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	Authors:	T. Siva Prasad, T. Krishnaiah, J. Md. Iliyas, M. Jayapal Reddy	
	Paper Title: A Review on Modeling and Analysis of Car Wheel Rim using CATIA & ANSYS		
•	Abstract: The essence of car wheel rim provides a firm base on which to fit the tire. Its dimensions, shape should be suitable to adequately accommodate the particular tire required for the vehicle. In this project a tire of car wheel rim belonging to the disc wheel category is considered. Design is an important industrial activity which influences the quality of the product. The wheel rim is modeled by using modeling software catiav5r17. By using this software the time spent in producing the complex 3-D models and the risk involved in the design and manufacturing process can be easily minimized. So the modeling of the wheel rim is made by using CATIA. Later this CATIA modal is imported to ANSYS for analysis work. ANSYS is the latest software used for simulating the different forces, pressure acting on the component and also calculating and viewing the results. By using ANSYS software reduces the time compared with the method of mathematical calculations by a human. ANSYS static analysis work is carried out by considered two different materials namely aluminium and forged steel and their relative performances have been observed respectively. In addition to wheel rim is subjected to modal analysis, a part of dynamic analysis is carried out its performance is observed. In This paper by observing the results of both static and dynamic analysis obtained forged steel is suggested as best material. Keywords: ANSYS, CATIA V5, Stress Analysis, Wheel Rim.		
	and T.S.sriva: 2. Stress Analys 37), ISSN: 22 3. CATIA V5 F 4. Fatigue Anal Engineering (5. THE TIRE A	is of Wheel Rim International Journal of Mechanical Engineering and Research Volume 1 Issue 1 (page 34-	
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	Paper Title:	Biomedical Application of Microstrip Patch	
	Abstract: Micro strip antennas are finding a growing medical application in imaging, diagnosis, and treatment. In this paper an optimized E-shaped patch antenna is presented. This paper presents a flexible micro strip antenna that can be placed in contact with the human skin. Microwave breast imaging (MBI) uses low power and longer wavelength signals to obtain information about breast tissues, and promises a safer and more accurate modality for regular breast scanning. In this paper, a method is shown to reduce the effect of signal reflection from the breast skin by placing the antenna incontact with the breast skin. The skin can be considered a layer of the antenna substrate. This reduces the signal scattering from the skin and more transmitted signal is irradiated on the tumor, thus, increasing the tumour detection sensitivity. Design and simulation in Ansoft High Frequency Simulation Software (HFSS) is presented. Keywords: Wireless communications, patch antenna, tumour, imaging Cancer, Patch Antenna, High Frequency Simulation Software.		
	D. C.		
	 References: Smith, R. A., D. Saslow, K. A. Sawyer, W. Burke, M. E. Costanza, W. P. Evans, R. S. Foster, E. Hendrick, H. J. Eyre, and S. Sener, \American cancer society guidelines for breast cancer screening: Updated 2003," CA: A Cancer J for Clinician, 141{169, 2003}. Epstein, S. S., R. Bertell, and B. Seaman, \Dangers and unreliability of mammography: Breast examination is a safe, effective, and practical alternative," International Journal of Health Services, 605{615, 2001}. Nass, S. J., I. C. Henderson, and J. C. Lashof, \Mammography and beyond: Developing technologies for the early detection of breast cancer," National Cancer Policy Board, Institute of Medicine, National Research Council, 2001. Y. Rahmat-Samii and E. Michielssen, Electromagnetic Optimisations by Genetic Algorithms, New York, NY: Wiley, 1999. R. Matouek, Realization of Fuzzy-Adaptive Genetic Algorithms in a Matlab Environment, Institute of Automation and Computer Science, Brno University of Technology, 2001. D. M. Pozar, "Microstrip antenna coupled to a microstrip-line, Electron.Lett" vol. 21, no. 2, pp. 49-50, Jan. 1985. P. Katehi, N. Alexopoulos, and I. Hsia, "A bandwidth enhancement method for microstrip antennas,, vol.35 no.1, pp.5-12, Jan 1987. 		
	Authors:	Vipul Sharan, Naveen Keshari, Tanay Mondal	-
	Paper Title: Biomedical Image Denoising and Compression in Wavelet using MATLAB		
•	Abstract: Biomedical image processing is similar in concept to biomedical signal processing in multiple dimensions. Medical Images normally have a problem of high level components of noises. Image denoising is an important task in image processing, use of wavelet transform improves the		

