Volume 4 Issue 4, April 2016

International Journal of Innovative Science and Modern Engineering

ISSN : 2319 - 6386 (Online)
Website: www.ijisme.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

Volume-4 Issue-4, April 2016, ISSN: 2319–6386 (Online)
Published By: Blue Eyes Intelligence Engineering & Sciences Publication Pvt. Ltd.

S. No		Page No.
1.	**Authors:**	**Sana Alam, Saba Ahsan**
	Paper Title:	**GI-FI: The Emerging Technology of the New Short Range and High Data Rate Wireless Communication Era**

Abstract: Over the past few decades, wireless technologies are evolving at a great pace. This leads to the invention of Gi-Fi (Gigabit Fidelity or Gigabit Wireless) which is ten times faster than the current most prevalent technology Wi-Fi. The key factor of this technology is the provision of data transfer rate measuring in multi gigabits per second. Evolution, architecture, working and features of Gi-Fi such as low power consumption, high data transfer rate, cost effectiveness and enhanced security which provide the basis for the next generation communicating devices are discussed in detail in this paper. This paper also provides comparisons among various wireless technologies and applications of gigabit fidelity.

Keywords: CMOS , SIG , WECA , MAC , Wi-Fi, Gi-Fi

References:

1. S. Dheeraj and S. Gopichand, "Gi-Fi: New Era of Wireless Technology," [Online], Available at: http://www.yuvaengineers.com/? p=570, 2010.
2. ShikarBahl and Rishabh Rai,"Gi-Fi: Future of Wireless Technology" in IJARCCE (International Journal of Advanced Research in Computer and Communication Engineering), Vol.4 , Issue 6, 2015, ISSN 2278-1021.
3. D. M. Bhalerao and Anita Parihar,"Evaluation of Gi-Fi technology for High-Rates Wireless Communication" in IJRAT (International Journal of Research in Advent Technology), Vol.3, Issue 5, , 2015, E-ISSN 2321-9637.
4. Savita Sangappanavar, Poornima G R, C K Narayanappa,"Evolution of Gi-Fi Technology for the Upcoming Generation" in IJETR (International Journal of Engineering and Technical Research), Vol.3, Issue 4, 2015, ISSN 2321-0869.
5. MarziehYazdanipour, Mina Yazdanipour, AfsanehYazdanipour, Amin Mehdipour, "Evaluation of Gi-Fi for Short-Range, High-Rate Wireless Communication" in Proc. of the Intl. Conf. on Advances in Electronics, Electrical and Computer Science Engineering — EEC, 2012.
6. P.Srikanth, J.R.Thresphine,"Innovative with Gi-Fi Technology" in IJARCST (International Journal of Advanced Research in Computer Science & Technology), Vol.2, Issue 1, 2014, ISSN : 2347 - 8446
7. Susmit Paul, Sushmita Sharma,"Future of Communication Technologies: Wi-Fi Vs. Wi-Max Vs. Li-Fi Vs. Gi-Fi",in ISTP Journal of Research in Electrical and Electronics Engineering (ISTP-JREEE) 1 st International Conference on Research in Science, Engineering & Management (IOCRSEM 2014).
8. IEEE Explore , 802.15.3c-2009 - IEEE Standard for Information technology-- Local and metropolitan area networks-- Specific requirements-- Part 15.3: Amendment 2: Millimeter-wave-based Alternative Physical Layer Extension.
9. Desai Vaishali J. and RamaniShrusti K., "Gi-Fi, The technology of New Era", in IRJES (International Refereed Journal of Engineering and Science), Vol.3, Issue 9, 2014, ISSN (Online) 2319-183X, (Print) 2319-1821..
10. What is fiber optic? Definition from Whatis.com, Available at http://searchnetworking.techtarget.com/definition/fiber-optic.
11. WiMax–Wikipedia, Available at https://en.wikipedia.org/wiki/WiMAX
12. Darcy Poulin ," How much transmit power do Wimax net needs?" Available at http://www.eetimes.com/.
13. Navpreet Kaur, Sangeeta Monga,2014, "Comparisons Of Wired And Wireless Networks: A Review", International Journal of Advanced Engineering Technology" Vol. V,Issue II, 2014, E-ISSN 0976-3945.
