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1.

Authors: S. Meenakshi, D. Manimegalai, R. Sivasankari

Paper Title: A High Power Single to Three Phase Converter for Renewable Application

Abstract: The matrix converter has many advantages in wind power system applications. Matrix converter is compact and highly efficient because it directly converts generated power from AC generator to AC grid without intermediate DC bus while conventional back-to-back converter systems requires many electrolytic capacitors in DC link bus which are bulky and have short life-time. Matrix converter has both motoring and regenerative power flow keeping low harmonics current in grid. It also can provide reactive power to the grid, which is important characteristic for wind farms to stabilize power system during and after grid failure. In this paper, high power matrix converter is introduced for renewable applications. Major technical features and advantages are described. Experimental results with a PM generator show good feasibility for the renewable applications.

Keywords: DC, AC.

References:

1. L.Gyugyi and B.R.Pelly, Static power frequency changers: Theory, performance and application. New York: Wiley, 1976.
2. M.Venturini and A.Alesina, "The generalized transformer: A new bidirectional sinusoidal waveform frequency converter with continuously adjustable input power factor," in Proc. IEEE PESC 1980, pp. 242-252.
3. A.Zuckerberger, D.Weinstock and A.Alexandrovitz, "Single-phase matrix converter," in Proc. Inst. Electrical Engineering Electric Power Application, 1997, Vol. 144, pp. 235-240.
4. Mohammed Noor, Siti Zaliha, M.K.Hamzah, R.Baharom, "A new single-phase inverter with bidirectional capabilities using SPMC", IEEE PESC 2007, pp. 464-470.
5. R.Baharom, Hasim M.K.Hamzah, Omar, "A new single-phase controlled rectifier using SPMC," IEEE PECon 2006, pp. 453-458.
6. R.Baharom, R.Hamzah, K.S.Hamzah, M.K.Muhammad, "Boost rectifier using SPMC", IEEE AECon 2008, pp.2205-2210.
7. R.Baharom, R.Hamzah, K.S.Hamzah, M.K.Saparon, "SPMC operating as buck and boost rectifier", IEEE AECon 2009, pp.3338-3342.
8. Z.Idris, M.K. Hamzah and M.F. Saidon, "Implementation of SPMC as a direct ac-ac converter with commutation strategies," IEEE PESC 2006, pp. 2240-2246.
9. A.K.Gola and V.Agarwal, Implementation of an efficient algorithm for a SPMC," J. Power Electron, Vol. 9, No.2, pp. 198-206, March 2009.
10. Y.Tang, C.Zhang and S.Xie, "Single phase four switches Z-source ac-ac converters," in Proc. IEEE APEC 2007, pp. 621-625.
11. Y.Tang, S.Xie and C.Zhang, "Z-source ac-ac converters solving commutation problem," IEEE Trans. Power Electron, Vol. 22, No. 6, pp. 2146-2154, Nov. 2007.
12. X.P.Fang, Z.M.Qian and F.Z.Peng, "Single phase Z-source PWM ac-ac converters," IEEE Power Electron. Vol. 3, No.4, pp. 121-124.

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2.

Authors: K. S. Prabhakar, N. Sathya, B. Subhashini

Paper Title: Updating of Road Network Using Image Processing and Remote sensing Techniques

Abstract: The study utilizes the development of remote sensing techniques to use the satellite imageries to constantly monitoring the state of road networks and also provides the tool to map these road networks and even plan for new ones. In this context, the objective of this study is to update the road network map of Tirunelveli city, located at the Tamil Nadu, India. This study uses the semi-automatic method to extract the road network from satellite imageries. Road mask is defined in this research as a mask of road pixels, which are discriminated from others using commercial remote sensing software. Road seed is defined in this research as a directional point, indicating that a road is passing through the point along the direction. Road seeds are extracted from edge pixels. Road line extraction is conducted in a semi-automatic way by using Mean Shift Algorithm. The extracted road networks from the satellite imagery will be compared with the existing topographic and roadmaps by doing overlay process. Then the changes will be identified and analyzed. Many new roads which are not present in the existing roadmap will be updated and a new road network map could be obtained to utilize for the further planning and development of the city.

Keywords: GIS, Remote Sensing, Mean Shift Algorithm, Semi-automatic road network extraction, High resolution satellite image, PAN, IRS.

