

ADHOCNETS 2009

September 22-25, 2009, Niagara Falls, Canada

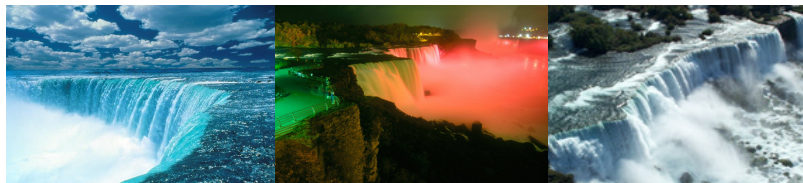


TECHNICAL PROGRAM

First International Conference on Ad Hoc Networks

September 22-25, 2009, Niagara Falls, Ontario, Canada

<http://www.adhocnets.org/>



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MESSAGE FROM GENERAL CHAIR



On behalf of the organizing committee, it is my great pleasure to welcome you all to the First International Conference on Ad Hoc Networks, which will be held in Niagara Falls, Ontario, Canada on September 22-25, 2009.

The annual International Conference on Ad Hoc Networks (AdHocNets) is a new event that aims at providing a forum that brings together researchers from academia as well as practitioners from industry to meet and exchange ideas and recent research work on all aspects of ad hoc networks. As the first edition of this event, AdHocNets'09 will present you an interesting and excellent technical program consisting of keynote addresses, invited talks, technical sessions, panels, and workshops. The keynote addresses will be delivered by Prof. Ian F. Akyildiz from Georgia Institute of Technology, USA and Prof. Weihua Zhuang from University of Waterloo, Canada, world-wide renowned research leaders in the area of ad hoc networks. The invited talks will be given by leading experts with different research backgrounds in the area. The technical sessions will present original research results while the panels and workshops will focus on hot topics in ad hoc networks.

I would like to take this opportunity to thank all the organizing committee members for their enthusiastic and great contributions to organizing this event. Without their great efforts, this conference would not have been possible. I would also like to thank all the authors who have submitted their papers and contributed their recent research results to this conference. Many thanks go to all the ICST staff for their active support and assistance during the entire process of organizing the event. In addition, I would like to acknowledge ICST and Create-Net for their invaluable co-sponsorship for this event.

Niagara Falls is one of the most amazing and spectacular natural landscapes in the world, which truly exceeding the imagination of today's leisure and business visitors. The city of Niagara Falls also offers visitors a lot of other attractions and sighting opportunities.

I hope that you will enjoy the technical program and have a good time at the conference. I also hope that you will take the opportunity to enjoy the Thundering Waters, visit the city of Niagara Falls, and have a wonderful and memorable stay.

Finally, I am looking forward to welcoming you in Niagara Falls.

Jun Zheng

AdHocNets 2009 General Chair

MESSAGE FROM TECHNICAL PROGRAM COMMITTEE

CO-CHAIRS

Welcome to AdhocNets 2009, the First International Conference on Ad Hoc Networks, sponsored by ICST and technically sponsored by Create-Net. As the name suggests, AdhocNets 2009 is the first edition of a new conference dedicated to the research on all types of ad hoc networks. Originally, these networks are envisioned as collections of autonomous mobile or stationary nodes that dynamically autoconfigure themselves into a functioning wireless network without the use of any existing network infrastructure or centralized administration. The demand for ad hoc networks originally came from the military, but subsequently, interest in this area has quickly extended to important civilian applications with a great market potential, all of which demand great simplicity and flexibility in deployment and operation. With significant advances achieved in the last decade, the concept of ad hoc networks assumes an even broader scope, referring to the many types of autonomous wireless networks designed and deployed for a specific task or function. In addition to the generic multi-hop wireless network model, specific forms of ad hoc networks have emerged and have been investigated, including wireless mesh networks, wireless sensor networks, cellular-relay networks, and so on. In contrast to the traditional wireless networking paradigm, such networks are all characterized by sporadic connections, highly error-prone communications, distributed autonomous operation, and fragile multi-hop relay paths.