14. Nahin, Paul J. "Oliver Heaviside: The Life, Work, and Times of an Electrical Genius of the Victorian Age" Available at https://jhupbooks.press.jhu.edu/content/oliver-heaviside, 2002, ISBN 0-8018-6909-9.
15. Coaxial Cable- Wikipedia, Available at https://en.wikipedia.org/wiki/Coaxial_cable.
16. Tingye Li , "Optical Fiber Communication-The State of the Art" ,IEEE Transactions on Communications, Volume:26 , Issue: 7, 2003,
17. ISSN : 0090-6778
18. Twisted pair cable –Webopedia, Available at http://www.webopedia.com/TERM/T/twisted_pair_cable.html.
19. T. Oguntunde & A.O. Osofisan, "Evaluation of Unshielded Twisted-Pair Cable for Wired Data Networks", African Journal of Computing & ICT-IEEE, Vol 7. No. 2, 2014, ISSN 2006-1781.
20. "Bluetooth traveler". hoovers.com. Available at http://www.hoovers.com/business-information/--pageid__13751--/global-hoov-index.xhtml .
21. Chatachik Bisdikian , "An overview of the Bluetooth wireless technology" – IEEE Communications Magazine, 2001, ISSN :0163-6804
22. TechJio: Difference between Bluetooth and Wi-Fi Technology, 2015 Available at http://technorator.blogspot.com/2015/03/difference-between-bluetooth-and-wi-fi
23. Vinh Pham and Janne Hagen, 2015, " Bluetooth security and threats", E: ISBN 978-82-464-2617-4
24. Wifi vs Wimax available at http://www.engineersgarage.com/contribution/wimax-vs-wifi
25. Jin-Shyan Lee, Yu-Wei Su, and Chung-Chou Shen, "A Comparative Study of Wireless Protocols: Bluetooth, UWB, ZigBee, and Wi-Fi" , The 33rd Annual Conference of the IEEE Industrial Electronics Society (IECON), 2007,.
26. NICTA. [Online]. Available at: http://www. nicta. com. au/media/previous_releases3/2009_media_releases/nictas_gifi_chip_wins_international_innovation_excellence_award
27. Imagination, Research report, NICTA, 2008
28. H. SinghS. K. Yong ; J. Oh ; C. Ngo, " Principles of IEEE 802.15.3c: Multi-Gigabit Millimeter-Wave Wireless PAN"
29. Computer Communications and Networks, 2009. ICCCN 2009. Proceedings of 18th International Conference , ISSN :1095-2055
30. Rakesh Kumar Jha , Pooja Kharga, "Gi-Fi Technology: A Technology with Standard Features" in ICRTAET International Conference on Recent Trends & Advancements in Engineering Technology), 2015, ISSN 0975 – 8887.
31. TDD FDD Duplex Schemes Available at http://www.radio-electronics.com/
32. A Survey of Mobile WiMAX IEEE 802.16m Standard Mr. Jha Rakesh, Mr. Wankhede Vishal A, Prof. Dr. Upena Dalal (IJCSIS) International Journal of Computer Science and Information Security, Vol. 8, No. 1, April 2010 ―ATIS Telecom Glossary 2007‖, atis.org.Retrieved 2008-03-16
33. R. Shorey,B. A. Miller, 2000, "The Bluetooth technology: merits and limitations", in Personal Wireless Communications, 2000 IEEE International Conference

1-5

2.	**Authors:**	**Il-Hyung Jung, Jae-Chel Ahn, Kyung-Rok Moon, Jae-Yong Lee, Byung-Chul Kim**
	Paper Title:	**Design and Implementation of Fault Tolerance Network in Launch Control System**

Abstract: Because the network of Launch Control System (LCS) handles a volume of critical data in a server environment and a minor fault in the network can cause uncontrollable status during periods of launch campaign time, the network should provide the very reliable service. To achieve the goal, this paper discusses what requirements the network expects and what differences the network has comparing to other common networks. After considering requirements, differences and compatibility with Supervisory Control and Data Acquisition (SCADA) system, the physical and logical configurations for the LCS network are proposed to improve the reliability and efficiency. The experimental results show what values in failover parameters are the most suitable for the LCS network. And other results and traffic shapes which are measured during practical operational period confirm that the traffic and processing load are effectively redistributed as planned.

