

**PROCEEDINGS OF
THE 2011 INTERNATIONAL CONFERENCE ON
WIRELESS NETWORKS**

ICWNN 2011

Editors

**Hamid R. Arabnia
Victor A. Clincy
Leonidas Deligiannidis
Ashu M. G. Solo**



WORLDCOMP'11

July 18-21, 2011

Las Vegas Nevada, USA

www.world-academy-of-science.org

©CSREA Press

This volume contains papers presented at The 2011 International Conference on Wireless Networks (ICWN'11). Their inclusion in this publication does not necessarily constitute endorsements by editors or by the publisher.

Copyright and Reprint Permission

Copying without a fee is permitted provided that the copies are not made or distributed for direct commercial advantage, and credit to source is given. Abstracting is permitted with credit to the source. Please contact the publisher for other copying, reprint, or republication permission.

Copyright © 2011 CSREA Press
ISBN: 1-60132-187-2
Printed in the United States of America

CSREA Press
U. S. A.

Foreword

It gives us great pleasure to introduce this collection of papers to be presented at the 2011 International Conference on Wireless Networks (ICWN'11), July 18 through 21, 2011, at Monte Carlo Resort, Las Vegas, USA.

The Academic Co-Sponsors of this year's conference include:

The Berkeley Initiative in Soft Computing (BISC), University of California, Berkeley, USA; Biomedical Cybernetics Laboratory, HST of Harvard University and Massachusetts Institute of Technology (MIT), USA; Intelligent Data Exploration and Analysis Laboratory, University of Texas at Austin, Austin, Texas, USA; Collaboratory for Advanced Computing and Simulations (CACs), University of Southern California, USA; Minnesota Supercomputing Institute, University of Minnesota, USA; Knowledge Management & Intelligent System Center (KMIS) of University of Siegen, Germany; UMIT, Institute of Bioinformatics and Translational Research, Austria; BioMedical Informatics & Bio-Imaging Laboratory, Georgia Institute of Technology and Emory University, Atlanta, Georgia, USA; Hawkeye Radiology Informatics, Department of Radiology, College of Medicine, University of Iowa, Iowa, USA; NDSU-CIIT Green Computing and Communications Laboratory, USA; Supercomputer Software Department (SSD), Institute of Computational Mathematics & Mathematical Geophysics, Russian Academy of Sciences, Russia; SECLAB (inter-university research groups at University of Naples Federico II, the University of Naples Parthenope, and Second University of Naples, Italy); Medical Image HPC & Informatics Lab (MiHi Lab), University of Iowa, Iowa, USA; Intelligent Cyberspace Engineering Lab., ICEL, Texas A&M University (Com./Texas), USA; and Model-Based Engineering Laboratory, University of North Dakota, North Dakota, USA.

Corporate Co-Sponsors, Co-Sponsors At-Large and Organizers include:

A number of university faculty members and their staff (names appear below and also on the cover of the proceedings); Microsoft Research; Altera Corporation; Pico Computing; World Academy of Science (www.world-academy-of-science.org/); Computer Science Research, Education, and Applications Press; High Performance Computing for Nanotechnology (HPCNano); International Society of Intelligent Biological Medicine; World Academy of Biomedical Sciences and Technologies; The International Council on Medical and Care Compunetics; The UK Department for Business, Enterprise & Regulatory Reform, UK; Scientific Technologies Corporation; and HoIP - Health without Boundaries. In addition, several publishers of computer science and computer engineering books and journals, chapters and/or task forces of computer science associations/organizations from 8 countries, and developers of high-performance machines and systems provided significant help in organizing the conference as well as providing some resources.

An important mission of WORLDCOMP (a federated congress to which this conference is affiliated with) includes "Providing a unique platform for a diverse community of constituents composed of scholars, researchers, developers, educators, and practitioners. The Congress makes concerted effort to reach out to participants affiliated with diverse entities (such as: universities, institutions, corporations, government agencies, and research centers/labs) from all over the world. The congress also attempts to connect participants from institutions that have **teaching** as their main mission with those who are affiliated with institutions that have **research** as their main mission. The congress uses a quota system to achieve its institution and geography diversity objectives."