References:

1. LeilaMohammadnia and Jalal Amini (2012),"An Optimized Model for Linear Feature Extraction from Satellite Image", International Journal of Applied Physics and Mathematics, Vol. 2, No. 5.
2. F. S. P. de Castro , J. A. S. Centeno (2010) "Satellite Data Classification Accuracy Assessment Based from Reference Dataset", In the Int. Journal of Computer and Information Science and Engineering, Vol. 2, No.1, pp. 96-102.
3. DChutia and DK Bhattacharyya (2010), "An Efficient Approach For Extraction Of Linear Features From High Resolution Indian Satellite Imageries", International Journal on Computer Science and Engineering, Vol. 02, No. 04, 1223-1227.
4. Hongbin Ma Yahong Zhao Yongsheng Chen (2008)"Road extraction from high resolution remote sensing image based on mathematics morphology", Vol. 71, 700-727.
5. Xiangyun Hu and Vincent Tao (2007)"Automatic Extraction of Main Road Centrelines from High Resolution Satellite Imagery Using Hierarchical Grouping"Vol. 73, No. 9, pp. 1049–1056.
6. Joel I.Igbokwe (2005) "Mapping of Regional Transportation Network with Medium Resolution Satellite Imagery", 3rd FIG Regional Conference Jakarta, Indonesia.
7. Huijing Zhao, Jun Kumagai(2004), "Automated Road Extraction from High Resolution Multispectral Imagery", Journal of Photogrammetric Engineering & Remote Sensing, Vol.70, No.12, pp. 1405–1416.
8. J.B.Mena and J.A. Malpica (2003) "An automatic method for road extraction in rural and semi-urban areas starting from high resolution satellite imagery", Department of Mathematics (Geodesy), Polytechnic School, Alcala University.
9. H. Hasegawa (2003),"Semi-Automatic road Extraction algorithm from IKONOS images using template matching", Proc. 22nd Asian Conference on Remote Sensing, pp 1209-1213.
10. VandanaShukla and R.ChandraKanth (2002), "Semi-Automatic Road Extraction Algorithm for High Resolution Images Using Path following Approach", Vol. 53, pp. 119–126.