Keywords: Fault tolerance network, Industrial network, Launch Complex (LC), LCS, SCADA

References:

1. H. Jung, D. K Hwang, K. R. Moon, D. R. Kim and S. H. Ra, "Control of Mechanical ground Support Equipment for Korean Launch Complex," in 3rd Asia-Pacific International Symposium on Aerospace Technology, Melbourne, Session2A, 2011
2. L. S. Klivans and S. B. Yochelson, "Computer Controlled Launch Control and Checkout of Operation Satellite Systems," IEEE Trans, Aerospace, vol. 1, pp.1249-1261, 1963
3. J. R. Moyne and D.M. Tilbury, "The Emergence of Industrial Control Network for Manufacturing Control, Diagnostics, and Safety Data," in Proc. IEEE, vol. 95, no. 1, pp. 29-47, 2007
4. Industrial Ethernet: A Control Engineer's Guide, [Online]. Available: http://www.cisco.com
5. H. Eto, H. Matsuo and F. Kurokawa "Network of Plant Remote Monitoring System Using UDP/IP for Wind-Farms," IEICE Trans, Communications, vol. E87-B, no. 12, pp. 3457-3464, 2004
6. KH. Mak and B.L. Holland, "Migrating electrical power network SCADA systems to TCP/IP and Ethernet networking," Power Engineering Journal, vol. 16, pp. 305-311, 2002
7. C. Kleedorfer, "Switch Based Industrial Ethernet Network," Computing & Control Engineering Journal, vol. 14, pp. 12-13, 2003
8. Ethernet Routing Switch 5000 Series, Competitive Performance Evaluation versus Cisco Catalyst 3750G and HP ProCurve 3400cl, No. 206106 [Online]. Available: http://www.tolly.com,
9. Cisco Hot Standby Router Protocol, IETF RFC 2281 [Online], Available: http://www.ietf.org/rfc/rfc2281.txt
10. J.T. Yu, "Applying IEEE802.1w to Improve Service Availability," IEEE International Conference on Dependable systems and Network, pp. B10-11, 2003
11. Link Aggregation Control Protocol, IEEE 802.1ad [Online], Available: http://standards.ieee.org
12. Spanning Tree Protocol, IEEE 802.1D [Online], Available: http://standards.ieee.org
13. Rapid Spanning Tree Protocol, IEEE 802.1w [Online], Available: http://standards.ieee.org
14. Product analysis: HiPER Ring vs. RSTP, [Online], Available: http://www.belden.com
15. R. H. McClanaban, "SCADA and IP: is Network Convergence Really Here?," IEEE Industry Applications Magazine, vol. 9, pp. 29-36, 2003
16. CW. Ten, CC. Liu and G. Manimaran, "Vulnerability Assessment of Cybersecurity for SCADA Systems," IEEE Trans, Power Systems, vol 23, pp.1836-1846, 2008
17. M.S. Thomas , P. Kumar, and V.K. Chandna, "Design, Development, and Commissioning of a Supervisory Control and Data Acquisition (SCADA) Laboratory for Research and Training," IEEE Trans, Power Systems, vol. 19, no. 3, pp. 1582-1588, 2004
18. B. Furht and R. Luken, "The Space Shuttle Launch Computer Control System at NASA Kennedy Space Center," in Proc. Euromicro '91 Workshop. IEEE Real Time Systems, pp.184-192, 1991
19. K. C. Lee, and S. Lee, "Performance evaluation of switched Ethernet for real-time industrial communications" Computer Standards & Interfaces, vol. 24, pp.411-423, 2002
20. S. Kjesbu, "Industrial Environment Proximity Switches," Communications Engineer, vol. 1, pp. 40-43, 2003
21. S. Rüping, E. Vonnahme,. and J. Jasperneite, "Analysis of Switched Ethernet networks with different Topologies used in Automation Systems" in Proc. Fieldbus Technology Conference (FeT '99), Megdeburg, pp351-358, 1999
22. Communication Interface P8151B, [Online]. Available: http://www.rockwellautomation.com/
23. MBE Driver, [Online]. Available: http://support.ge-ip.com/
24. Caro, "End-to-End Fault Tolerance Using Transport Layer Multihoming" Ph.D Dissertation, CISC Dept, University of Delaware, 2005
25. Stream Control Transmission Protocol, IETF RFC 2960 [Online], Available: http://www.ietf.org/rfc/rfc2960.txt

Authors:	**Tong Yuanjian, Tong Xin, Zhang Bowen, Gao Aijun, Xu Lianghua**
Paper Title:	**Denitrogen and Graphitization Kinetics Analyze and Mechanism of Density Change for Polyacrynitrile-Based Carbon Fibers Heat Treated up to 2400^{o}C**

3.