The various forms of ad hoc networks have led to significant new and interesting research challenges and problems, attracting great efforts from academia, industry, and government. The new wireless networking paradigm necessitates reexamination of many established wireless networking concepts and protocols, and calls for developing new fundamental understanding of problems such as interference, mobility, connectivity, capacity, and security, among others. And, while it is essential to advance theoretical research on fundamentals and practical research on efficient policies, algorithms and protocols, it is also critical to develop useful applications, experimental prototypes, and real-world deployments to achieve immediate impact in society, for the success of this wireless networking paradigm.

AdhocNets 2009 provides a forum to address the research and business challenges in the area of ad hoc networks. It brings together researchers, engineers, policy makers, and students from academia, government, and industry to present cutting-edge research and exchange ideas in this exciting area. We are pleased to present an outstanding technical program over four packed days. Out of 109 submissions, 43 papers from 16 nations were selected through a rigorous review process, with three or more reviews for each submission. These papers are organized into nine technical sessions, addressing:

- Sensor Network Design
- QoS and Data Transport
- Security and Privacy
- Routing

- Performance Modeling and Analysis
- Localization and Topology Control
- Experiments and Simulations
- MAC and Security
- Ad Hoc Network Design

In addition, AdhocNets 2009 features two keynote speeches: one by Prof. Ian F. Akyildiz from the Georgia Institute of Technology, Atlanta, GA, USA on *Nano-Sensor Networks Using Molecular Communication*, and the other by Prof. Weihua Zhuang from the University of Waterloo, Waterloo, Ontario, Canada on *Distributed Resource Allocation in Wireless Networks*. The conference program also features one interactive panel on *Cognitive Radio Ad Hoc Networks* and three distinguished invited talks by Prof. Wendi Heinzelman from the University of Rochester, Rochester, NY, USA, Prof. Victor C. M. Leung from the University of British Columbia, Vancouver, B.C., Canada, and Prof. Nicholas F. Maxemchuk from Columbia University, New York, NY, USA.

AdhocNets 2009 is also the site of two workshops, which complement the main conference program with focused coverage on two “hot” topics:

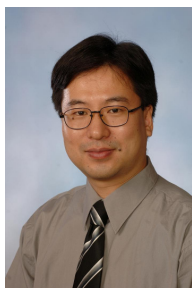
- International Workshop on Advanced Sensor Integration Technology
- International Workshop on Cross-layer Design in Ad hoc Networks

We are grateful to all of the Technical Program Committee members and external reviewers for providing valuable and timely reviews for the papers. We also thank Dr. Jun Zheng, the General Chair of the conference, for taking care of the many issues related to the conference organization. We are very thankful to Dr. Hua Zhu, our Publication Chair, Robert Varga and Eszter Hajdu, the Conference Coordination Chairs for their hard work attending to the final paper submissions and publishing details. Finally and most importantly, we thank all the authors for selecting AdhocNets 2009 to disseminate their latest research results.

We wish all participants the best and hope that everyone has a great time in Niagara Falls. Please enjoy fruitful technical discussions and make new contacts and friends in this converging world.

We conclude with a warm and hearty welcome to Niagara Falls. We look forward to your continued participation in future AdhocNets conferences.

Shiwen Mao and Scott F. Midkiff
AdhocNets 2009 Technical Program Committee Co-Chairs



KEYNOTE ADDRESS I

Nano-Sensor Networks Using Molecular Communication



Professor Ian F. Akyildiz

Georgia Institute of Technology, USA

Abstract

Nano-Sensor Networks. i.e., the interconnection of nano-sensors are expected to expand the capabilities of single nano-sensors by allowing them to cooperate and share information. Traditional communication technologies are not suitable for nano-sensor networks mainly due to the size and power consumption of transceivers, receivers and other components. The use of molecules, instead of electromagnetic or acoustic waves, to encode and transmit the information represents a new communication paradigm that demands novel solutions such as molecular transceivers, channel models or protocols for nano-sensor networks.