The program committee would like to thank all those who submitted papers for consideration. About 50% of the submissions were from outside the United States. Each paper was peer-reviewed by two experts in the field for originality, significance, clarity, impact, and soundness. In cases of contradictory recommendations, a member of the conference program committee was charged to make the final decision; often, this involved seeking help from additional referees by using a double-blinded review process. In addition, papers whose authors included a member of the conference program committee were evaluated using the double-blinded review process. The only exception to the above evaluation process was for papers that were submitted directly to chairs/organizers of approved sessions/workshops; in these cases, the chairs/organizers were responsible for the evaluation of such submissions. The overall paper acceptance rate for regular papers was 24%; 18% of the remaining papers were accepted as poster papers.

We are very grateful to the many colleagues who helped in organizing the conference. In particular, we would like to thank the members of the ICWN'11 Program Committee who we hope will offer their help again in organizing the next year's conference (ICWN'12). The ICWN'11 Program Committee members were:

- *Dr. Selim Aissi, (Steering Committee - WORLDCOMP), Chief Strategist - Security, Manageability and Virtualization, Ultra Mobile Group, Intel Corporation, USA*
- *Prof. Hamid R. Arabnia, (Steering Committee - WORLDCOMP), Elected Fellow, ISIBM; Editor-in-Chief, The Journal of Supercomputing; Advisory Board, IEEE TC on Scalable Computing; University of Georgia, Georgia, USA*
- *Prof. Ruzena Bajcsy (Steering Committee - WORLDCOMP), Member, National Academy of Engineering; IEEE Fellow; ACM Fellow; University of California, Berkeley, California, USA*
- *Prof. H-P. Bischof, Rochester Institute of Technology, Rochester, New York, USA*
- *Dr. Junaid Chaudhry, University of Hail, Hail City, Saudi Arabia*
- *Dr. Long Chen, Senior Engineer, Qualcomm Incorporated, San Diego, California, USA*
- *Prof. Hyunseung Choo, (Steering Committee - WORLDCOMP), ITRC Director of Ministry of Information and Communication; Director, Korea Information Processing Society; Associate Editor, ACM Transactions on Internet Technology; Sungkyunkwan University (SKKU), Korea*
- *Prof. Ping-Tsai Chung, Chair, Computer Science Department, Long Island University, Brooklyn, New York, USA*
- *Prof. Victor A. Clincy; MSACS Director, Kennesaw State University, Kennesaw, Georgia, USA*
- *Prof. Leonidas Deligiannidis, Wentworth Institute of Technology, Boston, Massachusetts, USA*
- *Prof. Youping Deng, Director of Cancer Bioinformatics, Rush University Cancer Center, Rush University Medical Center, Chicago, Illinois, USA*
- *Dr. Mohsen Doroodchi, Cardinal Stritch University, Milwaukee, Wisconsin, USA*
- *Prof. (Winston) Wai-Chi Fang, (Steering Committee - WORLDCOMP), IEEE Fellow; Director, System-on-Chip Research Center; TSMC Distinguished Chair Professor; National Chiao Tung University, Hsinchu, Taiwan*
- *Prof. Shunkai Fu, Huaqiao University, P. R. China and CEO of Teewoo Inc.*
- *Dr. Haishan Gong, eBay Inc., Sunnyvale, California, USA*
- *Dr. Dongfeng Han, University of Iowa, Iowa City, Iowa, USA*
- *Dr. Shanmugasundaram Hariharan, J.J. College of Engineering and Technology, Tamilnadu, India*
- *Prof. Xiangjian (Sean) He, Director of Intelligent Image Processing & Computer Vision; Deputy Director of Research Centre for Innovation in IT Services and Applications (iNEXT); University of Technology, Sydney, Australia*
- *Dr. Pejman Khadivi, Head, Computer Engineering and Information Technology Group at IUT (ECE Department), Isfahan University of Technology (IUT), Isfahan, Iran*
- *Prof. Kun Chang Lee, (Steering Committee - WORLDCOMP), Professor of MIS and WCU Professor of Creativity Science, Sungkyunkwan University, Seoul, South Korea*
- *Dr. Shaoshan Liu, Microsoft, one Microsoft Way, Redmond, Washington, USA*
- *Dr. Reza Malekian, Head, Computer Division, Azad University, Tonekabon, Iran and Editor-in-Chief, Int'l Journal of Wireless Communications & Simulation*
- *Prof. Andy Marsh, (Steering Committee - WORLDCOMP), Director HoIP; Director HoIP Telecom, UK; Secretary-General WABT; Vice-president ICET; Visiting Professor University of Westminster, UK*
- *Dr. Armin Mehran, Islamic Azad University, Tehran, Iran*
- *Dr. Nitin, Distinguished Adjunct Professor, University of Nebraska at Omaha, Omaha, Nebraska, USA*
- *Prof. Junfeng Qu, Clayton State University, Morrow, Georgia, USA*
- *Prof. Kishore R. Sakharkar, Professor, Infectious Disease Cluster, Advanced Medical & Dental Institute (AMDI), University Sains Malaysia, Malaysia*
- *Dr. Akash Singh, IBM, Sacramento, California, USA*
- *Dr. Brajesh Kumar Singh, Reader, Department of C.S.E, FET, RBS College, Bichpuri, India*
- *Prof. R. K. Singh, Uttarakhand Technical University, Dehradun, Uttarakhand, India*
- *Sunil Kr. Singh, Uttarakhand Technical University, Dehradun, Uttarakhand, India*
- *Ashu M. G. Solo, (WORLDCOMP Publicity Chair), Fellow of British Computer Society, Principal/R&D Engineer, Maverick Technologies America Inc.*
- *Dr. Jie Tang, University of California Irvine, California, USA*
- *Prof. Dr. Qurat-ul-Ain Tariq, Chairperson, Department of Computer and Information Systems Engineering, NED University of Engineering & Technology, Karachi, Pakistan*

