

2009 First Asian Himalayas International Conference on Internet

(AH-ICI 2009)

**Kathmundu, Nepal
3 – 5 November 2009**



**IEEE Catalog Number: CFP0931H-PRT
ISBN: 978-1-4244-4569-1**

TABLE OF CONTENTS

SESSION 1: SATELLITE COMMUNICATIONS SYSTEMS **REGENCY BALLROOM A**

Routing Space Internet Based on Dijkstra's Algorithm	1
<i>X. Y. Li, G. S. Li, S. T. Zhang</i>	
Telemetry Microcomputer Application in Satellites OBC	5
<i>H. E. H. Ahmed, E. Kamal, A. Elsayed</i>	
NS-2 Network Performance Evaluation of Abis Interface Over DVB-S2 in the GSM over Satellite Network	11
<i>S. B. Musabekov, R. R. Ibraimov</i>	
SMC Protocol for Privacy Preserving in Banking Computations Along with Security Analysis	16
<i>R. Pathak, S. Joshi</i>	

SESSION 2: E- AND M- COMMERCE **REGENCY BALLROOM A**

Multi-Scale Modeling of Nano Scale Phenomenon Using CUDA Based HPC Setup	21
<i>R. Pathak, S. Joshi</i>	
Emergence of Payment Systems in the Age of Electronic Commerce: The State of Art	26
<i>S. Sumanjeet</i>	
A Comparative Study of a Proxy Memory Buffer for Energy Reduction	44
<i>A. A. M. Monzur-Ul-Akhir, A. H. M. Saiful Islam, S. F. Islam, S. A. Sagor</i>	
GaTMO: Game Theoretic Trust Model for Peer to Peer Networks	50
<i>G. Kumar-M</i>	

SESSION 3: MILITARY APPLICATION OF COMMUNICATIONS AND INFORMATION SECURITY REGENCY BALLROOM B

A Novel Approach for Avoiding Wormhole Attacks in VANET	54
<i>S. M. Safi, A. Movaghar, M. Mohammadizadeh</i>	
Estimation of Angle Glint for Different Radar Targets	60
<i>S. Balaji, R. Santhakumar, S. Rajalakshmi</i>	
Modeling and Analysis of DC Traction System Under Light of Current Developments in HPC and Virtual Reality	65
<i>R. Pathak, S. Joshi</i>	

SESSION 4: OPTICAL COMMUNICATIONS AND NETWORKING **REGENCY BALLROOM A**

Performance Analysis of Optical Network Based on OADM by Using Different Filters	70
<i>M. I. Anis, K. Zaka, N. Ahmed, U. Ahmed</i>	
Packet Delay Analysis for Limited Service Bandwidth Allocation Algorithm in EPONs	75
<i>S. Bharati, P. Saengudomlert</i>	
An Effective Dynamic Parallel Downloading Scheme with Network Coding in Grid Networks	80
<i>K. Hirata, Y. Higami, S. Y. Kobayashi</i>	
Traffic Statistics and Optical Burst Overlap Reduction in Core Router of OBS Networks	85
<i>A. Das, S. Chakraborty, S. Saha, A. K. Das</i>	
Modeling of FFH-OCDMA System for Local Access Upgrade	90
<i>G. Geetha, M. Meenakshi</i>	

**SESSION 5: MIMO AND BEAM FORMING AND OFDM
REGENCY BALLROOM A**

Technique for Channel Estimation in OFDM Transmission System Using Linear Interpolation and Euclidean Distance Algorithm	95
<i>K. Zaka, A. Y. Ali, M. I. Anis, S. U. Zaman, I. Usmani, N. Ahmed</i>	
ANN Based Rayleigh Multipath Fading Channel Estimation of a MIMO-OFDM System	100
<i>K. K. Sarma, A. Mitra</i>	
Common Sub-Expression Elimination in PAPR Reduction of OFDM System	105
<i>S. Haleem, S. A. Khan</i>	
Active Noise Control for Real Time Blind Speech Mining Using Single-Channel Noise	110
<i>S. F. Islam, M. S. Shameem, A. H. M. S. Islam</i>	
Performance Comparison of the Semi-blind Channel Estimation Methods of MIMO Communication System	115
<i>J. Bhalani, A. I. Trivedi, Y. P. Kosta</i>	
Frequency Synchronization for Multi Input Multi Output Orthogonal Frequency Division Multiplexing Systems	120
<i>A. Abdullah, S. A. Khan</i>	
Symbol Timing Synchronization for IEEE 802.11n WLAN Systems	126
<i>M. Cho, Y. Jung, J. Kim</i>	