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3.	**Authors:**	**K. R. Sugavanam, R. Senthil Kumar, S. Sri Krishna Kumar, A. Haswinchitra, R. Rohini**	
	Paper Title:	**Cost Optimization In Dc Solenoid Valve Used In Air Braking By Replacing Copper Winding Wire To Aluminum**	
	Abstract: Solenoid valves are used in air braking system in heavy vehicles. This is essentially used to prevent skidding in vehicles. Traditionally the coil uses copper wounded coils for producing the working flux for plunger attraction. Recent Cu price increases motivate careful examination of approaches to minimize Cu use. Approaches that can reduce Cu use without increasing losses include careful winding design, trading winding volume for core volume; replacing Cu with Al. Al wire is particularly attractive. The cost of Al is lower than it might appear from the cost per unit mass when the much lower density of Al is also considered, and the disadvantage of higher resistivity becomes less important. This paper shows the design details of a solenoid valve with aluminum wiring along with the advantages and disadvantages of copper and aluminum. It also includes the testing and performance results of aluminum air solenoid. **Keywords:** Solenoid valve, air braking system, Standard wire gauge, actuation, Retraction, on leak test, off leak test, endurance test. **References:** 1. Aluminum Windings and Other Strategies for High-Frequency Magnetics Design in an Era of High Copper and Energy Costs by C. R. Sullivan Found in IEEE Applied Power Electronics Conference, Feb. 2007,pp. 78–84. 2. Wikipedia http://en.wikipedia.org/wiki/Air_brake_(road_vehicle) 3. WABCO INDIA LTD. http://www.wabco-auto.com/ 4. JALAN WIRES PVT.LTD http://www.jalanwires.com/ 5. http://www.turkkablo.com/ialumin.htm 6. PERFECT WIRE INDUSTRIES http://www.perfectwires.com/copper-winding-wires.htm 7. Selection of copper against aluminium Windings for distribution transformers J.C. Olivares-Galva´n1 F. de Leo´n2 P.S. Georgilakis3 R. Escarela-Pe´rez1. Published in IET Electric Power Applications Received on 24th June 2009: 10.1049/iet-epa.2009.0297 ISSN 1751-8660	**12-15**
4.	**Authors:**	**E. D. Ansong, D. Damoah, J. B. Hayfron-Acquah, Amponsah-Kaakyire K, G. Nagappan**	
	Paper Title:	**Internet Phishing and Current Trend**	
	Abstract: E-commerce has made it so convenient to do business from almost anywhere and at any time. With the rising popularity and use of e-commerce increases the number and techniques of cybercrime relating to business. But of what benefit is e-commerce if it is insecure from criminals? Phishing is the act of stealing credentials from people through electronic means by posing as a legitimate body the victim has a connection with whilst the attacker really has no such identity. Phishing has caused great losses to businesses and some individuals. In this paper, phishing techniques and a few counter measures will be discussed. This is to raise people's awareness about phishing scams to enable them identify and combat such scams. **Keywords:** Techniques of cybercrime relating to business, E-commerce, Phishing is the act of stealing credentials. **References:** 1. Anti-Phishing Workgroup (APWG). (2013, 1st Quarter). Phishing Activity Trends Report. Retrieved from http://www.apwg.org 2. Junxiao, S., & Sara, S. (2012). Phishing. Retrieved from http://www.cs.arizona.edu/~collberg/Teaching/466-566/2012/Resources/presentations/2012/topic5-final/report.pdf 3. Kruegel, C., & Kirda, E. (2005). Protecting Users Against Phishing Attacks. The Computer Journal Vol. 00 No. 0. Retrieved from http://www.cs.ucsb.edu/~chris/research/doc/cj06_phish.pdf 4. Moore, T., & Clayton, R. (2009). Evil Searching: Compromise and Recompromise of Internet Hosts for Phishing. Retrieved from http://www.cl.cam.ac.uk/~rnc1/fc09evil.pdf 5. Wikipedia. (2013). Phishing. Retrieved from Wikipedia: http://en.wikipedia.org/w/index.php?title=Phishing&oldid=484977983,%202012#Recent_phishing_attempts	**16-17**
5.	**Authors:**	**Nidhi, Varun Bhardwaj**	
	Paper Title:	**Lung Image Segmentation Using Rotation Invariance and Template Matching**	
	Abstract: The work aims at using the rotation invariant feature and gray scale invariance feature as basis for template matching for identification of nodules of various sizes and texture. The structural textures so obtained are used to describe statistical feature called variance which provide efficient segmentation of lung nodules and helps in clear visualization of nodule boundaries which is important for doctors for analyzing the disease effects. The segmented image so obtained showed all the nodules clearly but the nodules that benign cannot be separated or identified by segmentation. To identify the nodule so obtained the different size templates of nodules were described to identify nodules of particular size and texture. The LBP variance descriptor provided the texture and LBP rotation invariance allowed nodule to be detected irrespective of the orientation of input image. **Keywords:** LBP. **References:** 1. L. Ries et al. SEER Cancer Statistics Review 1973{1996. National Cancer Institution, Bethesda, MD, 1999. 2. Shodayu Takashima et al, "Indeterminate Solitary Pulmonary Nodules Revealed at Population-Based CT Screening of the Lung: Using First Follow-Up Diagnostic CT to Differentiate Benign and Malignant Lesions." ,AJR 2003; 180:1255-1263 3. http://www.radiologyassistant.nl/en/460f9fcd50637 4. P.R. Hill, D.R. Bull, C.N. Canagarajah, "Rotationally invariant texture features using the dual-tree complex wavelet transform", Proc. Int'l Conf. Image Process., vol. 3,IEEE, Vancouver, BC, Canada, 2000, pp. 901–904. 5. Edward H.S. Lo, Mark R. Pickering, Michael R. Frater, John F. Arnold," Image segmentation from scale and rotation invariant texture	**18-23**

features from the double dyadic dual-tree complex wavelet transform", © 2010 Elsevier, accepted 5 august 2010
6. Timo Ojala, Matti PietikaÈ inen, Senior Member, IEEE, and Topi MaÈenpaÈa suggested in 2002, "Multiresolution Gray-Scale and Rotation Invariant Texture Classification with Local Binary Patterns" july 2002
7. Zhenhua Guo,LeiZhang,DavidZhang," Rotation invariant texture classification using LBP variance (LBPV) with global matching", Biometrics Research Centre, Department of Computing, The Hong Kong Polytechnic University, Hung Hom, Kowloon, Hong Kong, China, Pattern Recognition 43 (2010) 706–719
8. Timo Ojala, Matti Pietika¬inen,"Unsupervised texture segmentation using feature distributions", Machine Vision and Media Processing Group, Infotech Oulu, University of Oulu, FIN-90570 Oulu, Finland ,Received 19 December 1997; in revised form 24 February1998
9. http://imaging.cancer.gov/programsandresources/informationsystems/lidc
10. Timo Ojala, Matti PietikaÈ inen Senior Member, IEEE, and Topi MaÈenpaÈa,"Multiresolution Gray-Scale and Rotation Invariant Texture Classification with Local Binary Patterns", Pattern Recognition 49 (2010)
11. Hae Yong Kim,"Rotation-Discriminating Template Matching Based on Fourier Coefficients of Radial Projections with Robustness to Scaling and Partial Occlusion", Escola Politécnica, Universidade de São Paulo Av. Prof. Luciano Gualberto, tr. 3, 135, São Paulo, SP, 05508-010, Brazil.
12. http://en.wikipedia.org/wiki/Sum_of_absolute_differences
13. http://en.wikipedia.org/wiki/Cross-correlation
14. en.wikipedia.org/wiki/Accuracy_and_precision
15. http://en.wikipedia.org/wiki/Sensitivity_and_specificity
16. Messay T, Hardie RC, Rogers SK," Computationally efficient CAD system for pulmonary nodule detection in CT imagery", Med Image Anal. 2010 Jun;14(3):390-406. Epub 2010 Feb 19 (downloaded from: http://www.ncbi.nlm.nih.gov/guide/).

