

References

- [1] W. R. Heinzelman, A. P. Chandrakasan and H. Balakrishnan, “Energy efficient communication protocol for wireless microsensor networks,” in *Proceedings of the 33rd Hawaiian International Conference on System Sciences*, January 2000, pp. 1–10.
- [2] Jennifer Yick, Biswanath Mukherjee and Dipak Ghosal, “Wireless sensor network survey,” *Computer Networks*, vol. 52, pp. 2292–2330, 2008.
- [3] I.F. Akyildiz, W. Su, Y. Sankarasubramaniam and E. Cayirci, “Wireless sensor networks: A survey,” *Computer Network*, vol. 38, pp. 393–422, 2002.
- [4] Holger Karl and Andreas Willig, *Protocols and Architectures for Wireless Sensor Networks*. Wiley, June 2005.
- [5] Daniele Puccinelli and M. Haenggi, “Wireless sensor networks: Applications and challenges of ubiquitous sensing,” *IEEE Circuits System Mag*, vol. 5, pp. 19–31, 2005.
- [6] Ameer Ahmed Abbasi a and Mohamed Younis, “A survey on clustering algorithms for wireless sensor networks,” *Computer Communications*, vol. 30, pp. 2826–2841, June 2007.
- [7] Thomas Watteyne, A. Molinaro, M. G. Richich and M. Dohleri, “From MANET to IETF ROLL standardization: A paradigm shift in wsn routing

-
- protocols,” *IEEE Communications surveys and Tutorials*, vol. 13/4, pp. 688–707, 2011.
- [8] Geoff V Merrett and Yen Kheng Tan, *Wireless Sensor Networks: Application-Centric Design*. InTech, December 2010.
- [9] C. Y. Chong and S. P. Kumar, “Sensor networks: Evolution, opportunities, and challenges,” *Proceedings of the IEEE*, vol. 91, pp. 1247–1256, 2003.
- [10] Jason Hill, Robert Szewczyk, Alec Woo, Seth Hollar, David Culler and Kristofer Pister, “System architecture directions for networked sensors,” *ACM SIGPLAN*, vol. 35(11), pp. 93–104, Nov 2000.
- [11] B. Krishnamachari, *Networking Wireless Sensors*. Cambridge University Press, New York: Cambridge University Press, 2005.
- [12] J.A. Stankovic, T. E. Abdelzaher, LU Chenyang, Lui Sha and J.C. Hou, “Real-time communication and coordination in embedded sensor networks,” *Proceedings of the IEEE*, vol. 91(7), pp. 1002–1022, July 2003.
- [13] Jukka Suhonen, Mikko Kohvakka, Ville Kaseva, Timo D. Hamalainen and Marko Hannikainen, *Low-Power Wireless Sensor Networks-Protocols, Services and Applications*. New York: Springer, 2012.
- [14] J. Suhonen, M. Kohvakka, V. Kaseva, Timo D. Hamalainen and M. Hannikainen, “Design, implementation, and experiments on outdoor deployment of wireless sensor network for environmental monitoring,” in *Proceedings, 6th International Workshop on Embedded Computer Systems: Architectures, Modeling, and Simulation (SAMOS’2006)*, Samos, Greece, July 2006, pp. 109–121.
-

