

Reference

- [1] J. Ekanayake, K. Liyanage, J. Wu, A. Yokoyama, and N. Jenkins, "Smart Grid: Technology and Applications," West Sussex, England, John Wiley & Sons, Inc., 2010.
- [2] X. Fang, G. Xue, and D. Yang, "Smart Grid -- The New and Improved Power Grid: A Survey," IEEE Communications Surveys & Tutorials, 2011.
- [3] V. C. Gungor, B. Lu, and G. P. Hancke, "Opportunities and Challenges of Wireless Sensor Networks in Smart Grid," IEEE Trans. Ind. Electron., vol. 57, no. 10, pp. 3557-3564, October 2010.
- [4] V. G. Gungor, D. Sahin, T. Kocak, S. Ergut, C. Buccella, C. Cecati, and G. P. Hancke, "Smart Grid Technologies: Communication Technologies and Standards," IEEE Transactions on Industrial Informatics, vol. 7, no. 4, November 2011.
- [5] F. Bouhafs, M. Mackay, and M. Merabti, "Links to the Future," IEEE Power & Energy Magazine, pp. 24-32, February 2012.
- [6] W. Wang, Y. Xu, and M. Khanna, "A Survey on the Communication Architectures in Smart Grid," IEEE Computer Networks, vol. 55, pp. 3604-3629, 2011.
- [7] Z. Fan, P. Kulkarni, S. Gormus, C. Efthymiou, G. Kalogridis, M. Sooriyanbandara, Z. Zhu, Z. Lambotharan, and W. H. Chin, "Smart Grid Communications: Overview of Research Challenges, Solutions, and Standardization Activities," IEEE Communication Surveys & Tutorials, vol. 99, pp. 1-18, January 2012.
- [8] http://en.wikipedia.org/wiki/Open_smart_grid_protocol.
- [9] <http://www.dlms.com/information/whatisdlmscosem/index.html>.
- [10] DLMS User Association, COSEM Architecture and Protocols, Seventh Edition.
- [11] M. Ellis, "Smart Grid: The Components and Integrating Communication," IEEE International Conference on Green Technologies Conference, pp. 1-6, April 2012, OK, USA.
- [12] J. Gao, J. Wang, B. Wang, and X. Song, "Cognitive Radio Based Communication Network Architecture for Smart Grid," IEEE International Conference on Information Science and Technology, pp. 886-888, March 2012, Hubel, China.

- [13] V. C. Gungor and D. Sahin, "Cognitive Radio Networks for Smart Grid Applications: A Promising Technology to Overcome Spectrum Inefficiency," *IEEE Vehicular Technology Magazine*, pp. 41-46, June 2012.
- [14] N. Ghazemi and S. M. Hosseini, "Comparison of Smart Grid with Cognitive Radio: Solutions to Spectrum Scarcity," *IEEE International Conference on Advanced Communication Technology (ICACT)*, pp. 898-903, February 2010, Korea.
- [15] A. Ghassemi, S. Bavarian, and L. Lampe, "Cognitive Radio for Smart Grid Communications," *IEEE International Conference on Smart Grid Communications (SmartGridComm)* 2010, pp. 297-302, Oct. 2010, BC, Canada.
- [16] R. Yu, Y. Zhang, C. Yuen, S. Xie, and M. Guizani, "Cognitive-Radio-Based Hierarchical Communications Infrastructure for Smart Grid," *IEEE Network Magazine*, vol. 25, no. 5, pp. 2-10, October 2011.
- [17] Y. Zhang, R. Yu, M. Nekovee, Y. Liu, S. Xie, and S. Gjessing, "Cognitive Machine-to-Machine Communications: Visions and Potentials for the Smart Grid," *IEEE Network Magazine*, vol. 26, no. 3, pp. 6-13, June 2012.
- [18] R. Ranganathan, R. Qiu, Z. Hu, S. Hou, Z. Chen, M. Pazos-Revilla, and N. Guo, "Cognitive Radio Network for Smart Grid: Theory, Algorithms, and Security," *International Journal of Digital Multimedia Broadcasting*, vol. 2011, pp. 1-14, 2011.
- [19] R. Ranganathan, R. Qiu, Z. Hu, S. Hou, Z. Chen, M. Pazos-Revilla, and N. Guo, "Cognitive Radio Network for Smart Grid," in book *Communication and Networking in Smart Grids*, to be published by Auerbach Publications, Taylor & Francis Group, CRC, 2011.
- [20] R. Qiu, Z. Hu, Z. Chen, and N. Guo, "Cognitive Radio Network for the Smart Grid: Experimental System Architecture, Control Algorithms, Security, and Microgrid Testbed," *IEEE Transactions on Smart Grid*, vol. 2, no. 4, pp. 724-740, December 2011.
- [21] Y. Han, J. Wang, Q. Zhao, and P. Han, "Cognitive Information Communication Network for Smart Grid," *IEEE International Conference on Information Science and Technology*, pp. 847-850, March 2012, Hubei, China.
- [22] R. Yu, Y. Zhang, and Y. Chen, "Hybrid Spectrum Access in Cognitive Neighborhood Area Networks in the Smart Grid," *IEEE International Conference on Wireless Communications and Networking (WCNC)*, pp. 1478-1483, April 2012, Guangzhou, China.