In this talk, first the state-of-the-art in nano-sensors, including architectural aspects, expected features of future nano-sensors, and current developments are presented for a better understanding of nano-sensor network scenarios. Moreover, nano-sensor network features and components are explained and compared with traditional communication networks. Furthermore, nano-sensor networks for short-range communication based on calcium signaling and molecular motors as well as for long-range communication based on pheromones are presented. Finally, open research challenges, such as the development of network components, molecular communication theory, and the development of new architectures and protocols, are presented which need to be developed in order to pave the way for the development and deployment of nano-sensor networks within the next couple of decades.

Biography

Dr. **Ian F. Akyildiz** received his BS, MS, and PhD degrees in Computer Engineering from the University of Erlangen-Nuernberg, Germany, in 1978, 1981 and 1984, respectively. Currently, he is the Ken Byers Distinguished Chair Professor with the School of Electrical and Computer Engineering, Georgia Institute of Technology, Director of Broadband Wireless Networking

Laboratory, and Chair of the Telecommunication Group at Georgia Tech. Dr. Akyildiz is also an Honorary Professor with School of Electrical Engineering at the Universitat Politecnica de Catalunya, Barcelona, Spain since June 2008. He is the Editor-in-Chief of Computer Networks (Elsevier) Journal, the founding Editor-in-Chief of the Ad Hoc Networks Journal (Elsevier) in 2003, and the founding Editor-in-Chief of the Physical Communication (PHYCOM) Journal (Elsevier) in 2008. Dr. Akyildiz serves on the advisory boards of several research centres, journals, conferences and publication companies. Dr. Akyildiz is an IEEE FELLOW (1996) and an ACM FELLOW (1997). He received numerous awards from IEEE and ACM. His current research interests are in nano-networks, wireless sensor networks, cognitive radio networks, and wireless mesh networks.

For more information, please visit <http://www.ece.gatech.edu/research/labs/bwn/>

KEYNOTE ADDRESS II

Distributed Resource Allocation in Wireless Networks



Professor Weihua Zhuang

University of Waterloo, Canada

Abstract

It is envisioned that the future global information transport platform will include the Internet as the backbone and heterogeneous wireless networks for multimedia service access from both mobile and stationary users, each network being optimized for its target applications. Distributed resource allocation is required for many emerging infrastructure-less wireless networks. In this presentation, we first briefly discuss technical challenges in resource allocation, due to network characteristics and diverse quality-of-service constraints. Then, we will present research issues and results in detail on medium access control for ad hoc networks and mesh networks, and routing for delay tolerant networks. Some open issues for further research will also be discussed.

Biography

Dr. **Weihua Zhuang** has been a professor in Electrical and Computer Engineering at the University of Waterloo since October 1993. Her current research interests include wireless communications and networks, and radio positioning. She is a co-author of the textbook *Wireless Communications and Networking* published by Prentice Hall in 2003.

Dr. Zhuang is a co-recipient of a Best Paper Award from IEEE ICC 2007, a Best Student Paper Award from IEEE WCNC 2007, and the Best Paper Awards from 2007 and 2008 International Conference on Heterogeneous Networking for Quality, Reliability, Security and Robustness (QShine). She received the Outstanding Performance Awards in 2005, 2006, and 2008 from the University of Waterloo for outstanding achievements in teaching, research, and service, and the Premier's Research Excellence Award in 2001 from the Ontario Government for demonstrated excellence of scientific and academic contributions.

Dr. Zhuang is the Editor-in-Chief of *IEEE Transactions on Vehicular Technology*, and an Editor of *IEEE Transactions on Wireless Communications*, *EURASIP Journal on Wireless Communications and Networking*, and *International Journal of Sensor Networks*. She is a Fellow of IEEE and an IEEE Communications Society Distinguished Lecturer.