6.

Authors:	**Himanshu Saini, Rajarshi Mahapatra**
Paper Title:	**Implementation and Performance Analysis of AODV Routing Protocol in VANETs**

Abstract: Vehicular Ad Hoc Network (VANET) is a sub class of Mobile Ad Hoc Networks (MANET). VANET provides wireless communication among vehicles and vehicle to road side equipments. The communication between vehicles is used for comfort, safety and for entertainment as well. The performance of communication depends on how better the routing takes place in the network. There are many routing protocols that have been proposed and assessed to improve the efficiency of VANET. In this paper, simulation of AODV routing protocol is done on simulators SUMO, MOVE and NS2. MOVE tool is an open source micro-traffic simulator which used along with SUMO to generate real world mobility models for VANET. Based on the simulation results performance of AODV is analyzed with respect to various parameters like Throughput, Packet drops etc. and graphs were plotted using MATLAB for evaluation.

Keywords: AODV, MOVE, SUMO, NS-2, MATLAB.

References:

1. M. Abolhasan, T. Wysocki and E. Dutkiewicz,"A review of routing protocols for mobile ad hoc networks,"Ad Hoc Networks, vol.2, no.1, pp.1-22, Jan.2004.
2. Kapil Bhagchandani, Yatendra Mohan Sharma, "Exploration of VANET Mobility Models with New Cluster Based Routing Protocol",International Journal of Soft Computing and Engineering (IJSCE), ISSN: 2231-2307, Volume-2, Issue-6, January 2013.
3. Marwa Altayeb,Imad mahgoub,"A Survey of Vehicular Ad hoc Networks Routing Protocols", International Journal of Innovation and Applied Studies, ISSN 2028-9324, Vol. 3,No.3, pp.829-846, July 2013.
4. Lee, Kevin C.,Uichin Lee, and Mario Gerla.,"Servey of Routing Protocols in Vehicular Ad Hoc Networks,"Advances in Vehicular Ad-Hoc Networks: Developments and challenges references, IGI Global, 2010, pp.149-170, 25 Mar 2013.
5. Subir Kumar Sarkar, T.G Basavaraju, C Puttamadappa, Ad Mobile Wireless Networks, 2008.
6. C.perkins, E. Royer " Ad hoc on demand Distance vector routing"IETF, RFC 3561, 2003
7. Abolfazl,Akbari,Mehdi soruri and Khosrozadeh "A New AODV routing protocol in Moile Adhoc Networks" World Applied Sciences Journal 19 (4): 478-485, ISSN 1818-4952,2012
8. NS2. Network simulator - ns-2. Available at http://nsnam.isi.edu/nsnam/index.php/Main_Page}, 2013.
9. SUMO. Simulation of urban mobility. Available at http://sumo.sourceforge.net/, 2013.
10. Feliz Kristianto Karnadi, Zhi Hai Mo,Kun-chan Lan "Rapid Generation of Realistic Mobility Models for VANET" Available at:http://www.csie.ncku.edu.tw/~klan/data/paper/pdf/Rapid%20Generation%20of%20Realis%20Mobility%20Models%20for%20VANET.pdf
11. MOVE. Mobility model generator for vehicular networks. Available at http://sourceforge.net/apps/mediawiki/move, 2013.

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7.