quality of an image and reduces noise level. A novel theory is introduced for analyzing image compression methods that are based on compression of wavelet decompositions. This theory precisely relates (a) the rate of decay in the error between the original image and the compressed image as the size of the compressed image representation increases (i.e., as the amount of compression decreases) to, (b) the smoothness of the image in certain smoothness classes called Besov spaces. Within this theory, the error incurred by the quantization of wavelet transform coefficients is explained. Based on previous experimental research it is argued that in most instances the error incurred in image compression should be measured in the integral sense instead of the mean-square sense. Here a biomedical image has been taken for de-noising and compression in Wavelet Toolbox specially Wavelet 2D in MATLAB and MATLAB command prompt using step by step. As a result we get the compressed image as well as noise free in vertical, horizontal and diagonal details and got energy ratio.

Keywords: Wavelets, Image Processing, Medical Image, Image De-noising, Image Compression. 3.

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References:

- G. Eason, B. Noble, and I. N. Sneddon, "On certain integrals of Lipschitz-Hankel type involving products of Bessel functions," Phil. Trans. Roy. Soc. London, vol. A247, pp. 529-551, April 1955. (references)
- J. Clerk Maxwell, A Treatise on Electricity and Magnetism, 3rd ed., vol. 2. Oxford: Clarendon, 1892, pp.68-73.
- 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.
- Michel Misiti, Yves Misiti, Georges Oppenheim, Jean-Michel Poggi "Wavelet Toolbox User's Guide" R2013b in September 2013
- https://www.ceremade.dauphine.fr/~peyre/matlab/wavelets/content.html
- http://www.pybytes.com/pywavelets/ref/idwt-inverse-discrete-wavelet-transform.html
- http://www.mathworks.com/help/wavelet/ref/dwt2.html
- K. Elissa, "Title of paper if known," unpublished.
- R. Nicole, "Title of paper with only first word capitalized," J. Name Stand. Abbrev., in press.
- 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].
- M. Young, The Technical Writer's Handbook. Mill Valley, CA: University Science, 1989. Electronic Publication: Digital Object Identifiers (DOIs): Article in a journal:
- D. Kornack and P. Rakic, "Cell Proliferation without Neurogenesis in Adult Primate Neocortex," Science, vol. 294, Dec. 2001, pp. 2127-2130, doi:10.1126/science.1065467. Article in a conference proceedings:
- H. Goto, Y. Hasegawa, and M. Tanaka, "Efficient Scheduling Focusing on the Duality of MPL Representatives," Proc. IEEE Symp. Computational Intelligence in Scheduling (SCIS 07), IEEE Press, Dec. 2007, pp. 57-64, doi:10.1109/SCIS.2007.357670.

Authors: Praveen J. U, P. Jayarekha **Paper Title:** Identifying the Misbehaving User in a Network and Trapping them using Honeypot

Abstract: In the IT world, information is considered to be the most valuable asset for any organization. The ability to secure this asset is the critical factor and the art of securing this asset is known as information security. In today's competing IT business, network administrator must be always available to protect the network and the information on the network with extreme measures. One of them is honeypot. Honeypot reduces the overhead of the network administrator to always be on the network and always monitoring it. Honeypot is a setup to imitate a real network. The idea is to make the attacker believe that the honeypot is a legitimate system. This Paper proposes the methodology to identify and trap the misbehaving user.

Keywords: PM (pseudonym manager), (NM) nymble manager, NIDS (Network Intrusion Detection System), TG (Ticket Generator), TM (Ticket Manager).

4. **References:**

14-17

- Patrick P. Tsang, Apu Kapadia, "Nymble: Blocking Misbehaving Users in Anonymizing Networks" IEEE TRANSACTIONS ON DEPENDABLE AND SECURE COMPUTING, VOL. 8, NO. 2, MARCH-APRIL 2011.
- Anonymous P2P Available: http://wired4geeks.wordpress.com/2011/01/07/anonymous-p2p/
- Lance Spitzner, Definitions Available: http://www.tracking-hackers.com/papers/honeypots.html.
- Michael E.Whitman, Herbert J. Mattord, "Principles and Practices of Information Security", 2009, pp.261.
- Amandeep Singh, Satwinder Singh, Saab Singh M.Tech CE & Punjabi University Punjab, India "Review of Implementing a Working Honeypot System", ijarcsse, Volume 3, Issue 6, June 2013.
- Niels Provos and Thorsten Holz, Available: http://www.eweek.com/c/a/Security/How-to-Use-Honeypots-to-Improve-Your-Network-Security/.
- Snort website Available : http://www.snort.org/snort.

