

# Call for Papers for *Ad Hoc, Sensor and Mesh Networking Symposium*

## Co-Chairs

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## Sponsoring Technical Committees

- Ad Hoc and Sensor Networks
- Wireless Communications
- Information Infrastructure

## Scope and Motivation

As wireless networks nodes proliferate and as applications using Internet become familiar to a wider class of customers, those customers will expect to use networking applications even in situations where the Internet itself is not available. The basic solution to meet such requirements is to allow mobile computer users with (compatible) wireless communication devices to set up a (possibly) short-lived network just for the communication needs of the moment- in other words, an ad-hoc network. A mobile ad hoc network (Manet) is a system of wireless mobile nodes dynamically self organizing in arbitrary and temporary network topologies. People and vehicles can thus be internetworked in areas without a pre-existing communication infrastructure, or when the use of such infrastructure requires wireless extension. Therefore, such networks are designed to operate in widely varying environments,

from military networks (with hundreds of nodes) to low-power sensor networks and other embedded systems. Dynamic topologies, bandwidth constraints, energy-constrained operations, wireless vulnerabilities, and limited physical security are among the characteristics that differentiate mobile ad hoc networks from fixed multi-hop networks.

The field of ad hoc, sensor and mesh networking is reemerging amid unprecedented growth in the scale and diversity of computer networking. Wireless mesh networks (WMNs) are considered as a key technology for next-generation wireless networking. Wireless mesh networks often consist of mesh clients, mesh routers and gateways, where mesh routers have minimal mobility and form the backbone of WMNs. Mesh clients can be either stationary or mobile, and can form a client mesh network among themselves and with mesh routers. The gateway and mesh routers are utilized to provide the internetworking of WMNs with other networks such as the Internet, IEEE 802.11, IEEE 802.15, IEEE 802.16, cellular networks, wireless sensor networks, or combinations of several types of networks. Because of the many advantages, WMNs are undergoing rapid development and inspiring numerous deployments. A wireless sensor network (WSN) is a wireless network consisting of large populations of spatially distributed sensor nodes to cooperatively monitor physical or environmental conditions, such as temperature, sound, vibration, pressure, motion or pollutants, at different locations. A sensor node is an autonomous device which is capable of computation, communication, and sensing. Wireless sensor networks have many useful applications such as hostile environment surveillance, industrial process monitoring, environment and habitat monitoring, healthcare applications, home automation, and traffic control.

This symposium aims at providing a forum for sharing ideas among researchers and practitioners working on state-of-the-art solutions to the challenges above. We are seeking papers that describe original and unpublished contributions addressing various aspects of ad hoc, sensor and mesh networks.

## **Topics of Interest**

The Ad hoc and Sensor Networking Symposium seeks original contributions in, but not limited to, the following topical areas:

- Applications and Evolutions of Ad Hoc, Sensor, and Mesh Networks
- Autonomic Networking
- Wireless, Ad Hoc, and Sensor Devices
- Physical Layer Design of Ad Hoc, Sensor and Mesh Networks
- Frequency and Channel Allocation Algorithms
- Topology Control and Management
- Algorithms and Modeling for Localization, Target Tracking, and Mobility Management
- Architectures of Wireless Communication and Mobile Computing in Ad Hoc, Sensor and Mesh Networks
- MAC Protocols for Ad Hoc, Sensor, and Mesh Networks
- QoS Provisioning in Medium Access Control and Routing for Ad Hoc and Mesh Networks
- Analytical, Mobility, and Validation Models for Ad Hoc, Sensor, and Mesh Networks
- Performance Evaluation and Modeling of Mobile, Ad Hoc, Sensor, and Mesh Networks
- Integrated Simulation and Measurement based Evaluation of Ad Hoc and Sensor Systems