- [23] A. O. Bicen, O. B. Akan, and V. C. Gungor, "Spectrum-Aware and Cognitive Sensor Networks for Smart Grid Applications," *IEEE Communication Magazine*, vol. 50, no. 5, pp. 158-165, May 2012.
- [24] A. Yarali and S. Rahman, "Smart Grid Networks: Promises and Challenges," *Journal of Communications*, vol.7, no.6, June 2012.
- [25] M. Kim, "A Survey on Guaranteeing Availability in Smart Grid Communications," *IEEE International Conference on Advanced Communication Technology (ICACT)*, pp. 314-317, February 2012, Korea.
- [26] W. Y. Lee and I. F. Akyildiz, "Optimal spectrum sensing framework for cognitive sensor networks," *IEEE Trans. Wireless Commun.*, vol. 7, no. 4, pp. 1326-1337, April 2008.
- [27] H. Pham, Y. Zhang, P. Engelstad, T. Skeie, and F. Eliassen, "Energy minimization approach for optimal cooperative spectrum sensing in sensor-aided cognitive radio networks," *IEEE International Conference Wireless Internet Conference (WICON)*, pp. 1-9, March 2010, Oslo, Norway.
- [28] R. Deng, S. Maharjan, X. Cao, J. Chen, Y. Zhang, and S. Gjessing, "Sensing-Delay Tradeoff for Communication in Cognitive Radio enabled Smart Grid," *IEEE International Conference on Smart Grid Communications (SmartGridComm) 2011*, pp. 155-160, October 2011, Hangzhou, China.
- [29] I. F. Akyildiz, W. Y. Lee, M. C. Vuran, and S. Mohanty, "NeXt generation/dynamic spectrum access/cognitive radio wireless networks: a survey," *The International Journal of Computer and Telecommunications Networking*, vol. 50, no. 13, pp. 2127-2159, September 2006.
- [30] Y. C. Liang, K. C. Chen, G. Y. Li, and P. Mahonen, "Cognitive Radio Networking and Communications: An Overview," *IEEE Trans. On Vehicular Technology*, vol. 60, no. 7, pp. 3386-3407, September 2011.
- [31] L. Berlemaun and S. Mangold, "Cognitive Radio and Dynamic Spectrum Access," West Sussex, England, John Wiley & Sons, Inc., 2009.
- [32] P. Steenkiste, D. Sicker, G. Minden, and D. Raychaudhuri, "Future Directions in Cognitive Radio Network Research," *NSF Workshop Report*, pp. 1-40, June 2009.