 Jiang Zhen, Zhenxiang Liu, "New Honeypot System and its Application in Security of Employment Net Work" IEEE Symposium on Robotics and Application, 2012.
- Nathalie Weiler "Honeypots for Distributed Denial of Service Attacks" The Eleventh International Workshops on Enabling Technologies: Infrastructure for Collaborative Enterprises (WETICE'02), 2002.
- Auttapon Pomsathit, "Effective of Unicast and Multicast IP Address Attack Over Intrusion Detection System with Honeypot", 2012 Spring Congress on Engineering and Technology (S-CET), 2012.

Authors: Mobashera Saima Haque, Ahmed Sharif Paper Title: Processing and Characterization of Waste Denim Fiber Reinforced Polymer Composites **Abstract:** In recent years, textile waste fiber-reinforced thermoplastic polymer matrix composites have

gained commercial success in different applications. In this study, polypropylene matrix based composite structures were produced by using waste denim fiber at different ratios (5 and 10 %) and conditions (with and without moisture). The mechanical, thermal, chemical and morphological properties of the composites were characterized. The results indicated that after removing moisture, the flexural strength and the flexure modulus of the composites improved with increasing fiber percentage, whereas better tensile properties were obtained at lower fiber content. The highest tensile strength was obtained for 5wt% dry denim fiber-pp composites. The surface morphology of the fracture surfaces of the tensile specimens, examined by a field emission scanning electron microscope, revealed the presence of microvoids. The infrared spectra of pp-denim fiber composites were taken and the characteristic peaks were studied. The lower thermal stability of the produced composites were confirmed by Thermo Gravimetric Analysis (TGA).

Keywords: Waste denim fiber, polypropylene (pp) resin, composite, moisture.

References:

5.

- João Marciano Laredo dos Reis. Effect of Textile Waste on the Mechanical Properties of Polymer Concrete, Materials Research 12, 63-67 (2009)
- M. Taşdemır, D. Koçak, I. Usta, M. Akalin, N. Merdan. Properties of polypropylene composite produced with silk and cotton fiber waste as reinforcement. International Journal of Polymeric Materials 56, 1155-1165 (2007).
- 3. Y. Wang, Y. Zhang, M. Polk, S. Kumar, J. Muzzy. Recycling of Carpet and Textile Fibers, Plastics And The Environment: A Handbook, Edited by A. L. Andrady (John Wiley & Sons, New York), 697-725 (2003).
- A. Lundahl, R. Fangueiro, F. Soutinho, F. Duarte. Waste Fibre Reinforced Ecocomposites, Material Science Forum 636-637, 1415-1420 (2010).
- 5. C. Hawn, Reclaiming PET bottles and Fiber Waste for Use in Synthetic Fiber Production, International Fiber Journal, p.68-72 (1999)
- 6. V. Nadkarni, Polyester Waste Recycling: Sources, Processing Methods & End Uses, International Fiber Journal, p.18-24 (1999)
- H. P. Kasserra, Recycling of Polyamide 66 and 6, Science and Technology of Polymers and Advanced Materials, Springer US, p.629-635 (1998).
- Q.T.H.Shubhra, A.Alam, M.A.Quaiyyum. Mechanical properties of polypropylene composites: A review, Journal of Thermoplastic Composite Materials 26(3) 362–391 (2011)
- M. Bakkal, M. S. Bodur, O. B. Berkalp, S. Yilmaz. The effect of reprocessing on the mechanical properties of the waste fabric reinforced composites, Journal of Materials Processing Technology 212, 2541–2548 (2012).
- S.A. Bateman, D.Y. Wu, Composite materials prepared from waste textile fiber, Journal of Applied Polymer Science 81, 3178–3185 (2001).
- 11. V. Tserki, P. Matzinos, C. Panayiotou. Effect of compatibilization on the performance of biodegradable composites using cotton fiber waste as filler. Journal of Applied Polymer Science 88, 1825-1835 (2003).
- M. M. R. Khan, M. Ibrahim, H. Mondal, M. Z. Uddin, Effect of bleach wash on the physical and mechanical properties of denim garments, Proceedings of the International Conference on Mechanical Engineering (ICME 2011), BUET, Dhaka, Bangladesh, 18-20 December 2011, ICME11-FL-022, 1-6.
- 13. F. Khedher, S. Dhouib, S. Msahli, F. Saklı. The influence of industrial finishing treatments and their succession on the mechanical properties of denim garment. AUTEX Research Journal 9, 93-100 (2009).
- 14. J. T. Lee, M. W. Kim, Y. S. Song, T. J. Kang, J. R. Youn. Mechanical properties of denim fabric reinforced poly (lactic acid). Fibers and Polymers 11, 60-66 (2010).
- F. Zaghouani, M. Ben Hassen, M. Cheikhrouhou, A comparative study of the properties of denim fabrics made of the ring, open end and hybrid cotton folded yarns. Pakistan Textile Journal 11, 54-57 (2007)
- 16. A Survey: Denim Return Project, BradmillUndare Group, MELBOURNE, Brand jeans producing Company (1999)
- S-J Kim, J-B Moon, G-H Kim, C-S Ha, Mechanical properties of polypropylene/natural fiber composites: Comparison of wood fiber and cotton fiber, Polymer Testing 27, 801–806 (2008)
- P. M. Chionna, D.Anguillesi, I. Kulinski, Z. Piorkowska, Functionalization, compatibilization and properties of polypropylene composites withhemp fibres. Compos. Sci. Technol. 66, 2218–2230 (2006).
- 19. T. Fakhrul, R.Mahbub and M.A Islam, Properties of Wood Sawdust and Wheat Flour Reinforced Polypropylene Composites, Journal of Modern Science and Technology, 1, 35-148s (2013).
- A. Karmarkar, S.S. Chauhan, J. M. Modak, M. Chanda, Mechanical properties of wood-fiber reinforced polypropylene composites: Effect of a novel compatibilizer withis ocyanate functional group , Composites Part A: Applied Science and Manufacturing, 38,227–233 (2007)

