute, Jamova 39, SI-1001 Ljubljana, Slovenia., submitted for publication.
7. Edwin Chobot, Daniel Newby, Renee Chandler, "Design and Implementation of Wireless Sensor and Actuator Network for Energy Measurement and Control at Home" International Journal of Embedded Systems and Applications (IJESA) Vol.3, No.1, March 2013.
8. T. Jirinec, "Stabilization and control of unmanned quadcopter," Master's thesis, CZECH TECHNICAL UNIVERSITY IN PRAGUE, 2011.
9. K. Ogata, Modern Control Engineering. Prentice Hall - Br, 1999.
10. R. H. B. Richard C. Dorf, Modern Control Systems. Addison-Wesley, 1995
11. R. D. H. Charles L. Phillips, Basic Feedback Control Systems, 1990.
12. Cooper Bills, Arjun Prakash, "Vision-based obstacle detection and avoidance," submitted for publication.

43.

Authors: **S. Poongothai, N. Sridhar, R. Arun Shourie**

Paper Title: **Change Detection of Land use/ Land Cover of a Watershed using Remote Sensing and GIS**

Abstract: This study reveals to identify the changes of Land Use/Land Cover of the Kiliyar sub-watershed of Tamilnadu. In this study, Kiliyar sub-watershed is chosen as study area which is located partly in Thiruvannamalai and Kanchipuram districts. The objectives of the study are to prepare temporal Land Use/Land Cover maps of the study area to analyze the nature and extent of Land Use/Land Cover changes of the study area and to identify the major components those promote the trend changes in the Land Use/Land Cover. Satellite imageries and toposheets are collected from IRS, Anna University. Both satellite imageries and toposheets are georeferenced to get the Land Use/Land Cover maps for different years (1995, 2003 and 2009) of the study area. The digitization of maps was done using ArcGIS (version 9.3) software. The change detection of LU/LC of the study area are analysed and compared. The results are presented spatially as well as graphically by GIS maps and pie-charts. From this study it is inferred that there are significant changes in wasteland, forest and water bodies in the study area. It is necessary to conserve forest and water bodies of the study area for sustainable development. This study will be useful for efficient watershed management.

Keywords: Arc GIS, Land Use/ Land Cover, Watershed , Toposheets.

References: **226-230**

1. Anil.N.C and Jaishankar.G (2011), Studies on Land Use/Land Cover and change detection from parts of South West Godavari District, A.P – Using Remote Sensing and GIS Techniques, J. Ind. Geophys. Union, Vol.15, No.4, pp.187-194.
2. Kiran.V.S.S (2013), Change Detection in Land use/Land cover Using Remote Sensing & G.I.S Techniques: A Case Study of Mahanadi Catchment, West Bengal, International Journal of Research in Management Studies (IJRMS), Vol. 2, No. 2.
3. Kuldeep and Kamalesh (2011) Land Use / Land cover change detection in Doon valley (Dehradun Tehsil), Uttarakhand: using GIS& Remote Sensing Technique, International Journal of Geomatics & Geosciences. 2011, Vol. 2 Issue 1, pp.34-41.
4. Manonmani.R and Mary Divya Suganya (2010),Remote Sensing and GIS Application In Change Detection Study In Urban Zone Using Multi Temporal Satellite International Journal of Geomatics and Geosciences ,Volume 1, No 1.
5. Manish K Tiwary and Aruna Saxena (2011, Change Detection of Land Use/ Land cover Pattern in an Around Mandideep and Obedullaganj Area, Using Remote Sensing and GIS, International Journal of Technology And Engineering System(IJTES):Jan –March 2011- Vol.2.No.3.
6. Nagarajan.N and Poongothai.S (2012), Effect of Land Use/ Land Cover Change Detection of Ungauged Watershed, World Applied Sciences Journal 17 (6): pp.718-723.
7. Nagamani.K and Ramachandran.S (2003), Land use /Land cover in Pondicherry Using Remote Sensing and GIS', Proceedings of the Third International Conference on Environment and Health, Chennai, India, 15-17 December, 2003. Chennai, Department of Geography, University of Madras and Faculty of Environmental Studies, York University. pp 300 – 305.
8. Prabaharan.S and Srinivasa Raju.K (2010), Remote Sensing and GIS Applications on ChangeDetection Study in CoastalZone Using Multi Temporal Satellite Data, International Journal of Geomatics and Geosciences ,Volume 1, No 2.
9. Symeonakis.E and Koukoulas.S (2009), A Land use Change and Land Degradation Study in Spain and Greece Using Remote Sensing and GIS, J. Ind. Geophysics. Union, Vol.14, No.4, pp.180-190.