- New Simulation Languages, Methodologies, and Tools for Wireless Systems in Ad Hoc, Sensor and Mesh Networks
- Analysis of Correctness and Efficiency of Protocols
- Data Management, Data Aggregation, Data Dissemination, and Query Processing
- Distributed Algorithms in Ad Hoc, Sensor and Mesh Networks
- Pricing Modeling and Solutions
- Pervasive and Wearable Computing
- Co-existence Issues of Hybrid Networks
- Energy Saving and Power Control Protocols for Ad Hoc, Sensor, and Mesh Networks
- Resource Management Algorithms in Mobile, wireless Ad Hoc and Mesh Networks
- Synchronization and Scheduling Issues in Mobile and Ad Hoc Networks
- Service Discovery for Wireless Ad Hoc, Mesh, and Sensor Networks
- Cross-layer Design and Interactions in Ad Hoc, Sensor and Mesh Networks
- Mobile Service and QoS Management for Ad Hoc and Sensor Networks
- Survivability and Reliability Evaluation and Modeling for Ad Hoc, Sensor, and Mesh Networks
- Ubiquitous and Mobile Access for Wireless Mesh Networks
- Security and Privacy Issues in Wireless Ad Hoc, Mesh, and Sensor Networks

## Biography of Proposed Co-Chairs

**Hossam Hassanein** is an internationally recognized researcher in the School of Computing at Queen's University in the areas of broadband, wireless and variable topology networks architecture, protocols, control and performance evaluation. Dr. Hassanein obtained his Ph.D. in Computing Science from the University of Alberta in 1990. He has more than 350 publications in reputable journals, conferences and workshops in the areas of computer networks and performance evaluation. He has delivered several invited talks and tutorials at key international venues, including Unconventional Computing 2007, IEEE ICC 2008, IEEE WLN 2008, IEEE CCNC 2009, IEEE GCC 2009 and IEEE GIIS 2009. Dr. Hassanein has organized and served on the program committee of numerous international conferences and workshops. He also serves on the editorial board of a number of International Journals. Dr. Hassanein is a senior member of the IEEE and is currently vice-chair of the IEEE Communication Society Technical Committee on Ad hoc and Sensor Networks (TC AHSN). He is the recipient of several research, service and best paper awards. Dr. Hassanein is an IEEE Communications Society Distinguished Lecturer.

**Xiaohua Jia** received his B.Sc. (1984) and M.Eng. (1987) from the Univ. of Science and Technology of China, and D.Sc. (1991) in Information Science from Univ. of Tokyo, Japan. He is currently a Chair Professor in Dept of Computer Science at City Univ. of Hong Kong. His research interests include distributed systems, computer networks, wireless sensor and mobile ad hoc networks. Prof. Jia is an editor of *IEEE Trans. on Parallel and Distributed Systems*, *Wireless Networks*, *Journal of World Wide Web*, *Journal of Combinatorial Optimization*, etc. He is the General Chair of *ACM MobiHoc 2008*, TPC Co-Chair of *IEEE MASS 2009*, Area TPC Chair of *INFOCOM 2010*.

**Cheng Li** (S'99, M'03, SM'07) received his B. Eng. and M.Eng. degrees from Harbin Institute of Technology, Harbin, P. R. China, in 1992 and 1995, respectively, and his Ph.D. degree in Electrical and Computer Engineering from Memorial University of Newfoundland, St. John's, Canada, in 2004. He is currently an Associate Professor at the Faculty of Engineering and Applied Science of Memorial University, St. John's, NL, Canada. His research interests include mobile ad hoc and wireless sensor networks, wireless communications and mobile computing, switching and routing, and broadband communication networks. He is an editorial board member of *Wiley Wireless Communications and Mobile Computing*, an Associate Editor of *Wiley Security and Communication Networks*, and an editorial board member of *International Journal of E-Health and Medical Communications* and *KSII Transactions on Internet and Information Systems*. He has served as a Co-Chair of the *IEEE GLOBECOM'09* Wireless Communications Symposium, *IWCMC'08-09* Wireless LAN and Wireless PAN Symposium, and several other international conferences. He has also served as the technical program committee (TPC) member for many international conferences, including *IEEE ICC*, *GLOBECOM*, and *WCNC*. Dr. Li is a senior member of the *IEEE* and its Communication Society and Computer Society.

**Sirisha Medidi** earned a Ph.D. in computer science from Arizona State University in 2001 and then joined Washington State University. Since spring 2008, she joined the Computer Science faculty at Boise State University. Her research interests are in mobile computing, wireless networks, performance modeling, and network security. Her funded projects focus on topology control, routing, reliable data transport, and security aspects of ad-hoc and sensor networks. She has co-authored fifty conference and journal publications and served on several IEEE conferences committees. She is a member of the IEEE, Association of Computing Machinery, and Upsilon Pi Epsilon.