Abstract: Polyacrynitrile-based carbon fibers were continuously heat treated up to 2400oC under N2 atmosphere for different time. Element analyse, X-ray diffract spectrum and gradient column were used to determine the nitrogen content, crystal size and density of the resulted carbon fibers respectively. The density steadily decreased with increasing of temperature up to around 1700 oC, then increased quickly with further increasing of temperature. A mechanism of density change was proposed with respect to denitrogen reaction and graphite crystal growth during heat treatment. The kinetics parameters of the denitrogen reaction and the graphite crystal growth were calculated separately. By applying these kinetics parameters, bulk density of the carbon fibers treated at different temperature was predicted, which is in good accordance to the experimental data.

Keywords: Carbon fiber; Denitrogen; graphitization. Kinetics;

References:

1. C.Pradere, C. Sauder. Transverse and longitudinal coefficient of thermal expansion of carbon fibers at high temperatures (300–2500K). Carbon, 2008, 46(14): 1874-1884.
2. C. Pradere, J. C. Batsale, J. M. Goyheneche, et al. Thermal properties of carbon fibers at very high temperature. Carbon, 2009, 47(3): 737-743.
3. M. A. Rahaman, A. F. Ismail, A. Mustafa. A review of heat treatment on polyacrylonitrile fiber. Polym Degrad Stabi, 2007, 92(8): 1421-1432.
4. N. Roy, R. Sengupta, A. K. Bhowmick. Modifications of carbon for polymer composites and nanocomposites. Prog Polym Sci, 2012, 37(6): 781-819.
5. X. Qin, Y. Lu, X. Hao, et al. A comparison of the effect of graphitization on microstructures and properties of polyacrylonitrile and mesophase pitch-based carbon fibers. Carbon, 2012, 50(12): 4459-4469 .
6. A.J. Gao, C.J. Su, S. Luo, et al. Densification mechanism of polyacrylonitrile-based carbon fiber during heat treatment. J Phys Chem

Solids, 2011, 72(10): 1159-1164.
7. F.Vautard, H. Grappe, S. Ozcan. Stability of carbon fiber surface functionality at elevated temperatures and its influence on interfacial adhesion. Appl Surf Sci, 2013, 268: 61-72.
8. J. Duchoslav, C. Unterweger, R. Steinberger, et al . Investigation on the thermal-oxidative stability of carbon fiber sizings for application in thermaplastic. Polym Degrad Stabi, 2016, 125:33-42
9. P.G. He, D.C. Jia, T.S. Lin, et al. Effects of high-temperature heat treatment on the mechanical properties of unidirectional carbon fiber reinforced geopolymer composites. Ceram Int, 2010, 36(4): 1447-1453.
10. Ji, Z.K. Mao, H.H. Song , et al. Effect of heat treatment temperature on the microstructure and properties of polyimide-based carbon fibers. Carbon, 2015, 85: 447.
11. M.G. Sung, K. Sassa, T. Tagawa , et al. Application of a high magnetic field in the carbonization process to increase the strength of carbon fibers. Carbon, 2002, 40(11): 2013-2020.
12. N.I. Baklanova, V.V. Baklanova, N.B. Morozava, et al. The effect of heat treatment on the tensile strength of the iridium-coated carbon fiber. Thin Solid Films, 2015, 578: 148-155.
13. A.J. Gao, C. Zhao, S. Luo, et al. Correlation between graphite crystallite distribution morphology and the mechanical properties of carbon fiber during heat treatment. Mater Lett, 2011, 65(23–24): 3444-3446 .
14. M. Toyoda, Y. Kaburagi, A. Yoshida, et al. Acceleration of graphitization in carbon fibers through exfoliation. Carbon, 2004, 42(12–13): 2567-2572.
15. R. Harald, P. Stephan, S. Pabisch, et al. The structural evolution of multi-layer graphene stacks in carbon fibers under load at high temperature – A synchrotron radiation study. Carbon, 2014, 80: 373-381.
16. C.J. Su, A.J. Gao, S. Luo, , et al. Evolution of the skin-core structure of PAN-based carbon fibers with high temperature treatment. Carbon, 2013, 51: 436-437.
17. H.T. Wang, Y. Wang, T. Li, et al. Gradient distribution of radial structure of PAN-based carbon fiber treated by high temperature. Prog Nat Sci-Mater, 2014, 24(1): 31-34.
18. Y. Wen, Y.G. Lu, X. Hao , et al. Further investigation on boric acid catalytic graphitization of polyacrylonitrile carbon fibers: Mechanism and mechanical properties. Mater Design, 2012, 36: 728-734.
19. E. Pamula, P.G. Rouxhet. Bulk and surface chemical functionalities of type \III\PAN-based carbon fibres. Carbon, 2003, 41(10): 1905-1915.
20. L.M. Manocha. Changes in physical and mechanical properties of carbon fibre-reinforced polyfurfuryl alcohol composites during their pyrolysis to carbon/carbon composites. Compos, 1988, 19(4): 311-319.