Authors:	**T. Abinaya, A. Shobana, S. Mekala, P. Maragathavalli**
Paper Title:	**Efficient Real – Time Analysis for Sequence of Medical Images Using Support Vector Machine**

Abstract: The objective of the proposed work is to develop an automatic system which is capable of determining the stage of the ongoing surgical operation by analyzing the video sequence obtained from an endoscope during surgery. The system is designed such that, they are: 1. capable of distinguishing between different organs on the image obtained from an endoscope 2. Capable of making real-time decisions when working with video stream. This paper uses Support Vector Machine (SVM) which is used as a classifier.

Keywords: Endoscope, Support Vector Machine (SVM), Neural Network, Processing Elements, Nodes, Principal Component Analysis method (PCA).

References:

1. I. Artemchuk, E. Petlenkov, F. Miyawaki, A. Gladki, Department of Computer Control, TUT, Ehitajate tee (2010) "Neural Network based System for Real-time Organ Recognition by Analysis of Sequence of Endoscopic Images received during Surgical Operation", Graduate School of Advanced Science and Technology, Tokyo Denki University, Ishizaka, Hatoyama- machi, Hiki-gu, Saitama, 350- 0394, Japan, 2010 12th Biennial Baltic Electronics Conference (BEC2010) Tallinn, Estonia.
2. Haralick, R.M., K. Shanmugan, and I. Dinstein(2008), "Textural Features for Image Classification", IEEE Transactions on Systems, Man, and Cybernetics, Vol. SMC-3, pp. 610-621.
3. Liu & Wechsler, Gabor (2002), "Feature Based Classification Using the Enhanced Fisher Linear Discriminant Model for Face Recognition", IEEE Trans. ImageProcessing, Vol. 11, pp.467-476.
4. M. Kociołek, A. Materka, M. Strzelecki P. Szczypiński (2001), "Discrete wavelet transform–derived features for digital image texture analysis", Proc. Of Interational Conference on Signals and Electronic Systems, Lodz, Poland, pp. 163-168.

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5. Andrzej& Michal (1998) "Texture Analysis Methods – A Review", Technical University of Lodz, Institute of Electronics, COST B11 report, Brussels 1998.

8.

Authors: **Vijaya Lakshmi G. M, Vijaya S, Gunasekaran M**

Paper Title: **Complex Effects in Dynamics of Prey-Predator Model with Holling Type II Functional Response**

Abstract: In this article, we study the discrete time prey-predator model by using Nicholson Bailey model (NB model) with Holling type II functional response. NB model with Holling type II is applied to know the Prey-predator dynamical system and investigated the fixed points and stability analysis. Graphs are drawn for different intrinsic growth rate to notice the effects of competitions for biologically reasonable range of parameter values. The stable existence of axial and interior fixed points of prey-predator is shown under different parameter values. Numerical simulations not only illustrate the results but also they exhibit the complex dynamic behaviours of the model.

Keywords: Prey-predator system, Nicholson-Bailey model, Holling type II functional response, Stability analysis.

References:

1. Adb-Elalim A.Elsadany, H.A.EL-Metwally, E.M.Elabbasyl, H.N.Agiza: Chaos and bifurcation of a nonlinear discrete prey-predator system, Computational Ecology and software, 2012,pp. 169-180.
2. Agiza.H.N, ELabbasy.E.M., EL-Metwally, Elsadany.A.A: Chaotic dynamics of a discrete prey – predator model with Holling type II, Nonlinear analysis:RWA 10, 2009,pp.116-129.
3. Canan celik, Oktay dumman: Allee effect in a discrete- time predator-prey system, Chaos, Solitons and Fractals 40, 1956-1962, 2009.
4. Cheryl.J.Briggs and Martha.F.Hoopes: Stabilising effects in spatial parasitoid- host and predator – prey models: a review, Theoretical Population Biology 65 , 2004, pp.299-315.
5. Elaydi.S: An introduction to difference equations. Springer, Berlin, 2000.
6. Hua Su, Binxiang Dai, Yuming Chen, Kaiwang Li: Dynamic complexities of a predator-prey model with generalized Holling type III functional response and impulsive effects, Computers and mathematics with applications 56, 2008,pp. 1715-1725.
7. Jose D. Flores: Mathematical modelling, Nicholson Bailey model, Influneza virus and.support and study material,2011, pp.14-28.
8. M.Renisagaya Raj, A. Georege maria selvam, R.Janagaraj, D. Pushparajan: Dynamical behaviour in discrete prey-predator interactions, IJESIT, volume 2, issue 2, 2013, pp. 311-316.
9. Madhusudanan .V, Gunasekaran.M: An Analytical Study in Dynamics of Host Parasitoid Model with Allee Effect ,IJERD,vol.9, issue8., 2014, pp. 1-5.
10. Merdan.H, Duman.O: On the stability analysis of a general discrete-time population model involving predation and Allee effects, , Chaos, Solitons and Fractals 40, 2009, pp.1169-1175.
11. Sinan Kapcak, Unal ufuktepe and Saber Elaydi: Stability and invariant manifolds of a generalized Bedding host-parasitoid model, Journal of biological dynamics, 2013, pp.233-253.
12. Sophi R. Jang.J, Sandra L. Diamond: A host-parasitoid interaction with Allee effects on the host, Computers and mathematics with applications 53, 2007, pp. 89-103.
13. Tarini kumar dutta, Debasish bhattacharjee, Basistha ram bhuyan: Some dynamical behaviours of a two dimensional nonlinear map, IJMER, vol.2. issue.6, , 2012, pp.4302-4306.
14. Unal ufuktepe and Sinan kapcak: Stability analysis of a host parasite model, Advances in differential equations, springer, 2013, pp.1-7.
15. Unal ufuktepe, Sinan kapcak and olcay akman: Stability and invariant manifold for a predator-prey model with Allee effect, Advances in differential equations, springer, 2013, pp.1-8.
16. Xia liu, yepeng xing: Qualitative analysis for a predator prey system with Holling type III functional response and prey refuge, Hindawi publishing corporation discrete dynamics In nature and society, 2012, pp.1-11.
17. Yun kang, Dieter armbruster: Noise and seasonal effects on the dynamics of plant- herbivore models with monotonic plan growth functions, International journal of biomathematics, 2011, pp.1-20.