For more information, please visit <http://bbcr.uwaterloo.ca/~wzhuang>

TECHNICAL PROGRAM AT A GLANCE

[Tuesday, September 22 2009](#)

08:55am - 12:30pm Workshop I
12:30pm - 01:55pm Lunch Break
01:55pm - 05:30pm Workshop II

[Wednesday, September 23 2009](#)

08:45am - 09:00am Welcome and Opening Addresses
09:00am - 10:00am Keynote Speech I
10:00am - 10:30am Coffee Break
10:30am - 12:15pm Session 1: Sensor Network Design
12:15pm - 02:00pm Lunch Break
02:00pm - 03:45pm Session 2: QoS and Data Transport
03:45pm - 04:00pm Coffee Break
04:00pm - 05:45pm Session 3: Security and Privacy

[Thursday, September 24 2009](#)

09:00am - 10:00am Keynote Speech II
10:00am - 10:30am Coffee Break
10:30am - 12:15pm Session 4: Panel
12:15pm - 02:00pm Lunch Break
02:00pm - 03:45pm Session 5: Routing
03:45pm - 04:00pm Coffee Break
04:00pm - 05:45pm Session 6: Performance Modeling and Analysis
07:00pm - 09:00pm Gala Dinner

[Friday, September 25 2009](#)

09:00am - 10:30am Session 7: Localization and Topology Control
10:30am - 10:45am Coffee Break
10:45am - 12:15pm Session 4: Experiments and Simulations
12:15pm - 02:00pm Lunch Break
02:00pm - 03:45pm Session 5: MAC and Security
03:45pm - 04:00pm Coffee Break
04:00pm - 05:45pm Session 10: Ad Hoc Network Design

TECHNICAL PROGRAM

Tuesday, September 22 2009

Workshop 1: Advanced Sensor Integration Technology

Room: Canadiana

Tuesday, September 22 2009 08:55am - 09:00am

Welcome and Opening Remarks

Workshop Co-Chair: Dr. Victor C.M. Leung, University of British Columbia, Canada

Tuesday, September 22 2009 09:00am - 10:30am

Session 1: ASIT (I)

Chair: Mikhail Nesterenko, Kent State University, UK

1. Architecture for WSN Nodes Integration in Context Aware Systems Using Semantic Messages

Iker Larizgoitia, Leire Muguira, and Juan Ignacio Vazquez, MoreLab Research Lab, Spain

2. Performance Analysis of ZigBee Technology for Wireless Body Area Sensor Networks

Huasong Cao, University of British Columbia, Canada; Xuedong Liang, University of Oslo, Norway; Ilangko Balasingham, Norwegian University of Science and Technology, Norway; and Victor C. M. Leung, University of British Columbia, Canada

3. Analytical Models of Cross-Layer Protocol Optimization in Real-Time Wireless Sensor Ad Hoc Networks

William S. Hortos, Associates in Communications Engineering Research and Technology, USA

4. Programmable Re-Tasking of Wireless Sensor Networks Using WISEMAN

Sergio Gonzalez-Valenzuela, Min Chen, Huasong Cao, and Victor C.M. Leung, University of British Columbia, Canada

10:30am - 11:00am

Coffee Break

Tuesday, September 22 2009 11:00am - 12:30pm

Session 1: ASIT (II)

Chair: Huasong Cao, University of British Columbia, Canada

1. Oxybuoy: Constructing a Real-Time Inexpensive Hypoxia Monitoring Platform

Rizal Mohd Nor, Mikhail Nesterenko, Kent State University, UK; and Peter Lavrentyev, University of Akron, UK

2. An Energy-Efficient, Application-Oriented Control Algorithm for MAC Protocols in WSN

Li Deliang, Fei Peng, and Depei Qian, Beihang University, China

3. An Integrated RFID and Sensor System for Emergency Handling in Underground Coal Mines Environments

Lingxia Liao, University of British Columbia, Canada; Guohuan Lou, Hebei Polytechnic University, China; and Min Chen, Seoul National University, Korea

4. Area-Based Overlay Architecture for Scalable Integration of Sensor Networks

Lampros Pappas and Spyros Lalis, Center for Research & Technology Thessaly, Greece