4.

Authors: **Farhana Momotaz, Md. Rashedul Hasan, Maksuda Bintey Islam**

Paper Title: **Analyzing the Cost Structure of Garments from Fiber to Fashion**

Abstract: In garments manufacturing sector, a business is totally depends on garment costing. Costing is a very complex procedure, with set patterns and guidelines followed by the industry. Garment prices are mainly based on the fabric consumption. Hence we must pay more attention to find out the fabric consumption more accurately or closely. It needs sound knowledge and good practical experience to find out the fabric consumption. It is difficult to find out costs for every process as there are some inbuilt costs while costing. In order to do perfect garment costing, one must know about all the activities including purchase of fabrics, sewing, packing, transport, overheads, etc. and also about their costs, procedures, advantages and risk factors. Merchandiser must be aware that there are always fluctuations in the costs of raw materials and accessories, charges of knitting, processing, finishing, sewing and packing, charges of transport and conveyance, shipping, over heads, banking charges and commissions, etc. The method of making costing will vary from style to style, as there are many different styles in garments. In our study, we have analyzed the calculation process. To work on the prices exactly, we have worked on full measurements of the three knitted garments which are men's t-shirt, Ladies' t-shirt & pant, especially the measurements of Chest, Body Length and Sleeve Length and waist band. Different types of costing and their variances are also discussed in our study.

Keywords: Costing, Garments, Fiber, Fashion, Consumption.

19-21

References:

1. Vabatosh banarji , Cost Accounting.
2. Prof.M.A.Kashem Garments Merchandising, 2008, Apparel Manufacturing Engineering Department (BUTEX) Bangladesh.
3. http://www.garmentsmerchandising.com/factors-affecting-garments-costing/, Factors Affecting Garments Costing.
4. Cost Analysis in Garment Industry, International Journal of Recent Advances in Multidisciplinary Research Vol. xx, Issue xx, pp.xxx-xxx, September, 2015.
5. http://www.textiletoday.com.bd/oldsite/magazine/715, Fashion Merchandising: Garment Costing.
6. J. A. Rosenau and D. Wilson, Apparel merchandising. New York: Fairchild, 2001.
7. Dr. Shah Alimuzzaman Belal Understanding textiles for a merchandiser, Bangladesh.
8. Burritt, Chris. "Cost-Cutting Is Rampant in Fashion." Bloomberg Business Week. Bloomberg, 26 May 2011. Web. 12 Nov. 2014.
9. The High Cost of Cheap Clothes. Dir. Suroosh Alvi. Prod. Andrew Glazer. Perf. Suroosh Alvi. The High Cost of Cheap Clothes. Vice News, 15 Oct. 2014. Web. 12 Nov. 2014.
10. Hodge, Brooke, and Patricia Mears. Skin Bones: Parallel Practices in Fashion and Architecture. New York: Thames & Hudson, 2007. Print
11. J.M. Johnson and E.C. Moore, Apparel product development (2nd ed.) Upper Saddle River: Prentice Hall, 2001.