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9.

Authors: **Divyansh Mathur**

Paper Title: **Maximum Power Point Tracking with Artificial Neural Network**

Abstract: Fossil fuels' rapid depletion andneed to protect the environmenthas left us to thinkupon alternatives and solutions to curb the excess use of conventional sources and shift focus on the renewable energy. As final year project, my inspiration was [1], and through it I'vetried my best to designa prototypemodel inclusive of techniques that support the need to harness the solar energy.

Keywords: Maximum Power Point, Buck-Boost Converter, Neural Network Architecture.

References:

1. Mahmoud A. Younis (University Tenaga National), Tamer Khatib (National University of Malaysia), Mushtaq Najeeb (Universiti Tenaga National), A Mohd. Ariffin (University Tenaga National), "An Improved Maximum Power Point Tracking Controller for PV Systems Using Artificial Neural Network", ISSN 0033-2097, R. 88 NR 3b/2012, Pg. 116-121.
2. Edward E. Anderson, "Fundamentals for Solar Energy Conversion", Addison Wesley Pub. Co., 1983.
3. G. N. Tiwari and M. K. Ghosal, "Fundamentals of Renewable Energy Sources", Narosa Publishing House, New Delhi, 2007.
4. M. A. Vitorino, L. V. Hartmann, A. M. N. Lima et al., "Using the model of the solar cell for determining the maximum power point of photovoltaic systems," Proc. European Conference on Power Electronics and Applications. pp. 1-10, 2007.
5. D. Yogi Goswami, Frank Kreith, Jan. F. Kreider, "Principles of Solar Engineering", 2nd Edition, Taylor & Francis, 2000, India Reprint, 2003, Chapter 9, Photovoltaics, pp. 411-446.
6. Solar Energy, Third Edition, by S. P. Sukhatme and J. K. Nayak, Tata McGraw-Hill Publication Co. Ltd. New Delhi, 2008, Chapter 9, Section 1, pp. 313-331.
7. Comparison of Photovoltaic array maximum power point tracking technique - Patrick L Chapman, Trishan Esram.
8. E. Alpaydin, Introduction to Machine Learning, Cambridge, MA: MIT Press, 2004.
9. Neural Networks – A Classroom Approach, Satish Kumar, Tata McGraw-Hill Education.