12:30pm - 01:55pm

Lunch: Fallsview Room

Workshop 2: Cross-Layer Design in Ad Hoc Networks

Room: Canadiana

Tuesday, September 22 2009 01:55pm - 02:00pm

Welcome and Opening Remarks

Workshop Co-Chair: Dr. Sunil Kumar, San Diego State University, USA

Dr. John Matyjas, Air Force Research Lab, USA

Tuesday, September 22 2009 02:00pm - 03:30pm

Session 1: CLD (I)

Chair: Annamalai Annamalai Jr., Prairie View A&M University, USA

1. Keynote Address: Cross-Layer Design in Highly Dynamic Ad Hoc Networks

Dr. John Matyjas, Air Force Research Lab, USA

2. Outage Probability for ARQ Decode-and-Forward Relaying under Packet-Rate Fading

Sangkook Lee, Weifeng Su, Stella Batalama, SUNY Buffalo, USA; and John D. Matyjas, AFRL, USA

3. Distributed Spectrum Sharing for Video Streaming in Cognitive Radio Ad Hoc Networks

Lei Ding, Scott Pudlewski, Tommaso Melodia, Stella Batalama, SUNY Buffalo, USA; John Matyjas and Michael J. Medley, AFRL, USA

03:30pm - 04:00pm

Coffee Break

Tuesday, September 22 2009 04:00pm - 05:30pm

Session 2: CLD (II)

Chair: John Matyjas, Air Force Research Lab, USA

1. The Cognitive Radio Channel: from Spectrum Sensing to Message Cribbing

Yi Cao and Biao Chen, Syracuse University, USA

2. Efficacy of Cooperative Relaying with Adaptive Modulation in Nakagami-m Channels

A. Annamalai, Prairie View A&M University, USA; and John Matyjas, AFRL, USA

3. AM-AOMDV: Adaptive Multimetric Ad Hoc On-demand Distance Vector Routing

S. Khimsara, K.K.R. Kambhatla, J. Hwang, Sunil Kumar, San Diego State University, USA; and John Matyjas, Air Force Research Laboratory, USA

4. A Low-Latency TDMA Scheduler for Multihop Cluster Based MANETs with Directional Antennas

Michael Iannacone, Yamin Al-Mousa, Nicholas Martin, Spectracom Corp., USA;
Nirmala Shenoy, Rochester Institute of Technology, USA; and John Fischer, Spectracom Corp., USA

Wednesday, September 23 2009

Wednesday, September 23 2009 08:45am - 09:00am

Room: Salon A

Welcome and Opening Addresses

General Chair: Dr. Jun Zheng, Southeast University, China

TPC Co-Chairs: Dr. Scott F. Midkiff NSF and Virginia Tech, USA
Dr. Shiwen Mao, Auburn University, USA

Wednesday, September 23 2009 09:00am - 10:00am

Room: Salon A

Keynote Talk I: Nano-Sensor Networks Using Molecular Communication

Prof. Ian F. Akyildiz, Georgia Institute of Technology, USA

10:00am - 10:30am

Coffee Break

Wednesday, September 23 2009 10:30am - 12:15pm

Room: Salon A

Session 1: Sensor Network Design

Chair: Fernand Cohen, Drexel University, USA

1. Invited Talk: Supporting Proactive Application Event Notification to Improve Sensor Network Performance

Wendi Heinzelman, University of Rochester, USA

2. An Energy-Efficient Cluster-Head Selection Protocol for Energy-Constrained Wireless Sensor Networks

Peng Hao, University of Melbourne, Australia; Wanzhi Qiu and Rob Evans, National ICT Australia, Australia

3. Optimization of Cluster Heads for Energy Efficiency in Large-Scale Wireless Sensor Networks

Yi Gu and Qishi Wu, University of Memphis, USA

4. Optimal Cluster Sizes for Wireless Sensor Networks: An Experimental Analysis

Anna Förster, Alexander Förster, and Amy L. Murphy, University of Lugano, Switzerland

5. A Parallel Paths Communication Technique for Energy Efficient Wireless Sensor Networks

Balasarayanan Venugopal, Gayathri Venkataraman, and Srikanthan Thambipillai, Nanyang Technological University, Singapore