-
- [15] Adrian Perrig, John Stankovic and David Wagner, “Security in wireless sensor networks,” *Communications of the ACM*, vol. 47(6), pp. 53–57, June 2004.
- [16] Amitabha Ghosh and Sajal K Das, “Coverage connectivity issues in wireless sensor networks: A survey,” *Journal of Pervasive and Mobile Computing*, vol. 4(3), pp. 303–304, June 2008.
- [17] J. R. Moyne and D. M. Tilbury, “The emergence of industrial control networks for manufacturing control, diagnostics, and safety data,” *Proceedings of the IEEE*, vol. 95(1), p. 2947, 2007.
- [18] Joao P. Hespanha, Payam Naghshtabrizi and Yonggang Xu, “A survey of recent results in networked control systems,” *Proceedings of the IEEE*, vol. 95(1), pp. 138–162, 2007.
- [19] WSN articles. [Online]. Available: http://wsn.oversigma.com/wiki/index.php?title=WSN_Platforms
- [20] Uday B Desai, B. N. Jain and S. N. Merchant, “Wireless sensor networks: Technology roadmap,” Indian Institute of Technology, Bombay, Tech. Rep., June 2007.
- [21] J Rabaey, M J Ammer, J L da Silva, D Patel and S Roundy, “Picoradio supports ad hoc ultra-low power wireless networking,” *IEEE Compute*, vol. 33(7), pp. 42–48, July 2000.
- [22] A Liers, H Ritter and J Schiller, “First steps with the scatterweb sensor nodes,” Institute of Computer Systems and Telematics, Freie University, Berlin, Tech. Rep., April 2005.
- [23] Ana Belen Garcia Hernando, Jose Fernan Martinez Ortega and Juan Manuel Lopez Navarro, *Problem Solving for Wireless Sensor Networks*. Springer, 2008.
-

-
- [24] Michael S. Bruno and Alan F. Blumberg, “The stevens integrated maritime surveillance forecast system: Expansion and enhancement,” Stevens Institute of Technology, Hoboken, New Jersey, Tech. Rep. N00014-03-1-0633, 2006.
- [25] Joe Evans, Dipankar Raychaudhuri and Sanjoy Paul, “Overview of wireless, mobile and sensor networks in GENI,” Wireless Working Group, Tech. Rep. GDD 06-14, September 2006.
- [26] Tomasz Naumowicz, Robin Freeman, Holly Kirk, Ben Dean, Martin Calsyn, Achim Liers, Alexander Braendle, Tim Guilford and Jochen H. Schiller, “Wireless sensor network for habitat monitoring on skomer island,” in *IEEE Conference on Local Computer Networks-LCN*, Denver, Colorado, 2010, pp. 882–889.
- [27] Kavi K. Khedo, Rajiv Perseedoss and Avinash Mungur, “A wireless sensor network air pollution monitoring system,” *International Journal of Wireless and Mobile Networks*, vol. 2(2), pp. 31–45, May 2010.
- [28] Sensicast Inc. (2008). [Online]. Available: <http://www.sensicast.com/>
- [29] L. Schwiebert, S.K.S. Gupta and J. Weinamann, “Research challenges in wireless networks of biomedical sensors,” in *ACM SIGMOBILE 2001*, Rome, July 2001, pp. 151–165.
- [30] IBM. (2005) Personal care connect mobile health monitoring solution. [Online]. Available: http://www-03.ibm.com/industries/healthcare/doc/content/bin/Personal_Care_Connect_12_05_1.pdf
- [31] Van Laerhoven K and et al., “Ubihealth2004,” in *Proceedings of the 3rd International Workshop on Ubiquitous Computing for Pervasive Healthcare Applications*, 2004.
-

-
- [32] B. Sibbald, “Use computerized systems to cut adverse drug events: report,” *Canadian Medical Association Journal*, vol. 164 (13), 2001.
- [33] Edward Sazonov, Kerop Janoyan and Ratan Jha, “Wireless intelligent sensor network for autonomous structural health monitoring,” in *Proceedings of SPIE*, San Diego, CA, 2004, pp. 305–314.
- [34] Feng Zhao and Leonidas Guibas, *Wireless Sensor Networks: An Information Processing Approach*. Morgan Kaufmann, 2004.
- [35] Rahul C. Shah and Jan M. Rabaey, “Energy aware routing for low energy ad hoc sensor networks,” in *Proceedings of IEEE WCNC2002*, Orlando, Florida USA, March 2002, pp. 350–355.
- [36] J. N. Al-Karaki and A. E. Kamal, “Routing techniques in wireless sensor networks: a survey,” *Wireless Communications, IEEE*, vol. 11(6), pp. 6–28, December 2004.
- [37] Jason Hil, Robert Szewczyk, Alec Woo, Seth Hollar, David Culler and Kristofer Pister, “System architecture directions for networked sensors,” in *Proceedings of ASPLOS IX 2000*, 2000.
- [38] Chalermek Intanagonwiwat, Ramesh Govindan and Deborah Estrin, “Directed diffusion: A scalable and robust communication paradigm for sensor networks,” in *Proceedings of ACM Mobicom*, Boston, 2000, pp. 56–67.
- [39] Baruch Awerbuch, David Holmer, Herbert Rubens, Kirk Chang and I. J. Wang, “The pulse protocol: sensor network routing and power saving,” in *Proceeding of IEEE Military Communication Conference (MIL-COM 2004)*, 31 October to 3 November 2004, pp. 662–667.
- [40] Dao Yuan, Jinyoung Yang and Daeyoung Kim, “Ripple flooding in wireless sensor networks,” in *Proceeding of PE-WASUN 2011*, New York, 2011, pp. 41–48.
-