- *Dr. Vladimir Volkov, The Bonch-Bruевич State University of Telecommunications, Saint-Petersburg, Russia*
- *Dr. Guanghui Wang, Department of Systems Design, University of Waterloo, Canada*
- *Prof. Layne T. Watson, (Steering Committee - WORLDCOMP), IEEE Fellow; NIA Fellow; ISIBM Fellow; Fellow of The National Institute of Aerospace; Virginia Polytechnic Institute & State University, USA*
- *Prof. Lotfi A. Zadeh, (Steering Committee - WORLDCOMP), Member, National Academy of Engineering; IEEE Fellow, ACM Fellow; AAAS Fellow; AAAI Fellow; IFSA Fellow; Director, BISC; University of California, Berkeley, California, USA*
- *Dr. Songfeng (Andy) Zheng, Missouri State University, Springfield, Missouri, USA*

We express our gratitude to keynote and invited speakers of WORLDCOMP and individual conference/tracks and tutorial speakers - the list of speakers appears on the conference web site.

We would also like to thank the followings: UCMSS (Universal Conference Management Systems & Support, California, USA) for managing all aspects of the conference; Dr. Tim Field of APC for managing the printing of the proceedings; and the staff of Monte Carlo Resort in Las Vegas for the professional service they provided. Last but not least, we would like to thank the Co-editors of ICWN'11: Drs. Victor A. Clincy, Leonidas Deligiannidis, and Ashu M. G. Solo.

We present the proceedings of ICWN'11.

Hamid R. Arabnia, Ph.D.
 Professor, Computer Science, University of Georgia, USA
General Chair & Coordinator, ICWN'11

Contents

SESSION: PERFORMANCE ANALYSIS AND EVALUATION

- Computing Performance Bounds for Analysis of Indoor Wireless Fading Channels for RFID-Based Localization** 3

Frederick Schwaner, Daniel Blackmer, Ali Abedi

- A Study of the Performance of Vector based Forwarding in Underwater Acoustic Sensor Network** 8

Chetan Ragpot, Nassirah Laloo, Mohammad Sameer Sunhaloo, Raja K. Subramanian

- Uplink Performance Analysis in Multiple MIMO Rayleigh Interference Channel for WCDMA** 15