Authors:	Bahaaeldin Sadagah
Paper Title:	Remedial Measures and Modeling of Rockfall Problems Along Part of a Mountainous Road, Western Saudi Arabia

Abstract: Construction and support of mountain roads at western Saudi Arabia are always difficult tasks, where the rock masses are inhomogeneous, high-elevation, highly fractured, structurally-controlled steep slopes, sharp cliffs, and occupied by geomorphological restrictions. Al-Hada mountain road of almost 22 km long shows many incidents of rockfalls and slope failures. The rock masses along the descent are medium quality igneous rocks such as: granite, granodiorite, and gabbro. A studied section of a mountain road lies along a man-made and natural sharp slope face cut suffers from rockfall's incidents, mainly in rainy seasons. The 40 m-height rock slope-cut along the road is unsupported. The steep man-made rock slope cut is very close to the road, forming a potential source area for rockfalls. The RocFall computer program was utilized to perform modeling and mitigation on the rock slope. Input parameters such as: block size, seeder point's locations of block's seeder points, slope angle, restitution coefficients, and slope roughness were studied to model the fallen rock blocks characteristics such as: end-point, bounce height, kinetic energies, and translational and rotational velocities along the slope and the road. The remedial measures such as rockfall barriers were proposed to prevent rockfalls from reaching the road.

Keywords: Mountainous road, rainfalls, rockfalls, rock slopes.

References:

1. F. Marzouki, "Petrogenesis of Al-Hada plutonic rocks, Kingdom of Saudi Arabia," Ph.D. Thesis. University of Western

18-22

23-29

6.