- [33] M. Nekovee, "Cognitive Radio Access to TV White Spaces: Spectrum Opportunities, Commercial Applications and Remaining Technology Challenges," IEEE Symposium on New Frontiers in Dynamic Spectrum, pp. 1-10, 2010.
- [34] G. Gur and F. Alagoz, "Green Wireless Communications via Cognitive Dimension: An Overview," IEEE Network, vol. 25, no. 2, pp. 50-56, April 2011.
- [35] J. Wang, M. Ghosh, and K. Challapali, "Emerging Cognitive Radio Applications: A Survey," IEEE Communications Magazine, vol. 49, no. 3, pp. 74-81, 2011.
- [36] A. Ghasemi and E. S. Sousa, "Spectrum Sensing in Cognitive Radio Networks: Requirements, Challenges and Design Trade-off," IEEE Communications Magazine, vol. 46, no. 4, pp. 32-39, April 2008.
- [37] M. Subhedar and G. Birajdar, "Spectrum Sensing Techniques in Cognitive Radio Networks: A Survey," International Journal of Next-Generation Networks, vol. 3, no. 2, pp. 37-51, June 2011.
- [38] S. Haykin, D. J. Thomson, and J. H. Reed, "Spectrum Sensing for Cognitive Radio," IEEE Proceedings, vol. 97, no. 5, pp. 849-877, 2009.
- [39] T. Yucek and H. Arslan, "A Survey of Spectrum Sensing Algorithms for Cognitive Radio Applications," IEEE Communications Survey & Tutorials, vol. 11, no. 1, pp. 116-130, April 2009.
- [40] E. Axell, G. Leus and E. G. Larsson, "Overview of Spectrum Sensing for Cognitive Radio," IEEE International Conference on Workshop on Cognitive Information Processing (CIP), pp. 322-327, June 2010, Tuscany, Italy.
- [41] E. Axell, G. Leus, E. G. Larsson, and H. V. Poor, "Spectrum Sensing for Cognitive Radio: State-of-the-art and recent advances," IEEE Signal Processing Magazine, vol. 29, no. 3, pp. 101-116, May 2012.
- [42] Z. Chen, N. Guo, and R. C. Qiu, "Demonstration of Real-time Spectrum Sensing for Cognitive Radio," IEEE Communication Letters, vol. 14, no. 10, pp. 915-917, 2010.
- [43] S.J. Shellhammer and G. Chouinard, "Spectrum Sensing Requirements Summary," IEEE 802.22-06/0089r1, June 2006.
- [44] T. Yucek and H. Arslan, "A Survey of Spectrum Sensing Algorithms for Cognitive Radio Applications," IEEE Commun. Surveys Tutorials, vol. 11, no. 1, 2009, pp. 116-130.