E. K. Affum Ampoma, Reynolds Okai, Stanley Moffatt

SESSION: MOBILE COMPUTING AND AD HOC NETWORKS

- Location Cluster with Nearest Neighbors in Signal Space: An Implementation in Mobile Service Discovery and Tracking** 25

Jon Quah, Luo-Ren Lim

- A Novel Weighted Clustering Algorithm Based on Mobility for Mobile Ad Hoc Networks** 32

Amir Massoud Bidgoli, Mohammad Shayesteh

- Host Mobility Management Across Heterogeneous Networks Using MPLS** 41

Liren Zhang, Hesham El-Sayed, Hadeel El-Kassabi

- Based on Image Twist Technology to Create Funny Mobile Animation Characters** 49

Ge-gang Peng, Xin-yu Li, Ying Song, Li-sheng Xiang, Qing Shen, Ren-fa Li

- Applications And Studies On Mobile Client For Mobile E-Business** 54

Ge-gang Peng, Xin-yu Li, Ying Song, Li-sheng Xiang, Qing Shen, Ren-fa Li

SESSION: SENSOR NETWORKS

- ERoS: Role Sharing for Improved Energy Efficiency in Cluster-Based Wireless Sensor Networks** 61

Jenn-Long Liu, Chinya V. Ravishankar

- A Partial Sorting Algorithm in Multi-Hop Wireless Sensor Networks** 68

Aboubecrine Ould Cheikhna, Jean Frederic Myoupo

- Energy Efficient Clustering Algorithms for Wireless Sensor Networks** 75

Shaohang Cui, Ken Ferens

Finite State Automata based Fault Tolerant and Energy Efficient Routing (FSA-FTEER) in Wireless Sensor Networks 81

Arun Nutakki, Venkata Krishna Parimala, Aditya Ahuja, Saritha V

Security-Oriented Robust Networking Architecture and Key Management for Heterogeneous Wireless Sensor Networks 88

McKenzie McNeal III, Wei Chen, Sachin Shetty, Stanley Aungst

On Power Control Methods for Wireless Sensor Networks 95

Jihad Qaddour

Design and Implementation of Wireless Sensor Network based Ubiquitous Greenhouse System 102

Jeong-hwan Hwang, Mi-suk Kim, Hyun Yoe

Design and Implementation of middleware for Cattle Barn based on Ubiquitous Sensor Network 108

Jiwoong Lee, Hyun Yoe

Shorter Delay Transmission of Sensor Data by Intermediate Directional Nodes 113

Hitoshi Imahori, Hiroaki Higaki

A Cognitive Approach to Link Optimization Utilized in Wireless Sensor Networks 117

Lun Zhang, Jia Mei Wang, Bi Sheng Fang

Assessment Approaches to Wireless Sensor Networks Utilized in Urban Mass Transit 121

Lun Zhang, Bi Sheng Fang, Jia Mei Wang

Deployment of Sparse Sensor-Actuator Network in a Virtual Architecture 126

Sebastien Faye, Jean Frederic Myoupo

SESSION: SYSTEM ANALYSIS

Design and Implementation of ZigBee Based Vibration Monitoring and Analysis for Electrical Machines 135

Suratsavadee Korkua, Wei-Jen Lee, Chiman Kwan

Vertical Handoff Analysis between WLAN and 3G Networks under an Adaptive QoS Control 141

Soungalo Traoré, Renfa Li, Fanzi Zeng, Humphrey Waita Njogu

Throughput Analysis of the IEEE 802.11 Power Save Mode in Single Hop Ad hoc Networks 147

Pravati Swain, Sandip Chakraborty, Sukumar Nandi, Purandar Bhaduri

A Weight based Context Analysis System to Provide a Required UMM Service 153
Preeti Khanwalkar, Pallapa Venkataram

Analysis of Processing Parameters of GPS Signal Acquisition Scheme 160
Vrushali Bhatt, Nithin Krishnan

Analysis of Cooperative Relay-Based Energy Detection of Unknown Deterministic Signals in Cognitive Radio Networks 167
Oluwatobi Olabiyi, Annamalai Annamalai