- Ontario, London, 1977, unpublished.
- Y.E. Abou-Seadah, "Preliminary evaluation of the stability of Al-Hada rock slopes," Unpublished M.Sc. Thesis, Faculty of Earth Sciences, King Abdulaziz University, Jeddah, Saudi Arabia, 1982, unpublished.
- B.H. Sadagah, "Study of the failures, rockfalls and debris flows occurred along Al-Kar/Al-Hada descent road," 1213p, unpublished.
- B.H. Sadagah, M.S. Aazam, A. Al-Amri, O. Al-Hoseiny, and A. Al-Harbi, "Powerful rockfall incidents at Al-Hada descent and remedial measures," in Slope Stability 2013, Proc. of The 2013 Intnl. Symp. on Slope Stability in Open Pit Mining and Civil Engineering, 25-27 Sept., 2013, Brisbane, Australia, 783-791pp.
- B.H. Sadagah, "A vigorous debris flow incident at Al-Hada descent and remedial measures". World Landslide Forum, 2-6 Jun., 2014, Beijing, P.R.China.
- G.F. Brown, R.G. Bouge, and W.H. Maclean, "Geologic map of the Southern Hijaz Quadrangle, Kingdom of Saudi Arabia," U.S. Geol. Survey, Misc. Geol. Map I-210 A, 1962.
- Z.T. Bieniawski, "Engineering rock mass classification". John Wiley and Sons, New York, USA. 1989, 251p.
- D. Banks, "Rock mass ratings (RMRs) predicted from slope angles of natural rock outcrops," Technical note. Intnl. J. Rock Mech. Min. Sci. 2005 (42): 440-449.
- C.M. Orr, "Assessment of rock slope stability using the rock mass rating (RMR) system," Australia Inst. Min. Metall. Proc., 1992, 297(2):25-29.
- C.M. Orr, "Use of rock mass rating (RMR) system in assessing the stability of rock slopes," in Milestones in rock engineering: the Bieniawski jubilee collection, 1966.
- O.M. Abdullatif, and D.M. Cruden, "The relationship between rock mass quality and ease of excavation," Bull. Int. Assoc. Eng. Geol.; 1983, 28:183-187.
- Geological Society of London, "The description of rock masses for engineering purpose," Geological Society, Engineering Group Working Party. Q. J. Eng. Geology, 1977, Vol. 10, pp. 335-389.
- B.H. Sadagah, and Y.E. Abou-Seadah, "The remedial measures on the rock slopes to prevent rockfalls and to protect the commuters along Al-Hada descent road," King Abdulaziz City for Science and Technology, supported project No. 14-25,
- Rocscience, "DIPS User's manual," Rocscience Inc., 2013.
- E. Hoek, and W. Bray, Rock slope engineering. Institute of Mining and Metallurgy. 1980.
- B.H. Sadagah, "Rockfall Modeling Analysis and Mitigation at Mountainous Road, Saudi Arabia," GeoShanghai 2014, 26-28 May, 2014, Shanghai, P.R.China.
- B.H. Sadagah, "Rockfall analysis, modeling and mitigation of a critical section along Al-Hada descent road, Saudi Arabia." IAEG XII Congress, Torino, Italy, 15-19 Sept., 2014.
- Rocscience, "RocFall User's guide," 2012, 59p.

Authors: Nanda B. P, Radhika K. R

Paper Title: **Interference Management in Femtocell Networks using Power Control**

Abstract: Interference is the result of superimposing of two or more signals that causes change in original signal properties. Interference in wireless networks is of major concern these days. Many interference control algorithms have been proposed to overcome the same. In fact, interference can be only controlled but cannot be completely avoided. In femtocell network which is discussed in later section of this work, signal interference chances are more as in these networks, the base station are deployed in Ad-hoc environment also, these networks are responsible for in-building coverage to provide call continuity and to reduce the overhead of service providers in installing large towers and Base station antennas. The work develops the power control algorithm and simulate using MATlab to demonstrate the in-building environment with randomly distributed cell phone users with in the building and checking the interference at co-tier level (between two or more in-building base stations) both at uplink and downlink and then later introduce Dynamic Assignment of Transmit Power (DATP) algorithm to the situation and analyse how the interference is controlled.

Keywords: Base Station (BS), DL (Downlink), FBS (Femtocell Base Station), FUE (Femtocell User Equipment), Interference, MBS (Macrocell Base Station), Mobile Station (MS), MUE (Macro User Equipment), UL (Uplink).

References:

Woojune Kim, Vice President, Technology, Network Architecture, "Femtocell Network Architecture", Airvana white paper, may 2010.