- [45] L. Lu et al., "Ten Years of Research in Spectrum Sensing and Sharing in Cognitive Radio," *EURASIP J. Wireless Commun. Netw.*, Jan. 2012, pp. 28–43.
- [46] A. Bagwari and B. Singh, "Comparative Performance Evaluation of Spectrum Sensing Techniques for Cognitive Radio Networks," *Int. Conf. CICON*, Mathura, India, Nov. 3–5, 2012, pp. 98–105.
- [47] S.A. Malik et al., "Comparative Analysis of Primary Transmitter Detection Based Spectrum Sensing Techniques in Cognitive Radio Systems," *Australian J. Basic Appl. Sci.*, vol. 4, no. 9, 2010, pp. 4522–4531.
- [48] H. Yousry et al., *Wireless Microphone Sensing Using Cyclostationary Detector*. Accessed June 16, 2012. http://conf-scoop.org/inct-2012/14_yousry_Hatem.pdf
- [49] W. Ejaz et al., "Improved Local Spectrum Sensing for Cognitive Radio Networks," *EURASIP J. Adv. Signal Process.*, vol. 2012, Nov. 2012, pp. 242–251.
- [50] A.K. Dey and A. Banerjee, "On Primary User Detection Using Energy Detection Technique for Cognitive Radio," *National Conf. Commun.*, Guwahati, India, Jan. 16–18, 2009.
- [51] Y. Zeng, C. Koh, and Y. Liang, "Maximum Eigenvalue Detection: Theory and Application," *IEEE Int. Conf. Commun.*, Beijing, China, May 19–23, 2008, pp. 4160–4164.
- [52] Y. Zeng and Y. Liang, "Spectrum-Sensing Algorithms for Cognitive Radio Based on Statistical Covariances," *IEEE Trans. Veh. Technol.*, vol. 58, no. 4, May 2009, pp. 1804–1815.
- [53] D. Simunic and T.S. Dhope, "Hybrid Detection Method for Spectrum Sensing in Cognitive Radio," *Proc. Int. Convention MIPRO*, Opatija, Croatia, May 21–25, 2012, pp. 765–770.
- [54] A. Mate, K.-H. Lee, and I.-T. Lu, "Spectrum Sensing Based on Time Covariance Matrix Using GNU Radio and USRP for Cognitive Radio," *IEEE Long Island Syst. Appl. Technol. Conf.*, Farmingdale, NY, USA, May 6, 2011, pp. 1–6.
- [55] Y. Zeng and Y. Liang, "Maximum-Minimum Eigenvalue Detection for Cognitive Radio," *IEEE Int. Symp. PIMRC*, Athens, Greece, Sept. 3–7, 2007, pp. 1–5.
- [56] Y. Zeng and Y.C. Liang, "Eigenvalue-Based Spectrum Sensing Algorithms for Cognitive Radio," *IEEE Trans. Commun.*, vol. 57, no. 6, June 2009, pp. 1784–1793.
- [57] A.T. Teshome, "FPGA-Based Eigenvalue Detection Algorithm for Cognitive Radio," M.S. thesis, Dept. of Electron., Eng., University of Gävle, Sweden, 2010.
- [58] P. Zhang and R.C. Qiu, "GLRT-Based Spectrum Sensing with Blindly Learned Feature under Rank-1 Assumption," *IEEE Trans. Commun.*, vol. 61, no. 1, Jan. 2013, pp. 87–96.
- [59] C. Clanton, M. Kenkel, and Y. Tang, "Wireless Microphone Signal Simulation Method," IEEE 802.22-07/0124r0, Mar. 2007.

- [60] Hassan, E.S. "Spectrum sensing and power efficiency trade-off optimisation in cognitive radio networks over fading channels" *IET Commun.*, 2013, Vol. 7, Iss. 3, pp. 198-205.
- [61] O.Dong-Chan and L.Yong-Hwan "Energy Detection Based Spectrum Sensing for Sensing Error Minimization in Cognitive Radio Networks" *International Journal of Communication Networks and Information Security (IJCNIS)*, Vol. 1, No. 1, April 2009.
- [62] O.Dong-Chan and J.Myung-Sung "Optimal Spectrum Sensing Time Considering Spectrum Handoff due to False Alarm in Cognitive Radio Networks" *IEEE Communications letters*, Vol.13, No. 12, December 2009, pp. 899-901.
- [63] A.Gorcin et al., "An Adaptive Threshold Method for Spectrum Sensing in Multi-Channel Cognitive Radio Networks" *IEEE 17th International Conference on Telecommunications (ICT)*, Doha, 4-7 April 2010, pp. 425 - 429.
- [64] P.R. Nair, A.P.Vinod and A.K.Krishna, " An Adaptive Threshold Based Energy Detector for Spectrum Sensing in Cognitive Radios at Low SNR, " International Conference on Communication Systems (ICCS) IEEE, Singapor, 17-19 Nov. 2010,pp. 574 - 578.
- [65] P.R. Nair, "A fast sensing algorithm for spectrum detection in cognitive radios", Student thesis, Nanyang Technological University, College of Engineering, School of Computer Engineering (SCE), 2012.
- [66] L.I Smith, A Tutorial on Principal Component Analysis., Accessed Feb. 26, 2012. http://www.cs.otago.ac.nz/cosc453/student_tutorials/principal_components.pdf
- [67] K. Srisomboon et al., "A Performance Comparison of Two PWS Filters in Different Domain for Image Reconstruction Technique under Different Image Types," Int. Conf. ECTI-CON, Hua Hin, Thailand, May 16–18, 2012, pp. 168–171.
- [68] S. Maleki, A. Pandharipande and G. Leus, "Two-stage spectrum sensing for cognitive radios," IEEE International Conference on Acoustics Speech and Signal Processing (ICASSP), Dallas, TX, Mar. 2010.
- [69] Prashob R. Nair, et al., "A Fast Two- Detector for Spectrum Sensing in Cognitive Radios", in Proc. IEEE VTC San Francisco, September 2011.
- [70] Z. Li, H. Wang, and J. Kuang, "A two-step spectrum sensing scheme for cognitive radio network," IEEE International Conference on Information Science and Technology, March 2011.