Formal Analysis of Mobility Management for Ad hoc Networks 173
Shakeel Ahmed, Ashwani Ramani, Nazir A. Zafar

SESSION: PROTOCOLS

AISAC: A Novel Artificial Immune System-based Area Coverage Protocol for WSNs 183
Arash Nikdel, S.Mahdi Jameii, Mohamad Sabour

A New Model for the ns-3 Simulator of a Novel Routing Protocol Applied to Underwater WSN 190
Salvador Climent, Juan Vicente Capella, Alberto Bonastre, Rafael Ors

Variable Ranges Security Protocol for Wireless Sensor Networks 197
Faruk Bagci, Alaa Khalifeh, Georg Jung, Christian Sturm

Empirical Study of Mobility Effect on IEEE 802.11 MAC Protocol for Mobile Ad-Hoc Networks 204
Mojtaba Razfar, Jane Dong

Comparison of DSR, AODV and DSDV Routing Protocols in Fully and Partially Connected VANET 212
Sayed Mohammad Mehdi Feiz, Ali Movaghar

Improvement of Medium Access Control Protocol to Reduce Latency in Ubiquitous Wireless Sensor Networks 216
Myung-Sub Lee, Chang-Hyeon Park

Hardware Implementation of the Energy-Efficient Hybrid Key Management Protocol for Wireless Sensor Networks 223
Eyad Taqieddin, Maciej Zawodniok, Sarangapani Jagannathan, Ann Miller

Intelligent Node Placement using GA (INPGA) Protocol in Wireless Sensor Networks 230
Zeynep Orman, Ali Norouzi, Faezeh Sadat Babamir

SESSION: WIRELESS NETWORKS

Jointly Optimal Congestion Control, Network Coding and Power Control for QoS Multicast over DiffServ MAI-affected Wireless Networks 237

Enzo Baccarelli, Nicola Cordeschi, Valentina Polli

A Practical Perspective of Wireless Network Coding 244

Marium Jalal Chaudhry, Timo Hamalainen, Jyrki Joutsensalo, Farhat Saleemi, Kari Luostarinen

An Energy-Efficient Transmission Scheme for Cooperative MIMO Wireless Networks 251

Jain-Shing Liu

Measurement and Comparative Analysis of UDP Traffic over Wireless Networks 258

Sumit Maheshwari, Vasu Kantubukta, C.S. Kumar, Sudipta Mahapatra

WiNteB (Wireless National Test Bed) Description, Status and Opportunities 263

Mark Cummings

Detecting Masqueraders in 802.11 Wireless Networks 267

Liran Ma

Survey: Security Measures and Associated Drawbacks of Wireless Body Area Network (WBAN) 272

Iehab AL Rasan, Naveed Khan

Empirical Channel Model for 2.4GHz IEEE 802.11 WLAN 278

Stanley Cebula, Aftab Ahmad, Jonathan Graham, Cheryl Hinds, Luay Wahsheh, Aurelia Williams, Sandra DeLoatch

Throughput Analysis using Smartphone in WiFi Network 283

Woojin Sohn, Saleem Aslam, Kyung-Geun Lee

Intelligent Smart Building and Its Wireless Network Environments 287

Chaehwan Kim, Jungchan Ahn, Kyung-Geun Lee

SESSION: ALGORITHMS AND PROTOCOLS

The Ins and Outs of Distance-Based WSN Localization Schemes 291

Kerri Stone, Tracy Camp

On the Energy Detection of Unknown Deterministic Signals over Generalized Fading Channel 298