12:15pm - 02:00pm

Lunch: Salon MFP

Wednesday, September 23 2009 02:00pm - 03:45pm

Room: Salon A

Session 2: QoS and Data Transport

Chair: Victor C.M. Leung, University of British Columbia, Canada

1. Invited Talk: Scalable Max-Min Fairness in Wireless Ad Hoc Networks

Nicholas F. Maxemchuk, Columbia University, USA

2. Upper Bounding Service Capacity in Multihop Wireless SSMA-Based Ad Hoc Networks

John N. Daigle, Shirong Du, and Bahram Alidaee, The University of Mississippi, USA

3. QoS over Real-Time Wireless Multi-hop Protocol

Domenico Sicignano, Danilo Tardioli, and José Luis Villarroel, University of Zaragoza, Spain

4. Efficient Distribution of Large Files in UMTS Supported by Network Coded M2M Data Transfer with Multiple Generations

Larissa N. Popova, Wolfgang Gerstacker, and Wolfgang Koch, University of Erlangen-Nuremberg, Germany

5. Enhancement of Self-Organization in Wireless Networking through a Cross-layer Approach

Mohammad A. Razzaque and Simon Dobson, UCD Belfield, Ireland

03:45pm - 04:00pm

Coffee Break

Wednesday, September 23 2009 04:00pm - 05:45pm

Room: Salon A

Session 3: Security and Privacy

Chair: Wendi Heinzelman, University of Rochester, USA

1. **SPECS: Secure and Privacy Enhancing Communications Schemes for VANETs**
Tat Wing Chim, S.M. Yiu, Lucas C.K. Hui, and Victor O.K. Li, The University of Hong Kong, China
2. **Security and Privacy in a Sensor-Based Search and Rescue System**
Jyh-How Huang, John Black, and Shivakant Mishra, University of Colorado, USA
3. **Computationally Efficient Mutual Entity Authentication in Wireless Sensor Networks**
Zhijun Li and Guang Gong, University of Waterloo, Canada
4. **Distributed Detection of Wormhole Attacks in Wireless Sensor Networks**
Rennie deGraafm, Islam Hegazy, Jeffrey Horton, and Reihaneh Safavi-Naini, University of Calgary, Canada
5. **Power-Aware Intrusion Detection on Mobile Ad Hoc Networks**
Sevil Sen, John A. Clark, and Juan E. Tapiador, University of York, UK
6. **DHT-Based Detection of Node Clone in Wireless Sensor Networks**
Zhijun Li and Guang Gong, University of Waterloo, Canada

Thursday, September 24 2009

Thursday, September 24 2009 09:00am - 10:00am

Room: Salon A

Keynote Talk II: Distributed Resource Allocation in Wireless Networks

Prof. Weihua Zhuang, University of Waterloo, Canada

10:00am - 10:30am

Coffee Break

Thursday, September 24 2009 10:30am - 12:15pm

Room: Salon A

Session 4 (Panel):

Topic: Will Cognitive Radio Ad Hoc Networks ever be Feasible?

Panel Organizers:

Louise Lamont	Communications Research Centre, Canada
Tommaso Melodia	SUNY at Buffalo, USA

Panelists:

Denis Couillard	Product Management à Ultra Electronics TCS, Canada
John Daigle	University of Mississippi, USA
Eylem Ekici	Ohio State University, USA
Wendi Heinzelman	University of Rochester, USA

12:15pm - 02:00pm

Lunch: Salon MFP

Thursday, September 24 2009 02:00pm - 03:45pm

Room: Salon A

Session 5: Routing

Chair: Torsten Baum, University of Bern, Switzerland

1. Invited Talk: Connectivity-aware Minimum-delay Geographic Routing with Vehicle Tracking in VANETs

Victor C.M. Leung, University of British Columbia, Canada

2. Buckshot Routing - A Robust Source Routing Protocol for Dense Ad-Hoc Networks

David Peters, Reinhardt Karnapke, and Jörg Nolte, BTU Cottbus, Germany

3. Enhanced Route-Split Routing Tolerant to Multiple Concurrent Link Failure for Mobile Ad Hoc Networks

Tomoyuki Ohta, Tsuyoshi Mizumoto, and Yoshiaki Kakuda, Hiroshima City University, Japan