-
- [41] S. Hedetniemi and A. Liestman, “A survey of gossiping and broadcasting in communication networks,” *IEEE Network*, vol. 18 (4), pp. 319–349, 1988.
- [42] W.R. Heinzelman, J. Kulik and H. Balakrishnan, “Adaptive protocols for information dissemination in wireless sensor networks,” in *Proceedings of the ACM MobiCom99*, Seattle, Washington, 1999, pp. 174–185.
- [43] J. Kulik, W.R. Heinzelman and H. Balakrishnan, “Negotiationbased protocols for disseminating information in wireless sensor networks,” *Wireless Networks*, vol. 8(2/3), pp. 169–185, 2002.
- [44] A. Boukerche, X. Cheng, and J. Linus, “Energy-aware data-centric routing in microsensor networks,” in *Proceedings of ACM MSWiM, in conjunction with ACM MobiCom*, San Diego, CA, September 2003, pp. 42–49.
- [45] Y. Yao and J. Gehrke, “The cougar approach to in-network query processing in sensor networks,” in *SGIMOD Record*, September 2002, pp. 9–18.
- [46] N. Sadagopan, B. Krishnamachari, and A. Helmy, “The ACQUIRE mechanism for efficient querying in sensor networks,” in *Proceedings of the 1st IEEE International Workshop on Sensor Network Protocols and Applications (SNPA)*, Anchorage, AK, May 2003, pp. 149–155.
- [47] Gerhard P. Hancke and C. Jaco Leuschner, “SEER: a simple energy efficient routing protocol for wireless sensor networks,” *South African Computer Journal*, pp. 17–24, 2007.
- [48] F. Ye, G. Zhong, S. Lu and L. Zhang, “GRAdient broadcast: a robust data delivery protocol for large scale sensor networks,” *Wireless Networks*, vol. 11(3), pp. 285–298, May 2005.
-

-
- [49] Y. Yu, D. Estrin and R. Govindan, “Geographical and energy-aware routing: A recursive data dissemination protocol for wireless sensor networks,” UCLA Computer Science Department, Los Angeles, CA, USA, Tech. Rep. TR-01-0023, May 2001.
- [50] Yu Wang, Wen-Zhan Song, Weizhao Wang, Xiang-Yang Li and Teresa A. Dahlberg, “LEARN: Localized energy aware restricted neighborhood routing for ad hoc networks,” *Sensor and Ad Hoc Communication and Networks*, vol. 2, pp. 508–517, 2006.
- [51] Ivan Stojmenovic and Xu Lin, “Power-aware localized routing in wireless networks,” *IEEE Transactions on Parallel Distributed Systems*, vol. 12(11), pp. 1122–1133, October 2001.
- [52] Benjie Chen, Kyle Jamieson, Hari Balakrishnan and Robert Morris, “SPAN: an energy-efficient coordination algorithm for topology maintenance in ad hoc wireless networks,” *Wireless Networks*, vol. 8(5), pp. 481–494, September 2002.
- [53] R. Mailler, V. Lesser and B. Horling, “Cooperative negotiation for soft real-time distributed resource allocation,” in *Proceedings of the second international joint conference on Autonomous agents and multiagent systems*, New York, NY, USA, 2003, pp. 576–583.
- [54] C. Intanagonwiwat, R. Govindan, D. Estrin, J. Heidemann and F. Silva, “Directed diffusion for wireless sensor networking,” *IEEE/ACM Transactions on Networking*, vol. 11(1), pp. 2–16, Feb 2003.
- [55] A. Ouadjaout, Y. Challal, N. Lasla and M. Bagaa, “SEIF: secure and efficient intrusion-fault tolerant routing protocol for wireless sensor networks,” in *Proceedings of the Third International Conference on Availability, Reliability and Security (ARES)*, March 2008, pp. 503–508.
-

