Volume 3 Issue 9, July 2015

International Journal of Emerging Science and Engineering

ISSN : 2319-6378 (Online)

Website: www.ijese.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

1.	**Authors:** Dipali B. Patil, Rajan L. Wankhade, P. K. Deshpande **Paper Title:** Geometric Nonlinear Analysis of Laminated Composite Plates Using Finite Element Method	1-5

Abstract: Finite Element Analysis for geometrically nonlinear behavior of laminated composite plates is presented and compared with the reported investigations. A first order displacement field that accounts for transverse shear effects under geometric nonlinear condition is employed in the formulation of a four node, rectangular, element with five degrees of freedom per node. The formulation demonstrates its excellence in the performance for predicting response at various lay ups and plies conditions.

Keywords: Finite element method, plates and shells, geometric non linear analysis, composites.

References:

1. S. Timoshenko & S. Woinowsky-Krieger, "Theory of Plates &Shells," Second Edition. McGraw-Hill publishing Co.Ltd., 1959, ISBN 0-07-085820-9.
2. O. C. Zienkiewicz & R. L. Taylor, "The Finite Element Method," Fourth Edition. Published by McGraw-Hill publishing Co.Ltd., 1989, ISBN 0-07-084174-8.
3. C. S. Krishnamoorthy, "Finite Element Analysis," Second Edition. McGraw-Hill publishing Co.Ltd., 2001 ISBN 0-07-462210-2.
4. Ghugal Y. M., Shimpi R. P., "A Review of Refined Shear Deformation Theories of Isotropic and Anisotropic Laminated Plates," Journal of reinforced plastics and composites, 21 (9), 2002, pp. 775-813.
5. J. N. Reddy, "An Introduction to The Finite Element Method," Second Edition. McGraw-Hill publishing Co.Ltd. ISBN 0-07-053084-X, 2003.
6. Akavci S. Seren, Yerli Huseyin R. and Dogan Ali, "The first order shear deformation theory for symmetrically laminated composite plates on elastic foundation," The Arabian Journal for Science and Engineering, 32(2B), 2007, pp. 341–348.
7. Wankhade R. L., "Geometric nonlinear analysis of skew plates using finite element method," International Journal of Advanced Engineering Technology, 79 (2), 2011, pp. 154-163..
8. Choudhary S.S., Tungikar V.B., "A Simple finite element for non-linear analysis of composite plates," International Journal of Engineering Science and Technology (IJEST), 3(6), 2011, pp. 4897-4907.

2.	**Authors:** V. Ramanath **Paper Title:** Implementation of Improved Face Recognition Technique for Car Ignition Access Control Using Raspberry Pi Microcontroller	6-10

Abstract: This paper focuses on the use of face recognition technique for Car ignition, as opposed to the natural method of using keys. Face recognition is a fast increasing, interesting area in real time applications .The face recognition methodology enables face recognition of valid users of the vehicle to be enrolled in a database. Before any user can access the car, the image of his face is matched against the faces in the database. The users with no match in the database are prevented from accessing the vehicle. Haar features are used for object detection and Principal Component Analysis is used for face recognition. This work is implemented on Raspberry Pi microcontroller and this is very low cost system.

Keywords: Raspberry Pi, GSM Module, Open CV, QT creator, Haar Features and Principal Component Analysis.

References:

1. David Zhang, Joseph P. Campbell, DavideMaltoni, Ruud M. Bolle, "Guest Editorial Special Issue on Biometric Systems", IEEE Transactions on Systems, Man, and Cybernetics-Part C: Applications and Reviews, VOL. 35.
2. XIE Yonghua, LIU Chuancai, YANG Jinyu(2008). Thealgorithm based on DDCT and TCSVD of human face feature extraction and recognition". ".The Computer Engineering, Vol. 08, No. 1.
3. Wang Lei, Jiang Bing, Chen Gentian, Design Of onboard navigation system based on ARM platform, Microprocessors, Vol 6, pp.104- 106, June 2006 (In Chinese).
4. S. Ajaz, M. Asim, M. Ozair, M. Ahmed, M. Siddiqui, Z. Mushtaq,―Autonomous Vehicle Monitoring & Tracking System," SCONEST2005, pp. 1 – 4, 2005.
5. G. Yang and T.S. Huang, Human face detection incomplex background, Pattern Recognition, vol.27,no.1,pp.53-63,1994
6. L. S. Sayana, M. Tech Dissertation, Face Detection, Indian Institute of Technology (IIT) Bombay, p. 5, pp. 10-15.
7. C. Schneider, N. Esau, L. Kleinjohann, B. Kleinjohann, "Feature based Face Localization and Recognition on Mobile Devices," Intl. Conf. on Control, Automation, Robotics and Vision, Dec. 2006, pp. 1-6.
8. L. V. Praseeda, S. Kumar, D. S. Vidyadharan, "Face detection and localization of facial features in still and video images", IEEE Intl. Conf. on Emerging Trends in Engineering and Technology, 2008,pp.1-2.
9. Lalendra Sumitha Balasuriya Frontal View Human Face Detection and Recognition Department of Statistics and Computer Science University of Colombo Sri Lanka May 2000
10. Amr El Maghraby Mahmoud Abdalla Othman Enany Mohamed Y. El Nahas" Hybrid Face Detection System using Combination of Viola - Jones Method and Skin Detection."International Journal of Computer Applications (0975 – 8887) Volume 71– No.6, May 2013

3.	**Authors:** Abhishek Ranjan, Nilima **Paper Title:** Cost Effective Optical Millimeter Wave Generation for Radio Over Fiber System	11-23

Abstract: There is continuous growth in demand of internet traffic among end users for various applications. This results in overcrowding and interference of data at microwave region. Numerous research is being carried out in the field of broadband technology to achieve high performance and high data rate, as with the increase in demand of application and various high bandwidth application at the end user terminal is a stress over data rate. Increased interference leads to deterioration in network performance. A promising solution to this problem, is integration of network evolved from wireless and optical fiber network at very high frequency in millimeter (mm) wave range such as 60GHz - 70GHz to cope up the need of bandwidth which result in increased mobility and provide large instantaneous bandwidth. There is a need of shifting frequency of operation to high frequency region in mm. As the propagation characteristics such as reflection, refraction and scattering are less at high frequency, high frequency of

operation at mm wave can be proved to be a promising solution to provide high data rate with enhanced performance. In this project four technologies for increasing the bandwidth of network with decrease in cost of system were reviewed .Including photonic mm wave generation using based on external intensity modulation and non-linear effects in fiber using principal of frequency quadrupling and sextupling. From all these four different proposed techniques we conclude that dual-parallel MZM is the most cost effective and promising solution for frequency quadrupling and copes with the increasing frequency demand in the market.

Keywords: Fiber, Frequency, Optical, LED, BER, Performance, Photonic, modulator.

References:

1. K. Kitayama, "Architecture considerations of fiber radio millimeter wave wireless access systems," Fiber Integr. Opt., Vol. 19 167–186, 2000
2. J. Yu, Z. Jia, L. Yi, Y. Su, G.-K. Chang, and T. Wang, "Optical millimeter-wave generation orup-conversion using external modulators,"IEEE Photon. Technol. Lett., vol. 18, no. 13, pp. 265–267, Jul. 2006
3. L. Rosa, S. Selleri, G. Tartarini, P. Faccin, and E. M. Fabbri, "Distortion performance prediction in multi-band radio over fiber systems exploiting direct laser modulation," in Proc. 36th Eur. Microw. Conf., Manchester, Sep. 2006, pp. 1292–1295.
4. K. E. Razavi and P. A. Davies, "Millimetrewave generation by filtering the FM-IM spectra of a directly modulated DFB laser," in Proc. IEEE MTT-S Int. Microw. Symp. Dig., Denver, CO, Jun. 1997, vol. 3, pp. 1707–1708.
5. L. A. Johansson and A. J. Seeds, "Millimetre-wave radio-over-fibre transmission using an optical injection phase-lock loop source," in Proc. Microw. Photon., Oxford, U.K., Sep. 2000, pp. 129–132.
6. Y. Chen, A. Wen, L. Shang, Opt. Commun. 283 (2010) 4933.
7. J. Ma, X. Xin, J. Yu, C. Yu, K. Wang, H. Huang, L. Rao, J. Optical. Networking 7 (2008) 837.
8. J. Clerk Maxwell, A Treatise on Electricity and Magnetism, 3rd ed., vol. 2. Oxford: Clarendon, 1892, pp.68-73.
9. I.S. Jacobs and C.P. Bean, "Fine particles, thin films and exchange anisotropy," in Magnetism, vol. III, G.T. Rado and H. Suhl, Eds. New York: Academic, 1963, pp. 271-350.
10. K. Elissa, "Title of paper if known," unpublished.
11. R. Nicole, "Title of paper with only first word capitalized," J. Name Stand. Abbrev., in press.
12. Y. Yorozu, M. Hirano, K. Oka, and Y. Tagawa, "Electron spectroscopy studies on magneto-optical media and plastic substrate interface," IEEE Transl. J. Magn. Japan, vol. 2, pp. 740-741, August 1987 [Digests 9th Annual Conf. Magnetics Japan, p. 301, 1982].
13. M. Young, The Technical Writer's Handbook. Mill Valley, CA: University Science, 1989.

4.

Authors:	**Amit Moray, Preeti Singh**
Paper Title:	**Optimization of Cutting Forces and Surface Roughness for Turning Process of Glass Fiber Fein forced Polymer (GFRP) using Taguchi Method**

Abstract: Machining Fiber Reinforced Polymers (FRPs) is different in many aspects from machining metals. FRPs are inhomogenous materials that consist of distinctly different phases. The reinforcement fibres are strong and brittle while the polymer matrix is ductile and weak. This paper deals with the study of machinability of Glass Fiber Reinforced Polymer (GFRP) composite tubes. The experiment were conducted on a DRO pioneer -175 lathe machine using three different cutting tool: Cemented Carbide, Cubic Boron Nitride(CBN), Poly-Crystalline Diamond(PCD). The experiments were conducted according to Taguchi's Design of Experiments L9 orthogonal array. The cutting parameters considered were cutting speed, feed rate and depth of cut. The results were measured in terms of cutting forces and surface roughness.

Keywords: ANOVA, GFRP composite material, cutting force and surface roughness.

References:

1. Acosta J.L., et al., "Effect of addition of sepiolite on the mechanical properties of glass fiber reinforced polypropylene." Journal of Polymer Science, 1986 Vol.69 pp. 2593
2. Basavarajappa S., et al., "Influence of sliding speed on the dry sliding wear behavior and the subsurface deformation of hybrid metal matrix composite." International Journal of Wear, 2007 Vol.262 pp.1007 1012
3. Bechel V.T., kim R.Y., "Damage trends in cryogenically cycled carbon/polymer composites." Journal of Composite Science and Technology, 2004 Vol.64 pp.1773-1784
4. Chan K.C., et al., "A theoretical and experimental investigation of surface generation in diamond turning of an Al6061-SiC metal matrix composite." International Journal of Mechanical Sciences, 2001 Vol.43 pp.2047-2068
5. Chang Chung-Shin, "Turning of glass-fiber reinforced plastics materials with chamfered main cutting edge carbide tools." Journal of Materials Processing Technology, 2006 Vol.180 pp.117-129
6. Chauhan S. Kumar, et al., "Mechanical and wear characterization of glass fiber reinforced vinylester resin composites with different commoners." Journal of Reinforced Plastic Composites, 2008
7. Chauhan S.R., Kumar Anoop, Singh I., "Study on the friction and sliding wear behavior of woven S-glass fiber reinforced vinlyester composite manufactured with different commoners." Journal of Material Science, 2009 Vol. 44 pp.6338-6347
8. Davim J.P, "Machining Polymer Materials" ,Mc Graw Hill, 2008
9. Davim J.P, "Machining Polymer Materials", Mc Graw Hill, 2008
10. Davim J.P., Mata F., " A new machinability index in turning fiber reinforced plastics." Journal of Materials Processing Technology, 2005 Vol.170 pp. 436-440
11. Davim J.P., Mata F., "Optimisation of surface roughness on turning fibre-reinforced plastics (FRPs) with diamond cutting tools" International Journal of Advanced Manufacturing Technology, 2005 Vol. 26 pp.319-323
12. Davim J.P., Mata F., "Optimization of surface roughness on turning fibre-reinforced plastics (FRPs) with diamond cutting tools." International Journal of Advanced Manufacturing Technology, 2005 Vol.26 pp.319-323
13. Davim J.P., Mata F., Petropoulos G., "Statistical study of surface roughness in turning of PEEK composites." Journal of Materials and Design, 2008 Vol.29 pp.218-223
14. Derrico G.E.,"Turning of the metal matrix composites." Journal of Material Processing Technology, 2001 Vol.119 pp.257-260
15. Everstine G.C., Rogers T.G., "A theory of machining of fiberreinforced materials." Journal of Composite Materials, 1971
16. Hussain S.A., Pandurangadu V., Palani Kumar K., "Cutting power prediction model for turning of GFRP composites using response surface methodology" International Journal of Engineering Science and Technology, 2011 Vol.3 pp.161-171
17. Hussain S.A., Pandurangadu V., Palani Kumar K., "Cutting power prediction model for turning of GFRP composites using response surface methodology" International Journal of Engineering Science and Technology, 2011 Vol.3 pp.161-171
18. Jamal Y. Sheikh-Ahmad, "Machining of Polymer Composites" Springer, 2009

24-28

5.