4. A Simulation-Based Performance Analysis of Various Multipath Routing Techniques in ZigBee Sensor Networks

Natalija Vlajic, George Spanogiannopoulos, and Dusan Stevanovic, York University, Canada

5. Centralized Routing and Scheduling Using Multi-Channel System Single Transceiver in 802.16d

Ali Al-Hemyari, Chee Kyun Ng, Nor Kamariah Noordin, Alyani Ismail, and Sabira Khatun, University Putra Malaysia, Malaysia

03:45pm - 04:00pm

Coffee Break

Thursday, September 24 2009 04:00pm - 05:45pm

Room: Salon A

Session 6: Performance Modeling and Analysis

Chair: Tommaso Melodia, State University of New York at Buffalo, USA

1. Contact Time in Random Walk and Random Waypoint: Dichotomy in Tail Distribution

Chen Zhao and Mihail L. Sichitiu, North Carolina State University, USA

2. Throughput Analysis of IEEE 802.11 DCF in the Presence of Transmission Errors

Ahed M. Alshanyour and Anjali Agarwal, Concordia University, Canada

3. Effects of Unintentional Denial of Service (DOS) due to PTT Delays on Performance of CSMA/CA Based Ad Hoc Land Mobile Radio (LMR) Networks

Abhijit C. Navalekar and William R. Michalson, Worcester Polytechnic Institute, USA

4. Achievable Region in Slotted ALOHA Throughput for One-Relay Two-Hop Wireless Network Coding

Daisuke Umehara, Satoshi Denno, Masahiro Morikura, and Takatoshi Sugiyama, Kyoto University, Japan

5. Exact Models for the k-Connected Minimum Energy Problem

Christina N. Burt, Yao-ban Chan, and Nikki Sonenberg, University of Melbourne, Australia

6. Performance Evaluation of Quality of Service in IEEE 802.11e Wireless LANs

Fei Peng, Hussein Alnuweiri, and Victor Leung, University of British Columbia, Canada

07:00pm - 09:00pm

Gala Dinner: Salon MFP

Friday, September 25 2009

Friday, September 25 2009 09:00am - 10:30am

Room: Salon A

Session 7: Localization and Topology Control

Chair: Oliver Yang, University of Ottawa, Canada

1. Cooperative Localization in GPS-Limited Urban Environments

Jeffrey M. Hemmes, Air Force Institute of Technology, USA; Douglas Thain and Christian Poellabauer, University of Notre Dame, USA

2. Tracking a Vehicle Moving in a Wireless Sensor Network

Fernand S. Cohen, Salah Abushariefeh, Gregory Bruton, Marcus Matthews, and Kuriakose Varghese,

Drexel University, USA

3. Improved Topology Control Algorithms for Simple Mobile Networks

Fei Che, Errol Lloyd, and Liang Zhao, University of Delaware, USA

4. Reliable Coverage Area Based Link Expiration Time (LET) Routing Metric for Mobile Ad Hoc Networks

Izhar ahmed, Kemal E. Tepe, and Brajendra kumar Singh, University of Windsor, Canada

5. Constructing Minimum Relay Connected Sensor Cover in Heterogeneous Wireless Sensor Networks

Jie Jiang, Jun Wen, Guofu Wu, Heyin Zhang, and Wenhua Dou, National University of Defense Technology, China

10:30am - 10:45am

Coffee Break

Friday, September 25 2009 10:45am - 12:15pm

Room: Salon A

Session 8: Experiments and Simulations

Chair: Christian Poellabauer, University of Notre Dame, USA

1. Experimentation Made Easy

Mesut Günes, Bastian Blywis, Felix Juraschek, and Olaf Watteroth, Freie Universität Berlin, Germany