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Authors: **R. Samuel Devadoss**

Paper Title: **Design of Cost Effective Wave Flume for Oil Spill Studies**

Abstract: This paper describes the design, construction, and testing of a small wave flume and associated equipment. The wave flume is equipped with a Piston type wavemaker, capable of producing only regular waves. The wave-maker is controlled by a mini three phase digital transformer. The crank shaft has three pitches can produce three stroke length of 8 cm, 16 cm and 24 cm respectively. The passive wave absorber in the form of sandy beach is used

10.	with a slope of 1:10 for absorbing waves generated from the wave maker. The constructed wave flume was tested for leakages and enamel proof paints are quoted to reduce the effect of friction. Five distinct oil spill experiments are conducted in wave flume. The wave flume design is cost effective both in construction and operational phases. **Keywords:** Wave Flume, Piston Wave Maker, Oil Spill, Passive Absorbers. **References:** 1. Sorensen R.M., "Basic Coastal Engineering", Springer Science Publications Ltd. (2010). 2. Dean R.G. and Darlymple R.A., "Coastal Process with Engineering Applications", Cambridge University Press (2002). 3. Dean, R.G. and R.A. Dalrymple, "Water Wave Mechanics for Engineers and Scientists", World Scientific Publishing Ltd., (1992). 4. Guyomarch, J., L.F. Stéphane, and F. Merlin, Effect of suspended mineral load, water salinity and oil Type on the Size of oil-mineral aggregates in the presence of chemical dispersant. Spill Science & Technology Bulletin, (2002), 8(1), pp 95-100. 5. Boufadel, C. M., D. R. Bechtel, and J., Weaver, The movement of oil under non-breaking waves. Marine Pollution Bulletin, (2006), 52, pp 1056–1065. 6. Li, Z., K. Lee, T. King, C. M. Boufadel, and D. A. Venosa, Evaluating crude oil chemical dispersion efficacy in a flow-through wave tank under regular non-breaking wave and breaking wave conditions. Marine Pollution Bulletin, (2009), 58, pp 735–744. 7. Hughes, S.A, "Physical Models and Laboratory Techniques in Coastal Engineering", World Scientific Publishing Ltd., (1993). 8. Lu, X., J. Li, and S. Chen, Dynamic Model for Oil Slick Dispersion into a Water Column - A Wind Driven Wave Tank Experiment. Chinese Journal of Oceanology and Limnology, (1993), 11(2), pp 161-170.	**43-46**
11.	**Authors:** **S. Jalaja, R. Sivaranjani, V. Tamil Mullai** **Paper Title:** **Real Time System Partition for Multithreading Applications** **Abstract:** The time and space partitioning in real-time Avionics systems, has been widely embraced by the industry. We present the design of real-time file system (RTFS), a file system that complies with the emerging standard for a file system. RTFS provides real-time accesses to data stored on a variety of mass storage device. In addition to an interface complying with emerging standard, RTFS provides an application interface that complies with a subset of the POSIX standard. Task partitions communicate their file operation requests to RTFS via queuing ports; such ports are also used to deliver the responses from RTFS to the task partitions. The temporal behavior of RTFS is predictable and the response times for file operations are bounded. The design of RTFS handles a mix of hard and soft real-time File access requests. RTFS implements metadata journaling using on-board non-volatile memory devices to provide fast file updates and fast file system recovery on faults. Finally, RTFS includes facilities to support network-centric operations and a set of design and maintenance tools. This paper overviews the design of RTFS and describes the realization of the many unique features of RTFS. **Keywords:** Real Time File System, Portable Operating System interface, Real Time Operating System(PSOS), Storage Area Network, Flash memory. **References:** 1. Avionic Application Software Standard Interface – ARINC Specification 653, Aeronautical Radio Inc., 1997. 2. ARINC 653 File System Standards Draft –Revision 5, version of Feb. 2005. 3. ARINC 653 File System Standards Draft – Revision 5, version dated June 8, 2005. 4. ARINC 653 File System Standards, discussions and comments from the meeting of March 1 to 3, 2005. 5. Ghose, K., Aggarwal, S., Vasek, "ASSERTS: A Toolkit for Real-Time Software Design, Development and Evaluation", in the Proc. of the 9-th Euromicro Real-Time Systems Workshop (available from the IEEE CS Press), 1997. 6. Bosch, P. and Mullender, S. J., "Real- time Disk Scheduling in a Mixed-Media File System". In Proc. RTSS-2000. 7. Shenoy, P. J., and Vin, H. M., "Cello: A Disk Scheduling Framework for Next Generation Operating Systems", Master's Thesis, Univ. of Texas. 8. Gopalan, K., "Real-time disk scheduling using deadline sensitive scan", Technical Report TR-92, Dept. of Computer Science, State University of New York, Stony Brook, 2001. 9. Reuther, L. and Pohlack, M., "Rotational- Position- Aware Real-Time Disk Scheduling Using a Dynamic Active Subset (DAS)", in Proc. Real- Time System Symposium (RTSS), 2003. 10. Zhang, Z., and Ghose, K., "yFS: A Journaling File System Design for Handling Large Data Sets with Reduced Seeking", in Proc. of the USENIX Symposium on File Systems and Storage Technologies (FAST '03), 2003.	**47-52**
12.	**Authors:** **Waqar A. Adil, Aslam P. Memon, M. Usman Keerio, Ahsan Zafar** **Paper Title:** **Simulation of Power System Transient Disturbances in MATLAB** **Abstract:** The power system transients (PST) can cause serious disturbances in the reliability, economy and safety of the power system network. The transient signals are the short term duration for which the frequencies as well as varying time information are compulsory known for the analysis purposes. These disturbances occur for few cycles, which are difficult to be identified and classified by digital measuring and recording instrumentations. For the analysis and detection of PST disturbances (PSTDs) different algorithms have been developed to generate their accurate waveforms. This paper discusses and develops the different simple and efficient simulation models of PST waveforms with spectral and magnitude specifications as guided by IEC and IEEE-1159 through the numerical data. Matlab/Simulink has been utilized for the simulation of different types (like oscillatory and impulse transients) of PST to prove the applicability, validity and accuracy for the detection and analysis of PSTDs. **Keywords:** Impulse, Matlab/Simulink, Numerical model, Oscillatory, Power System Transients, Simulation. **References:** 1. Dugan Roger. C., McGranaghan M.F., Santoso S. and Beaty H.W., (2003), Electrical Power System Quality, 2nd Edition, McGraw Hill Book Company, New York, 2003. 2. Aslam P. Memon., M. Aslam Uqaili, and Zubair Memon "Combined Approach of Probabilistic Neural Network and Time-Frequency as the classifier for Power System Transient Problems", Mehran University Research Journal of Engineering and Technology, Vol 32, No. 4, pp. 612-622, October 2013.	**53-58**