-
- [56] Patrick P. C. Lee, Vishal Misra and Dan Rubenstein, “Distributed algorithms for secure multipath routing in attack-resistant networks,” *IEEE/ACM Transactions on Networking*, vol. 15 (6), pp. 1490–1501, 2007.
- [57] N. Nasser and Y. Chen, “SEEM: secure and energy-efficient multipath routing protocol for wireless sensor networks,” *Computer Communications, Elsevier*, vol. 30 (1112), pp. 2401–2412, September 2007.
- [58] S. Dulman et al., “Trade-off between traffic overhead and reliability in multipath routing for wireless sensor networks,” in *WCNC Workshop*, New Orleans, LA, March 2003.
- [59] J.H. Chang and L. Tassiulas, “Maximum lifetime routing in wireless sensor networks,” in *Proc. Adv. Telecommun. and Info. Distrib. Research Prog*, College Park, MD, March 2000.
- [60] David Braginsky and Deborah Estrin, “Rumor routing algorithm for sensor networks,” in *First ACM Int. Workshop on Wireless Sensor Networks and Applications(WSNA)*, Atlanta, September 2002, pp. 22–31.
- [61] L. Cheng, Y. Chen, C. Chen and J. Ma, “Query-based data collection in wireless sensor networks with mobile sinks,” in *Proceedings of the 2009 International Conference on Wireless Communications and Mobile Computing*, Leipzig, Germany, June 2009, pp. 1157–1162.
- [62] Z. Chen, S. Liu, and J. Huang, “Multi-tier grid routing to mobile sink in large scale wireless sensor networks,” *Journal of Networks*, vol. 6, pp. 765–773, May 2011.
- [63] Jalel Ben-Othman and Bashir Yahya, “Energy efficient and QoS based routing protocol for wireless sensor networks,” *Journal of Parallel and Distributed Computing*, vol. 70(8), pp. 849–857, August 2010.
-

-
- [64] Emad Felemban, Chang-Gun Lee and Eylem Ekic, “MMSPEED: Multipath multispeed protocol for QoS guarantee of reliability and timelines in wireless sensor networks,” *IEEE Transactions on Mobile Computing*, vol. 5 (6), pp. 738–754, June 2006.
- [65] T. He, J.A. Stankovic, C. Lu and T. Abdelzaher, “SPEED: A stateless protocol for real-time communication in sensor networks,” in *Proceedings of the 23rd International Conference on Distributed Computing Systems*, Providence, RI, May 2003, pp. 19–22.
- [66] K. Sohrabi and J. Pottie, “Protocols for self-organization of a wireless sensor network,” *IEEE Pers. Commun*, vol. 7(5), pp. 16–27, October 2000.
- [67] O. Younis, M. Krunz and S. Ramasubramanian, “Node clustering in wireless sensor networks: Recent developments and deployment challenges,” *IEEE Network*, vol. 20(3), pp. 20–25, 2006.
- [68] Mohammad Ilyas and Imad Mahgoub, *Handbook of Sensor Networks: Compact Wireless and Wired Sensing Systems*. Washington, D.C: CRC Press, 2005.
- [69] W. B. Heinzelman, A. P. Chandrakasan and H. Balakrishnan, “An application specific protocol architecture for wireless microsensor networks,” *IEEE Transactions on Wireless Communications*, vol. 1(4), pp. 660–670, 2002.
- [70] S. Lindsey and C. Raghavendra, “PEGASIS: Power-efficient gathering in sensor information systems,” in *Proceeding of IEEE Aerospace conference*, 2002, pp. 1125–1130.
- [71] S. Bandyopadhyay and E. Coyle, “An energy efficient hierarchical clustering algorithm for wireless sensor networks,” in *22nd Annual Joint Conf.*
-