Authors:	**Noor Safaa, Wedian Hadi**

	Paper Title:	**Design PID Controller for Controlling the Methane Gas Cylinder to Provide the Gas for Internal Consumption Generator**	
	Abstract: In this paper we will concern on how to build the controlling system depend on the Ideal PID Matching with Ziegler-Nichole controller Tuning for enhanced the work and then will applied this system on the Methane gas cylinder input for control on the size of the gas inside the cylinder depend on the Maximum size level and its range around 3.8325m3 .The controller Tuning build by Matlab Simulink Model and the ZN-PID controller applied with the help of closed loop, third order transfer function build in Matlab Simulink block with step ramp block as an input and PID controller simulink block the block will run as a close loop transfer function to enhanced the input error with help of Ziegler Nichols controller and reduce the overshoot completely and provided a good tuning. This controlling method can be used for control on the output power distributed to the different loads. **Keywords:** PID, Ziegler Nichols, Methane Gas **References:** 1. Varun Aggarwal,Meng Mao and Una-Mag Reilly, A self-Tuning Analog Proportional-Integral-Derivative (PID) controller,Massachusetts Institute of Technology,2006. 2. Farhad Aslam,MHD.Zeeshan Haider, An Implementation and comparative Analysis of PID controller and their Auto International Jornal of computer Applications Volume 21-No.8, May 2011. 3. Mahammad Baqer Mollah, Design and cost Benefit Analysis of Biogas plant using human and solid wastes as a load shedding Back up for Multi-storied Buldings, 2011 IEEE. 4. Simulink for process control-Individual web pages] www.staff.lboro.ac.uk/.../processcontrol/simulink4control . 5. Diwakar T.korsane, Vivek Yadav,Kiran H.Raut, PID Tuning Rules for first order plus Time Delay system,International Joural of Innovation and Research in electrical, electronics,Instrumantation and control engineering vo.2,Issue1,January 2014. 6. Rajkumar Bansal,A. patra,Vijay Bhuria, DESIGN of PID controller for plant control and comparison with Z-N PID controller, International Journal of Emerging Technology and Advanced Engineering ,Volume2,Issue4,April 2012. 7. Finn Haugen,Bernt Lie, Relaxed Ziegler-Nichols closed loop Tuning of PI controller, Modeling,Identification and control, Vol.34,No.2,2013. 8. Venugopal P, Ajanta Ganguly, Abinash Banerjee Lane , shibpur, Priyanka Singh, Hasanganj, "DESIGN OF TUNING METHODS OF PID CONTROLLER USING FUZZY LOGIC", International Journal of Emerging trends in Engineering and Development, Issue 3, Vol.5, ISSN 2249-6149, 2013.	**29-30**
6.	**Authors:**	**Mushreq Abdulhussain Shuriji, Wedian Hadi Abd AL Ameer**	
	Paper Title:	**Wireless Electrical Power Transmission via Microwave Link**	
	Abstract: Wireless communication technology has changed and expanded within these few years at an incredible rate, in particularly wireless power transmission. The aim of this research is to carry out a proposed system design to transmit the electrical power wirelessly using microwave link. In conclusion, wireless power transmission system has been presented and discussed. Furthermore, the proposed system can transmitted the electrical power optimally within 200-300m wirelessly. Besides, the results from the proposed system design provides a guideline for engineers to design a wireless power transmission system between the substations. **Keywords:** Microwave Link, Wireless power, Wireless power Transmission, Witricity. **References:** 1. D. M. Larruskain, I.Zamora, A. J. Mazon, O. Abarrategui, J. Monasterio, Transmission and distribution Networks in AC versus DC,university of the Basque country-Bilbao,spain. 2. Hualei Wang,M.ARedfrern, The advantages and disadvantages of using HVDC to interconnect AC network university of Bath,2010. 3. Andrea goldsmith," Wireless communications", Cambridge university press, Aug 8, 2005. 4. Muhammad Inam Abbasi,Syed Atif Adnan,Muhammad Amin,Farrukh Kamran, Wireless Power Transfer Using Microwaves At 2.45 GHZ ISM Band, 2009 IEEE. 5. E.Schamiloglu,High Power Microwave Sources and Applications,2004 IEEE . 6. Robert J.Barker, EdI Schamiloglu,HIGH-POWER MICROWAVE SOURCES AND TECHNOLOGIES, 2001, Book,www.wiley.com/…/producted 7. Zhiqiang Zhang, Jirun Luo and Zhaochuan Zhang, Analysis and suppression of high order Mode Oscillation in an S-Band Klystron,2015 IEEE. 8. Goerge Carytakis,High Power Klystrons:Theory and Practice at the Stanford Linear Accelerator Center, SLAC-PUB 10620,August,2005. 9. Chaitali Ingle, Trupti Ingale, Anand Trikolikar, Study of Different Types OF microwave Antenna and Its Applications ,International Journal of computer Technology and Electronics Engineering,Volume3,special Issue,March-April 2013. 10. Thermal Power Generation Plant or Thermal Power Station, www.electrical4u.com. 11. Thermal Power station],www.pinterest.com 12. Configuration-and-Selection-of-Microwave 13. Generators-and-components].5pdf-Adobe Reader,,www.rell.com 14. [Configuration-andselection-of-microwave-generators],www.muegge.de.com 15. Yi-Ming Yang,Cheng-Wei Yuan,and Bao-Liang Qian, Measurement of S-Band Microwave Gas Breakdown by Enhancing the Electric Field in a wave guide,2012 IEEE. John s.seybold, " Introduction to RF Propagation", John Wiley & Sons, Inc, 2005.	**31-34**