- [71] Suwanboriboon, S. and Lee, W., "Performance comparison of Two-stage Spectrum Sensing Techniques," EECN36, Kanchanaburi, Thailand, December 12-14, 2013.
- [72] Suwanboriboon, S. and Lee, W., "A novel two-stage spectrum sensing for cognitive radio system," IEEE International Conference on Communications and Information Technologies (ISCIT), 4-6 Sept. 2013, pp. 176 - 181.
- [73] T. Teshome, "FPGA based Eigenvalue Detection Algorithm for Cognitive Radio", Student thesis, University of Gävle, Faculty of Engineering and Sustainable Development, Department of Electronics, Mathematics and Natural Sciences, 2010.
- [74] Geethu, S. and Narayanan, G.L., "A novel selection based on hybrid spectrum sensing technique for cognitive radios," Power Control and Embedded Systems (ICPCES), 2012 2nd International Conference, Allahabad, India, pp. 1 - 6, 17-19 Dec. 2012.
- [75] M. Lopez-Benitez and F. Casadevall, "Signal Uncertainty in Spectrum Sensing for Cognitive Radio," IEEE Trans. Commun., vol. 61, issue. 4, 2013, pp. 1231–1241.
- [76] L. Chenxi and Y. Miao, "A Distance-Weighed Algorithm Based on Maximum-Minimum Eigenvalues for Cooperative Spectrum Sensing," Int. Conf. WiCOM, Wuhan, China, September 23-25, 2011, pp. 1 - 4.
- [77] N. Zarin, S.A. Mahmud, and I. Khan, "Relay based cooperative spectrum sensing in cognitive radio networks over rayleigh fading channel with path loss effects," Int. Conf. INMIC, Islamabad, Pakistan, December 13-15, 2012, pp. 291 - 296.

Publication

- [1] **Wilaiporn Lee**, Kanabadee Srisomboon and Akara Prayote, "Fast Spectrum Sensing with Coordinate System in Cognitive Radio Networks, ETRI Journal, Vol. 37, No. 3, pp. 491-501, June 2015.
- [2] Kanabadee Srisomboon, Akara Prayote and **Wilaiporn Lee**, Two-stage Spectrum Sensing for Cognitive Radio under Noise Uncertainty, The 8th International Conference on Mobile Computing and Ubiquitous Networking 2015 (ICMU2015), pp. 19-24, January 2015, Hakodate, Japan.
- [3] Kanabadee Srisomboon, Akara Prayote and **Wilaiporn Lee**, Double Constraints Adaptive Energy Detection for Spectrum Sensing in Cognitive Radio Networks, The 8th International Conference on Mobile Computing and Ubiquitous Networking 2015 (ICMU2015), pp. 76-77, January 2015, Hakodate, Japan.
- [4] Adisorn Kheaksong and **Wilaiporn Lee**, Packet Transfer of DLMS/COSEM Standards for Smart Grid, The 20th Asia-Pacific Conference on Communications 2014 (APCC2014), pp. 391-396, October 2014, Chonburi, Thailand.