-
- of the IEEE Computer and Communications Societies (INFOCOM 2003)*, San Francisco, CA, April 2003.
- [72] S. M Jung, Y. Han and T. Chung, “The concentric clustering scheme for efficient energy consumption in the pegasis,” in *Proceedings of the 9th International Conference on Advanced Communication Technology*, Gangwon-Do, Korea, February 2007, pp. 260–265.
- [73] S. Soro and W. Heinzelman, “Prolonging the lifetime of wireless sensor networks via unequal clustering,” in *Proceedings of the 5th IEEE International Workshop on Algorithms for Wireless, Mobile, Ad Hoc and Sensor Networks (WMAN)*, Denver, CO, USA, April 2005, pp. 236–243.
- [74] Yaling Tao, Yongbing Zhang and Yusheng Ji, “Flow-balanced routing for multi-hop clustered wireless sensor networks,” *Ad Hoc Networks*, vol. 11(1), pp. 541–554, January 2013.
- [75] M. Ye, C. F. Li, G. Chen and J.Wu, “An energy efficient clustering scheme in wireless sensor networks,” *Ad Hoc and Sensor Wireless Networks*, vol. 3, pp. 99–119, April 2006.
- [76] A. Manjeshwar and D. P. Agarwal, “TEEN: A routing protocol for enhanced efficiency in wireless sensor networks,” in *Proceedings of the 15th International Parallel and Distributed Processing Symposium (IPDPS)*, San Francisco, CA, USA, April 2001, pp. 2009–2015.
- [77] Manjeshwar. A and D. P. Agarwal, “APTEEN: A hybrid protocol for efficient routing and comprehensive information retrieval in wireless sensor networks,” in *Proceedings of the 2nd International Workshop on Parallel and Distributed Computing Issues in Wireless Networks and Mobile computing*, Lauderdale, FL, USA, April 2002, pp. 195–202.
-

-
- [78] O. Younis and S. Fahmy, "HEED: A hybrid, energy-efficient, distributed clustering approach for ad hoc sensor networks," *IEEE Transactions on Mobile Computing*, vol. 3 (4), pp. 366–379, 2004.
- [79] Sangho Yi, Junyoung Heo, Yookun Cho and Jiman Hong, "PEACH: Power-efficient and adaptive clustering hierarchy protocol for wireless sensor networks," *Computer Communications*, vol. 30(14-15), pp. 2842–2852, October 2007.
- [80] P. Ding, J. Holliday and A. Celik, "Distributed energy efficient hierarchical clustering for wireless sensor networks," in *Proceedings of the IEEE International Conference on Distributed Computing in Sensor Systems (DCOSS05)*, Marina Del Rey, CA, USA, June 2005, pp. 322–339.
- [81] Asif U. Khattak, Ghalib A. Shah and M. Ahsan, "Two-tier cluster based routing protocol for wireless sensor networks," in *Proceeding of IEEE/IFIP 8th International Conference on Embedded and Ubiquitous Computing (EUC)*, Hong Kong, December 2010, pp. 410–415.
- [82] Jiguo Yu, Yingying Qi, Guanghui Wang and Xin Gu, "A cluster-based routing protocol for wireless sensor networks with nonuniform node distribution," *International Journal of Electronics and Communications (AEU)*, vol. 66(1), pp. 54–61, 2012.
- [83] Dali Wei, Yichao Jin, Serdar Vural, Klaus Moessner and Rahim Tafazolli, "An energy-efficient clustering solution for wireless sensor networks," *IEEE Transactions on Wireless Communications*, vol. 10(11), pp. 3973–3983, November 2011.
- [84] Xiang Mina, Shi Wei-ren, Jiang Chang-jiang and Zhang Ying, "Energy efficient clustering algorithm for maximizing lifetime of wireless sensor networks," *International Journal of Electronics and Communications (AEU)*, vol. 64(4), pp. 289–298, April 2010.
-