3. Aslam P. Memon, M. Aslam Uqaili, Zubair A. Memon and Asif Ali Akhund, "Time-Frequency Analysis Techniques for Detection of Power System Transient Disturbances," International Journal of Emerging Trends in Electrical and Electronics (IJETEE ISSN: 2320-9569), IRET publication, Vol. 9, pp. 39-44, November 2013.
4. Math, H. J.; Bollen, Irene.; Yu-Hua, Gu. (2006), Signal Processing Of Power Quality Disturbances, 2nd Edition, IEEE Press Series On Power Engineering Mohamed E. El-Hawary, Series Editor, A John Wiley & Sons, Inc., Publication, 2006.
5. T. Lachman,, Aslam P. Memon., Zubair Memon "Detection of Power Quality disturbances Using Wavelet Transform Technique" International Journal for the Advancement of Science and Arts, UCSI University, Malaysia, Vol. 01, No. 01, pp. 1-13, 2010.
6. IEEE Recommended Practice For Monitoring Electric Power Quality, IEEE Std. 159-1995.
7. M. Jayaraju, I. Daut, M. Adzman "Impulse voltage generator modelling using MATLAB" World Journal of Modelling and Simulation. Vol. 4 (2008) No. 1, pp. 57-63
8. S.probert, Y. H. Song "Detection and Classification of High Frequency Transients using Wavelet Analysis" IEEE (2002)0-7803-7519-X/02. pp. 801-806
9. Rodney H.G. Tan, V.K. Ramachandaramurthy "Numerical Model Framework of Power Quality Events" European Journal of Scientific Research. Vol.43 No.1 (2010), pp.30-47
10. Amany El-Zonkoly "Design of Waveform Generator for Equipment Sensitivity Study During Power Quality Events" IEEE (2004) 0-7803-8575-6/04, pp. 921-925
11. Roger A. McConnell "Amplitude and Energy Spectra of Transient Test Waveforms" IEEE (2001) 0-7803-6569-0/0, pp. 243-248
12. J Arrillaga, N R Watson, S Chen. "Introduction", in Power Quality Assessment, 2nd edition, John Wiley & Sons. 2001, pp.3-4.
13. Pandy, S. K. and Satish, L., "Multiresolution signal decomposition: A new Tool for Fault Detection in Power Transformers During Impulse Test", IEEE Trans. On Power Delivery, Vol. 13, No.4, 1998, 1194-1200
14. IEEE c6241: 1991, IEEE Recommended Practice on Surge Voltages in Low-Voltage AC Power Circuits.
15. Bruno A.Olshausen "Sensory Processes" (2000) PSC129. Available at http://redwood.berkeley.edu/bruno/npb261/aliasing.pdf visited Dec 2013.