

Selected papers from Chinacom'06

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The special issue consists of four papers addressing recent state-of-the-art research of wireless communication and networking technologies, which is timely and valuable for future analysis, implementation and experiments.

The first two papers propose efficient and secure routing algorithms for wireless sensor networks. In the first paper “A Dynamic-Clustering Reactive Routing Algorithm for Wireless Sensor Networks,” Bin Guo and Zhe Li define a node model based on the structure and transmission principle of neuron and propose a dynamic clustering reactive routing algorithm for large-scale wireless sensor networks. Two accumulation schemes are also designed to further improve the efficiency of data collection. In the paper “Proactive mitigation of impact of wormholes and sinkholes on routing security in energy-efficient wireless sensor networks”, Huzaifa Al Nahas, et al., propose a novel routing approach, Secure-Path Routing (SPR), to mitigate the impact of undetected compromised nodes on routing by increasing traffic flow over legitimate routes. Two SPR algorithms are developed to balance risk with energy consumption, using different attack models. SPR can be

used for sensitive message delivery to extend the lifetime of low-risk nodes.

Next generation WLAN is expected to enable various broadband multimedia services. In the third paper “Supporting Voice and Video Applications over IEEE 802.11n WLANs”, Lin X. Cai, et al., develop an analytical model for the performance study of an IEEE 802.11n WLAN, considering the enhanced MAC mechanisms, i.e., frame aggregation and bidirectional transmission. The enhancements can effectively improve the network capacity by not only reducing the protocol overheads, but also smoothing the AP-bottleneck effect in an infrastructure-based WLAN.

In the fourth paper “Time-Frequency Hopping Sequences with Three No Hit Zones”, Xianyang Jiang, et al., propose new sequences with Three No Hit Zones (T-NHZ) in Time-Frequency Hopping (TFH) systems, based on the idea of No Hit Zone (NHZ) in Frequency Hopping (FH) systems. The T-NHZ sequences efficiently reduce or eliminate multipath interference in TFH-CDMA systems and achieve much better bit error performance than traditional frequency hopping sequences and NHZ sequences.

In closing, the guest editors would like to acknowledge the contribution of many experts who participated in the review process and provided helpful suggestions to the authors on improving the content and presentation of the articles. The advice and support from Editor-in-Chief, Dr. Imrich Chlamtac, and the Editorial Assistant, Karen Decker, are greatly appreciated.

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wired networks, UWB wireless communications systems, wireless security, and ad hoc and sensor networks. He is a co-author of three books, and has published more than 200 papers and book chapters in wireless communications and networks, control, and filtering. He was Technical Co-Chair for the IEEE GLOBECOM'03, ISPAN'04, QShine'05, IEEE Broadnets'05, and WirelessCom'05, and is Special Track Chair of the 2005 IFIP Networking Conference. He serves as Associate Editor for IEEE Transactions on Wireless Communications; IEEE Transactions on Vehicular Technology; Computer Networks; ACM/Wireless Networks; Wireless Communications and Mobile Computing (Wiley); and International Journal Computer and Applications. He has also served as Guest Editor for IEEE JSAC, IEEE Wireless Communications, and IEEE Communications Magazine. Dr. Shen received the Outstanding Performance Award from the University of Waterloo in 2002 and 2004, respectively, for outstanding contribution in teaching, scholarship and service; and the Premier's Research Excellence Award (PREA) in 2003 from the Province of Ontario, Canada, for demonstrated excellence of scientific and academic contributions.



Andreas F. Molisch (S'89, M'95, SM'00, F'05) received the Dipl. Ing., Dr. techn., and habilitation degrees from the Technical University Vienna (Austria) in 1990, 1994, and 1999, respectively. From 1991 to 2000, he was with the TU Vienna, becoming an associate professor there in 1999. From 2000 to 2002, he was with the Wireless Systems Research Department at AT&T (Bell) Laboratories Research in Middletown, NJ. Since then, he has been with Mitsubishi Electric

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contributed to its worldwide developments. Dr. Honggang Zhang is the Founding Editorial Board Member of International Journal of Peer-to-Peer Networking and Applications (Springer). He is the Editorial Board Member of China Communications Journal. He is the Founding Technical Program Co-Chairs of CrownCom 2006 (the First International Conference on Cognitive Radio Oriented Wireless Networks and Communications). He is the Steering Committee Member of CrownCom 2007 (the Second International Conference on Cognitive Radio Oriented Wireless Networks and Communications). He is the General Vice Co-Chairs of ChinaCom 2007 (the Second International Conference on Communications and Networking in China). He is the International Steering Committee Member of IEEE ISCIT 2007 (the 7th IEEE International Symposium on Communications and Information Technologies). He is the Vice-Chair of the Technical Sub-committee on Cognitive Networks (TCCN) of the IEEE Communications Society (ComSoc).