2. Enhancing Learning Using Modular Wireless Sensor Networking (WSN) Hands-on Experiments

Ezgi Taslidere, Fernand Cohen, and Fredricka Reisman, Drexel University, USA

3. Sensor Networks in the Wireless VHF Band

Santiago Otero, Perfecto Mariño, Miguel Ángel Domínguez, and Fernando Pérez Fontán, University of Vigo, Galicia

4. VoIP Implementation and Experiments on a Mobile Wireless AdHoc Network

Hongqi Zhang, Oliver Yang, and Jiying Zhao, University of Ottawa, Canada

5. Relay Implementation in WiMAX System Level Simulator

Shahid Mumtaz, Lee Tham Tu, Rasool Sadeghi, and Atilio Gameiro, Institute of Telecommunication, Aveiro, Portugal

12:15pm - 02:00pm

Lunch: Salon MFP

Friday, September 25 2009 02:00pm - 03:45pm

Room: Salon A

Session 9: MAC and Security

Chair: Mieso Denko, University of Guelph, Canada

1. MeshMAC: Enabling Mesh Networking over IEEE802.15.4 through Distributed Beacon Scheduling

Rodolfo De Paz Alberola, Dirk Pesch, Rostislav Spinar, and Panneer Selvan Muthukumaran, Cork Institute of Technology, Ireland

2. Compressing MAC Headers on Shared Wireless Media

Jesus M. Arango, University of Arizona, USA; Matthew Faulkner and Steve Pink, Lancaster University, UK

3. An RTS based data channel reservations and access scheme in Multi-Channel Systems

Mthulisi Velempini and Mqhele E. Dlodlo, University of Cape Town, South Africa

4. Building Intrusion Detection with a Wireless Sensor Network

Markus Wälchli and Torsten Braun, University of Bern, Switzerland

5. Passive and Active Analysis in DSR-Based Ad Hoc Networks

Tae Dempsey, Gokhan Sahin, and Yu Tong (Jade) Morton, Miami University, USA

6. An E-Hospital Security Architecture

Fang Tian and Carlisle Adams, University of Ottawa, Canada

03:45pm - 04:00pm

Coffee Break

Friday, September 25 2009 04:00pm - 05:45pm

Room: Salon A

Session 10: Ad Hoc Network Design

Chair: John N. Daigle, The University of Mississippi, USA

1. Cooperative Certificate Revocation List Distribution Methods in VANETs

Michael E. Nowatkowski, Chris McManus, Jennie Wolfgang, and Henry Owen, Georgia Institute of Technology, USA

2. Distributed Channel Selection for Ad-hoc Networks in the Presence of Jamming Sources

Jorge I. Barrera and Alfredo Garcia, University of Virginia, USA

3. Joint Random Access and Power Control Game in Ad Hoc Networks with Non-cooperative Users

Chengnian Long and Xinping Guan, Shanghai Jiao Tong University, China

4. Graph Marginalization for Rapid Assignment in Wide-Area Surveillance

Mark J. Ebden and Stephen Roberts, University of Oxford, UK

5. Error Correction with the Implicit Encoding Capability of Random Network Coding

Suné Von Solms and Albert S.J. Helberg, North West University, South Africa

6. An End-to-End Loss Discrimination Scheme for Multimedia Transmission over Wireless IP Networks

Hai-Tao Zhao, Yu-Ning Dong, and Yang Li, Nanjing University of Posts and Telecommunications, China

TECHNICAL PROGRAM COMMITTEE

Ian F. Akyildiz	Georgia Institute of Technology, USA
Habib M. Ammari	Hofstra University, USA
Chadi Assi	Concordia University, Canada
Stefano Basagni	Northeastern University, USA
Rebecca Braynard	Palo Alto Research Center, USA
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Yuanzhu Peter Chen	Memorial University of Newfoundland, Canada
Stefano Chessa	University of Pisa, Italy
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Sunil Kumar	San Diego State University, USA
Longbao Le	Massachusetts Institute of Technology, USA
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