Oluwatobi Olabiyi, Shumon Alam, Olusegun Odejide, Annamalai Annamalai

Service Discovery in Urban Cooperative Networks	304
<i>Yong Shen, Shafique Ahmad Chaudhry</i>	
DTN Routing with Localized Distribution of Mobility Plans	310
<i>Yo Chigira, Hiroaki Higaki</i>	
CBC Based Inter-LMA Route Optimization for the Race Condition Problem	317
<i>Eunyoung Oh, Eunjoo Jeong, Sunme Ryu, Byunggi Kim</i>	
A Study on the Reduction of Overhead based on Message Lists in DTN	320
<i>YoungBhin Song, Eunjoo Jeong, WooYeon Joo, Byunggi Kim</i>	
On Packet Tracer Implementation of Virtual Network: A Demonstration of Packet Travel and Collision Occurrences in Networks	323
<i>Obeten Ekabua, Basseyy Isong, Munienge Mbodila</i>	
A Novel VANET-Based Approach to Determine the Position of the Last Vehicle Waiting at a Traffic Light	327
<i>Eric Gamess, Imad Mahgoub</i>	
LDPC Generation and New Decoding Process based on Convolutional Encoder	334
<i>Jongsu Lee, Youil Lee, Joon-Young Jung, Sangseob Song</i>	
Introducing the Concepts of Swarm Intelligence and Genetic Algorithms in Cognitive Networks	339
<i>Laiti Apoorva</i>	
SESSION: APPLICATIONS	
Novel Data Harvesting Scheme for Efficient Data Aggregation	349
<i>Mohammed Zuheir Hourani, Nasir Hussain, Ridha Ouni</i>	
Non Iterative Decoding of Low Density Parity Check Codes Using Artificial Neural Network	355
<i>Daniel Blackmer, Frederick Schwaner, Ali Abedi</i>	
Non-intrusive Movement Detection in CARA Pervasive Healthcare Application	360
<i>Bingchuan Yuan, John Herbert</i>	
FlexiSim: A user Friendly Environment for Network Simulations	366
<i>Harshit Agarwal, Antriksh Saxena, Venkata Krishna Parimala, Saritha Vankadara</i>	
Software Update Methods for WSNs	373
<i>Hay-young Jung, Yeungmoon Kwon, Byoungchul Ahn, Bruce Kim</i>	

Based on Boundary Location Technology to Separate an Image Semi-automatically 378
Ge-gang Peng, Xin-yu Li, Ying Song, Li-sheng Xiang, Qing Shen

SESSION: THEORY + INTERESTING RESULTS

MANET Localization Using Non-Circular Overlapping Range Maps 385
Harish Muralidhara, Robert F. Kubichek

A Dynamic Hybrid Service Overlay Network for Service Compositions 389
Yousif Al Ridhawi, Gajaruban Kandavanam, Ahmed Karmouch

Delay-constrained Dimensioning of WiMAX Cellular Networks Carrying Multi-profile Real-time Traffic 396
Sebastien Doirieux, Bruno Baynat

Integrated Control Channel Mechanism for Efficient Channel Utilization in Tdma for Wlan Networks 403
Mohammed Amer Arafah, Nasir Hussain, Mohammed Zuheir Hourani

MANET Security Schemes 408
Asma Ahmed, Abdul Hanan, Shukor A. Razak, Izzeldin Mohammed

Adaptive Coded Modulation and Power Control over Cognitive Radio Network for QoS Provisioning 413
Kyungsup Kim

Data EPC Acquisition System Middleware Device Manager: DEPCAS MDM 419
Ismael Abad, Carlos Cerrada, Jose Antonio Cerrada, Ruben Heradio

Heuristic Resource Allocation with Satisfaction for WiMAX Services 424
Yung-Liang Lai, Jehn-Ruey Jiang

SESSION: NOVEL APPLICATIONS + ROUTING + LANS + PERFORMANCE ISSUES + AD-HOC AND SENSOR NETWORKS + WI-FI

Using Content-based Addresses as a Programming Construct for Scenario Specific Routing and Multicasting 431
R.P. Bosman, J.J. Lukkien, P.H.F.M. Verhoeven

Location Determination Systems for WLANs 438
Stanley Cebula, Aftab Ahmad, Luay Wahsheh, Jonathan Graham, Aurelia Williams, Cheryl Hinds, Sandra DeLoatch