44.

Authors: **T. Subbulakshmi, B. Vidivelli**

Paper Title: **Mechanical Properties of High Performance Concrete in Corporating with Quarry Wastes**

Abstract: Concrete is a stone like material obtained by designing a carefully proportioned mixture of cement, sand and gravel or other aggregates and water to harden in forms of the shape and dimensions of the desired structure. A High performance concrete is something which demands much higher performance from concrete as compared to performance expected from routing concrete. Use of chemical admixtures reduces the water content, thereby reducing the porosity within the hydrated cement paste. The demand for natural sand in the construction industry has consecutively increased which has resulted in the reduction of sources and an increase in price. In such a situation the quarry dust can be an economical alternative to the river sand. Therefore the quarry dust should be used in construction works, then the cost of construction would be saved significantly and the natural resources would be used efficiently. In this study, I have obtained the quarry dust material sample from the source of Thiruvakkarai and perumukkal source from Villupuram district. The scope of the present study is to investigate the effect of quarry dust towards the performance of High performanceconcrete. An effort has been made to focus on the mechanical properties of High performance concrete made with quarry dust material. This paper presents the results of a study to use quarry dust in concrete as a partial replacement of sand. The strength characteristics such as compressive strength and flexural strength were investigated to find the optimum replacement of quarry dust. The mechanical properties of High performanceconcrete with quarry dust at the replacement levels of 0%, 50%, and 100% were studied at 3 days, 7 days, 14 days, 28 days and 60 days of curing. From the studies contained, it was observed that quarry dust plays a vital role in improving the strength of concrete. The performance of concrete ratio and quarry dust replacement level on the compressive strength of quarry dust concrete was investigated.

Keywords: High performance Concrete, Quarry dust, Strength, Workability, Mechanical properties.

231-236

References:

1. Chaturanga Lakshmi Kapugamage, Aruna Lal Amarasiri, Wiranjith Priyan Solomon Dias, Dissanayak Mudyanselage Chandani Shyamali Damayanthi Bandara, Haniffa Mohamed riyaz, Patabandige Sumudu Prasanna Bahdusena, "Optimizing concrete mixes by concurrent use of fly ash and quarry dust", Holcim Lanka (Pvt) Ltd, 2008.
2. Safiuddin. Md., Raman. S.N., Zain. M.F.M., "Utilization of quarry waste fine aggregate in concrete mixtures", Journal of Applied sciences research, vol.3, 2007, pp. 202-208.
3. Nagabhushana, Sharada Bai. H, "Use of crushed rock powder as replacement of fine aggregate in mortar and concrete", Indian journal of science and technology, vol. 4, August 2011.
4. Palaniraj. S, "Manufactured Sand", International conference on recent trends in concrete technology and structures, Coimbatore, December 2006.
5. Revathi. V, Narasimha. V.L., Jayanthi. S, "Studies on the performance of quarry waste in flowable fly ash-gypsum slurry", Modern applied sciences, vol. 3, February 2009.
6. Ilangovan. R, Nagamani. K, Kumarasamy. K, "Studies on strength and behavior by using crushed rock dust as fine aggregate", New construction materials, October 2006.
7. Raman. S.N., Ngo. T, Mendis. P, Mahmud. H.B., "High-strength rice husk ash concrete incorporating quarry dust as a partial substitute for sand", Construction and building materials, 2011.
8. Rana Burhan Abdurrahman Alshahwany, "Effect of Partial replacement of sand with limestone filler on some properties of normal concrete", 2010.
9. Mattur. C. Narasimhan, Patil. B.T., Performancce of concrete with quarry dust as fine aggregate – An experimental study", New construction materials, September 1999.
10. Prakash Rao. D.S., Giridhar Kumar. V, "Investigations on concrete with stone crusher dust as fine aggregate", The Indian concrete journal, July 2004.
11. Ilangovan. R, Mahendran. N, Nagamani. K, "Strength and durability properties of concrete containing quarry rock dust as fine aggregate", ARPN Journal of Engineering and applied science, Vol. 3, October 2008.
12. Sahu. A.K, Sunil kumar and Sachan. A.K, "Crushed stone waste as fine aggregate for concrete", The Indian Concrete Journal, January 2003, pp. 845-848.
13. Manasseh JOEL, "Use of crushed granite fine as replacement to river sand in concrete production", Leonardo Electronic Journal of practices and Technologies, December 2010.
14. Mahendra R. Chitlange and Prakash S. Pajgade, "Strength appraisal of artificial sand as fine aggregate in SFRC", ARPN Journal of Engineering and applied sciences, vol. 5, October 2010.
15. Krishnamoorthi. A, Mohan Kumar. G, "Preliminary study on quarry dust concrete", Proceedings of the seventh structural engineering convention, " International Journal of Civil and Structural Engineering, Vol. 1, No. 3, 2010.
16. Nagaraj. T.S., "Proportioning concrete mix with rock dust as fine aggregate", CE and CR journal, pp 27-31.
17. Borge Johannes Wigum, Svein Willy Danielsen, "Production and utilization of manufactured sand", SINTEF Building and Infrastructure, October 2009.
18. Shetty. M.S., Concrete Technology", Theory and practice, S. Chand and company Ltd, New Delhi, 2010.
19. Nadgir. N.S., Bhavikatti. S.S., "Stone quarry dust – An alternative for sand in concrete", Second national conference on materials and structural, December 2007.
20. Zain. M.F.M., Safiuddin. M and Yusof. K.M., "A study on the properties of freshly mixed high performance concrete", Cement and concrete research, vol. 29, October 1999, pp. 1427-1432.
21. Ho. D.W.S., Sheinn. A.M.M., Ng. C.C., Lim. W.B., Tam. C.T, "Use of quarry dust for Self-compacting concrete applications for Singapore", Proc. 26th Conference on Our World in Concrete and Structures,Singapore, CI-Premier Pte Ltd, Singapore, 2001, pp.293-399.
22. Shahul Hameed. M, Sekar. A.S.S., "Properties of green concrete containing quarry rock dust and marble sludge powder as fine aggregate", ARPN Journal

Authors:	**G. Praveen Kumar, S. Palanivelraja**	
Paper Title:	**Dispersion Modelling of SO2 Emission from a Coal Fired Thermal Power Plant in Dadri, Uttar Pradesh**	

45.

Abstract: Ambient air quality management in any industrial area is a prime concern in India. High concentrations of ambient sulfur dioxide (SO2) in many Indian places are responsible for non-compliance of ambient air quality standards. Dispersion modeling finds an important tool to simulate the ambient air quality of a region and to predict the ground level concentration of SO2 under various scenarios. National Thermal Power Plant Corporation in Dadri region (NTPC) is chosen in the present investigation for the application of a widely used industrial source complex – short term version 3 (ISCST3) model to predict the ground level concentration of SO2. Objective of this study is to stimulate the dispersion modeling of SO2 emission from the coal-fired Thermal Power Plant.

Keywords: Sulphur Dioxide, Spatial Pollution Rose dispersion pattern

References:

1. Alam, M.J.B., Ralaman, M.H., and Goyal, S.K.,(1999). " Pollutant level at roadside of Dhaka city". Indian journal of environmental protection, 19 (3), pp: 161-165.
2. Chandra sekar, V., 1989. " Monitoring of respirable dust at work environment ". Indian journal of Environmental protection, (2), pp: 92-95.
3. Chandrasekaran, G.E., Ravichandran, C., and Chandramohan, A., 1988. "A short Report on ambient air quality in the vicinity of a cement plant at Dalmiapuram". Indian journal of Environmental protection, 18, pp: 7-9.
4. Gupta, I., Sing, T,B., and Gupta, D., 1998. " Ambient air quality of Paonta Sahib with reference to SPM and oxides of nitrogen". Indian journal of Environmental protection, 18, pp: 112-114.
5. Kamalak kannan, G., 1994. " Ambient air quality in Chitrakoot". Indian journal of Environmental protection, 14 (2), pp: 429-432.
6. Mandal, S., Mariappan G.Jeba Rajasekar, R.V., Air quality at various part of Calcutta city". Indian Journal of Environmental protection, 20(2), pp:6-10.
7. Meenambal, T., and Akil, K., 2000. "Ambient Air Quality at selected sites in Coimbator city". Indian Journal of Environmental protection, 20,pp:49-58.
8. Ravichandran, C., and Srikanth, S., 1997. "Ambient Air quality of Tiruchirapalli". Indian Journal of Environmental protection, 18(6), pp: 440-442.
9. Ravichandran. C., Chandrasekaran, G.E., 2000. Indian Journal of Environmental protection, 21(3), pp:214-215.
10. Saini R.S., Dadhwal., and Sujata Jaswal., 1994. "Deteriorating Air Quality in Chandigarh: A study on Levels of Suspended Particulate Matter in the City". Indian Journal of Environmental Protection, 14, pp: 700-702.
11. Sharma Mukesh., Kiran YNVM., Shandilya Kanshik, K., 2003. "Investigations into Formation of Atmospheric Sulfate under High PM10 Concentation". Atmospheric Envrionemnt, 37(14), pp: 2005-2013.
12. Sidharatha., Goyal, P., and Bandyopadhhyay, T.K., 1999. "An Assessment of Air Pollution in Agra using Cleaner fuels in industrial and Domestic sectors". Indian Journal of Environmental protection, 19, pp:512-518.

237-241

13. Tripathy, A.K., and Panigrahi, G.D., 2001" Air quality Indian and its variation in coastal belt of Ganjam district". Indian Journal of Environmental protection, 21(3), pp:206-209.
14. Central Pollution Control Board (CPCB), 2001. Pollution Control Acts, Rules and Notification Issued the reunder, Pollution Control Law Series: PCLS/02/1992 (5th Edition), Central Pollution Control Board, Ministry of Environment & Forests, Government of India, New Delhi, 897 pp.
15. Sharma S, Chandra A (2008) Simulation of air quality using an ISCST3 Dispersion Model. CLEAN Soil Air Water 36:118–124.

46.

Authors: **Seema Dev Aksatha D, Lalitha T**

Paper Title: **A Comprehensive Overview on Manet**

Abstract: Mobile Adhoc NETwork (MANET) is a collection of mobile nodes that dynamically form a temporary network and are capable of communicating with each other without the use of a network infrastructure or any centralized administration. We present in this paper, the history of MANET, characteristics, challenges (issues) involve in MANET and its some applications.

Keywords: Mobile Ad Hoc Networks (MANET), history, characteristics, challenges in MANET, applications.

References:

1. Dr. Torsten Braun, Marc Heissenbüttel, "Performance Comparison Of MANET Routing Protocols In Different Network Sizes",2003.
2. S. Basagni, I. Chlamtac, V.R. Syrotivk, B.A. Woodward,A distance effect algorithm for mobility (DREAM), in: Proceedings of the Fourth Annual ACM/IEEE International Conference on Mobile Computing and Networking (Mobicom98), Dallas, TX, 1998.
3. Eichler, Stephan U., "Challenges of Secure Routing in MANETs: A Simulative Approach using AODV-SEC", Oct. 2006,IEEE International Conference on Mobile Adhoc and Sensor Systems (MASS).
4. B. Bellur, R.G. Ogier, F.L Templin, Topology broadcast based on reverse-path forwarding routing protocol (tbrpf)in: Internet Draft, draft-ietf-manet-tbrpf-06.txt, work in progress, 2003.
5. T.-W. Chen, M. Gerla, Global state routing: a new routing scheme for ad-hoc wireless networks, in: Proceedings of the IEEE ICC, 1998.
6. C.-C. Chiang, Routing in clustered multihop mobile wireless networks with fading channel, in: Proceedings of IEEE SICON, April 1997, pp. 197–211.