- Milind M. Buddhikot, Irwin Kennedy, Frank Mullany, and Harish Viswanathan, "Ultra-Broadband Femtocells via Opportunistic Reuse of Multi-Operator and Multi-Service Spectrum", Bell Labs Technical Journal 13(4), pp. 129-144 © 2009 Alcatel-Lucent. Published by Wiley Periodicals, Inc. Published online in Wiley InterScience (www.interscience.wilev.com).
- Ronny YK and Jin Sam Kwak, Kamran E, "WiMAX Femtocell: Requirements, challenges and solutions", Femtocell wireless communications, IEEE Communications Magazine, PP: 84-91, September 2009.
- Talha Zahir, Kamran Arshad, Atsushi Nakata, and Klaus Moessner, "Interference Management in Femtocells", IEEE Communications surveys & tutorials, VOL. 15, NO. 1, pp: 293-311, FIRST QUARTER 2013.
- Mehmet Yavuz, Farhad Meshkati, and Sanjiv Nanda, Qualcomm Inc., Akhilesh Pokhariyal and Nick Johnson, ip.access Ltd., Balaji Raghothaman and Andy Richardson, Airvana Inc., "Interference Management and Performance Analysis of UMTS/HSPA+ Femtocells", Femtocell Wireless Communication, IEEE Communications Magazine, pp. 102-109, September 2009.
- Alireza Attar, Vikram Krishnamurthy and Omid Namvar Gharehshiran, university of British Columbia, "Interference Management using Cognitive Base-stations for UMTS LTE", accepted from open call, IEEE Communication Magazine, VOL. 49, NO. 8, pp: 152-159, August 2011.
- Avani Dalal: Airvana Network Solutions and Hailong Li, and Dharma P. Agrawal School of Computing Sciences and Informatics, "Effects of Femtocell Deployment on Interference to Macrocell Users in a Cellular Network", International $Conference\ on\ Computing,\ Networking\ and\ Communications,\ Workshops\ Cyber\ Physical\ System,\ 2013.$
- Rong-Terng Juang and Pangan Ting, Hsin-Paio Lin and Ding-Bing Lin, "Interference Management of Femtocell in Macrocell Networks", Wireless Telecommunications Symposium (WTS), IEEE conference publication, 2010
- Shi-Ju-rong, Zhu-Qi, "Spectrum allocation based on interference management in femtocell networks", Automatic Control and Artificial Intelligence (ACAI 2012), International Conference, 2012.
- Michael Lin and Tom La Porta, "Dynamic Interference management in Femtocells", Computer Communications and Networks (ICCCN), 2012 21st International Conference, 2012.

30-37

7.

- 11. Padmaloshani P and Nirmala S, "Downlink interference management in femtocell networks a comprehensive study and survey", Information Communication and Embedded Systems (ICICES), 2013 International Conference.
- Ngo D.T., Long Bao Le, LE-NGOC THO, Hossain E., "Distributed Interference Management in Femtocell Networks", Vehicular Technology Conference (VTC Fall), 2011 IEEE Digital Object Identifier.
- Ngo D.T., Long Bao Le, LE-NGOC THO, Hossain E., "Distributed Interference Management in Two-tier CDMA Femtocell Networks", IEEE transactions on wireless communications. VOL.11 No.3, pp. 979-989, March 2012.
- Loutfi Nuaymi, Xavier Lagrange, Philippe Godlewski, "A Power Control Algorithm for 3G WCDMA System", http://www.researchgate.net
- 15. Won Jay SONG, Byung Ha AHN, "Distributed Power Control Using the Simultaneous Mutation of Genetic Algorithms in Cellular Radio Systems", proceedings of the International Conference on Information Technology Coding and Computing (ITCC), 2002.
- 16. Motoki Morita, Yasuhiko M, Kojiro H, "Adaptive power level setting of femtocell base stations for mitigating interference with macrocells", Vehicular Technology Conference Fall (VTC 2010-Fall), IEEE Conference Publications, 2010.
- Taeyoung Lee, Jisun Yoon, Sangtae Lee, Jitae Shin, "Interference Management in OFDMA Femtocell Systems Using Fractional Frequency Reuse", pp: 176 to 180, IEEE, 2010
- 18. T.S. Rappaport, Wireless Communications: Principles and Practice. Upper Saddle River, NJ: Prentice Hall, 2002.
- 19. J. Liu, Q. Chen, and H.D. Sherali, "Algorithm design for femtocell base station placement in commercial Building Environments" 31st Annual IEEE international conference on computer communications: mini-conference, 2012
- J. Liu, Q. Chen, and H.D. Sherali, "Algorithm design for femtocell base station placement in commercial Building Environments" Technical report, department of ECE, Ohio State University, July 2011. Available: http://www2.ece.ohio-state.edu/~liu/publications/OPT_FBS_Loc.pdf