-
- [85] Dilip Kumar, T. C. Aseri and R. B. Pate, “EEHC: Energy efficient heterogeneous clustered scheme for wireless sensor networks,” *Computer Communications*, vol. 32, pp. 662–667, 2009.
- [86] Xin Song, Cuirong Wang, Jing Gao and Xi Hu, “DLRDG: distributed linear regression-based hierarchical data gathering framework in wireless sensor network,” *Neural computing and applications*, pp. 1–15, November 2012.
- [87] Navin Gautam and Jae-Young Pyun, “Distance aware intelligent clustering protocol for wireless sensor networks,” *IEEE Journal of Communications and Networks*, vol. 12(2), pp. 122–129, April 2010.
- [88] S.D. Muruganathan, D.C.F. Ma, R.I. Bhasin and A.O. Fapojuwoy, “A centralized energy-efficient routing protocol for wireless sensor networks,” *IEEE Radio communications*, vol. 43(3), pp. S8–S13, March 2005.
- [89] Amini N., M. Fazeli, S. G. Miremadi and M. T. Manzuri, “Distance-based segmentation: An energy-efficient clustering hierarchy for wireless microsensor networks,” in *Proc. of the 5th Annual Conf. on Communication Networks and Services Research (CNSR 2007)*, Fredericton, Canada, May 2007, pp. 18–25.
- [90] Navin Gautam, Won-Il Lee and Jae-Young Pyun, “Track-sector clustering for energy efficient routing in wireless sensor networks,” in *Ninth IEEE International Conference on Computer and Information Technology*, Xiamen, China, October 2009, pp. 116–121.
- [91] Md. Aquil Mirza and Rama Murthy Garimella, “PASCAL: Power aware sectoring based clustering algorithm for wireless sensor networks,” in *Proceedings of International Conference on Information Networking (ICOIN 2009)*, January 2009, pp. 1–6.
-

-
- [92] X. Zhou, M. Wu and J. Xu, “BPEC: An energy-aware distributed clustering algorithm in wsns,” *Journal of Computer Research and Development*, vol. 46(5), pp. 723–730, 2009.
- [93] X. B. Wu and G. H. Chen, “The energy hole problem of nonuniform node distribution in wireless sensor networks,” *Chinese Journal of Computers*, vol. 31(2), pp. 1–9, 2008.
- [94] Y. C. Jia and Y. H. Liu, “Hierarchical clustering routing scheme based on leach in wireless sensor networks,” *Computer Engineering*, vol. 35(11), pp. 74–76, 2009.
- [95] Y. Li, X. H. Zhang and Y. Z. Li, “Algorithm of cluster head multi-hops based on leach,” *Computer Engineering and Design*, vol. 28(17), pp. 4158–4160, 2008.
- [96] C. F. Li, M. Ye, G. H. Chen and J. Wu, “An energy-efficient unequal clustering mechanism for wireless sensor networks,” in *In Proceedings of the IEEE International Conference on Mobile Adhoc and Sensor Systems Conference*, Washington, DC, USA, November 2005, pp. 1–8.
- [97] Xinyuan Zhao and Neng Wang , “An unequal layered clustering approach for large scale wireless sensor networks,” in *In proceeding of 2nd International Conference on Future Computer and Communication (ICFCC)*, 2010, May 2010, pp. 750–756.
- [98] Guihai Chen, Chengfa Li, Mao Ye and JieWu, “An unequal cluster-based routing protocol in wireless sensor networks,” *Wireless Networks*, vol. 15(2), pp. 193–207, February 2009.
-