Study of Wireless Network and How to Enhance its Performance	444
<i>Waqas ur Rehman Butt, Sohail Abbas</i>	
Experiences Managing a Parallel Mobile Ad-hoc Network Emulation Framework	449
<i>Travis Parker</i>	
AISTC: A new Artificial Immune System-based Topology Control Protocol for Wireless Sensor Networks	456
<i>Amir Massoud Bidgoli, Arash Nikdel</i>	
NetQTM: Node Configuration In Network Setup By Quantum Turing Machine	463
<i>Mehdi Bahrami, Peyman Arebi, Mohammad Bahrami</i>	
Q-learning Based Adaptive Zone Partition for Load Balancing in Multi-Sink Wireless Sensor Networks	467
<i>Sheng-Tzong Cheng, Tun-Yu Chang</i>	
Beyond LTE: Next Generation Multiple Access Technology with Intelligent Lower Layers	474
<i>Rajarshi Sanyal, Ramjee Prasad, Ernestina Cianca</i>	
Analysis of Handover over WLAN for VoIP	484
<i>Angela Chacon, Edward Guillen</i>	
Modified Decoding Algorithm for Irregular Repeat Accumulate Codes in Wireless Sensor System	491
<i>Meng Zhang, Hao Liu, Tao Wang, Chao Chen, Fuqing Huang, Jiafeng Zhu</i>	
Performance Comparison of AODV and AOMDV Routing Protocols	496
<i>Sangapp Ramachandra Biradar, Sawal Kishore Singh, Subir Kumar Sarkar</i>	
Bandwidth Estimation for Radio Based Train Control and Communication System	502
<i>Byungsik Yoon, Min-woo Jung, Sook-jin Lee, Keun-hong Min, Young-Kyu Kim</i>	
A Routing Protocol using Out-of-band Control in MANETs	506
<i>Woosuck Chang, Chen Ni, Chulho Jang, Chonggun Kim</i>	
An Energy-efficient Coverage Pattern of WSNs for High Rate Data Transmissions	512
<i>Manh Thuong Quan Dao, Ngoc Duy Nguyen, Vyacheslav Zalyubovskiy, Hyunseung Choo</i>	
Random Point Process Modeling of Location and Time Dependent Interference in Uplink of Mobile Communication Systems	518
<i>K.S.Subramanian Iyer, Vijayalakshmi Chetlapalli</i>	

Authentication/Association Flooding Dos Attacks and their Impact on Wireless Mesh Networks	522
<i>Rupinder Cheema, Divya Bansal, Sanjeev Sofat</i>	
Wi-Fi Technology in the Smart Grid Backhaul	529
<i>Carlos Oliveira, Elaine Fonseca</i>	
Improving Performance of Transmission Control Protocol for Mobile Networks	533
<i>Dulal Kar, Swetha Pandala, Ajay Katangur</i>	
A Novel Open Platform for Interoperability of Heterogeneous Personal Health Devices in u-Health care Environment	540
<i>Min-woo Jung, Jeonghun Cho</i>	
Frequential Reconfiguration by Changing the Substrate EBG / PBG	542
<i>Catarine Medeiros Resende, Antonio Vieira , Humberto Cesar Chaves Fernandes</i>	
Reputation-based Enforcement Schemes Tailored to Opportunistic Networks Design	546
<i>Amir Modarresi, Issac Woungang, Leila Reyhani, Hoda Razavi</i>	
Radiation Efficiency of Rectangular Slot Resonator with Multilayer Photonic	553
<i>Humberto Dionisio de Andrade, Anderson Max Cirilo Silva , Humberto Cesar Chaves Fernandes</i>	
Novel Placement Mesh Router Approach for Wireless Mesh Network	559
<i>Mohsen Rezaei, Mehdi Agha Sarram, Vali Derhami, Hossein Mahboob Sarvestani</i>	
Rectangular Microstrip Antennas Linear Array with Superconductor at High Temperature	565
<i>Humberto Cesar Chaves Fernandes, Hugo Michel Azevedo Maia , Leonardo Martins Caetano</i>	
Improving Network Lifetime with Fuzzy Sink Mobility Scheme in Wireless Sensor Network	569
<i>Hossein Mahboob Sarvestani, Mehdi Agha Sarram, Vali Derhami, Mohsen Rezaei</i>	