**SESSION 6: INTELLIGENT TRANSPORTATION SYSTEMS
REGENCY BALLROOM B**

Development of an Efficient Radio Communication Scheme for a Mobile Automated Vehicular System	132
<i>T. C. Manjunath, S. K. Siri</i>	
Gravitational Emulation Local Search Algorithm for Advanced Reservation and Scheduling in Grid Systems	136
<i>B. Barzegar, A. M. Rahmani, K. Z. Far</i>	
Analysis of Security Issues in SMC Based RFID in Supply Chain Management with Energy Modeling	141
<i>R. Pathak, S. Joshi</i>	
Study of Safety and Efficient Routing for Intelligent Transportation System	146
<i>C. W. Chen, X. C. Chen, I. H. Peng, Y. W. Chen</i>	
Recent Trends in RFID and a Java Based Software Framework for its Integration in Mobile Phones	151
<i>R. Pathak, S. Joshi</i>	

**SESSION 7: DYNAMIC SPECTRUM ACCESS NETWORKS
REGENCY BALLROOM B**

Signal Processing Techniques for Spectrum Sensing in Cognitive Radio Systems: Challenges and Perspectives	156
<i>D. B. Rawat, G. Yan</i>	
Energy Modeling in Carbon Nano Tube Based Wireless Sensor Networks	161
<i>R. Pathak, S. Joshi</i>	

**SESSION 8: INTERNET APPLICATIONS
REGENCY BALLROOM A**

Research on Internet-based Remote Fault Diagnosis Expert System	164
<i>H. Yi</i>	
A Novel Scheme of Generating Streamable MP4 Files for Scalable Video Coding	168
<i>J. Chen, D. Wu, H. Gao, J. Y. Tham</i>	
Introducing P2P Architecture in Adaptive Covert Communication System	173
<i>F. V. Yarochkin, S. Y. Dai, C. H. Lin, Y. Huang, S. Y. Kuo</i>	

Single Sign-on with One Time Password	180
<i>P. B. Tiwari, S. R. Joshi</i>	

SESSION 9: OPTICAL PASSIVE AND ACTIVE COMPONENTS AND DEVICES
REGENCY BALLROOM A

Theoretical Analysis of Noise Performance of an In _{0.10} GA _{0.90} Sb Avalanche Photodiode	184
<i>W. Hussain, V. T. Rouf</i>	
Characterization of Microfabricated Multilayered Nearfield Cantilever Array.....	188
<i>S. Shrestha, S. S. Choi, D. W. Kim, M. J. Park</i>	
Reliability Modeling of MEMS Devices on CUDA Based HPC Setup	193
<i>R. Pathak, S. Joshi</i>	
Design of Optical Logic Gates Using Photonic Crystal.....	198
<i>A. P. Kabilan, X. S. Christina, P. E. Caroline</i>	

SESSION 10: ULTRA WIDE BAND UWB AND RFID
REGENCY BALLROOM B

Fourth Generation of Mobile Communication Systems: Evolution, Objectives, Prospects and Challenges	202
<i>S. K. Subedi</i>	
Power Feeding and Digital Block Design of Multi-standard Passive RFID Tag	208
<i>M. Kothamasu, R. Paily</i>	
Performance Analysis and Recognition of IR-UWB Signals Using TR System.....	213
<i>S. F. Islam, M. S. Shameem, A. H. M. S. Islam, S. A. Sagor, T. M. N. Huda</i>	
A New Compact CPW Fed Slot Antenna for UWB Applications	218
<i>J. William, R. Nakkeeran</i>	

SESSION 11: WIRELESS COMMUNICATIONS AND NETWORKING I
REGENCY BALLROOM B

Architecture of Stability Routing Protocols in Ad Hoc Wireless Networks.....	223
<i>S. A. Otaibi, F. Siewe</i>	
A Low Power Inductive-Coupled Transceiver for Inter-Chip Communication.....	229
<i>S. R. Rupiti, D. Hazarika, N. Suda, R. Paily</i>	
Characterization of Radio Propagation at 60GHz Channel.....	233
<i>A. Deshmukh, S. K. Bodhe</i>	
RA-SPAN Protocol For Improving QoS Performance In Wireles Ad Hoc Networks	241
<i>T. Manimekalai, M. Meenakshi, P. Saravanaselvi</i>	

SESSION 12: NETWORK MANAGEMENT AND SERVICES
REGENCY BALLROOM A

Review Paper: Comparative Study of Embedded Sytem Architectures for Implementation of ECC.....	246
<i>A. R. Tungar</i>	
Two New Biasing Load Balancing Algorithms in Distributed Systems.....	249
<i>I. Barazandeh, S. S. Mortazavi, A. M. Rahmani</i>	
Efficient Testing Environment for Wireless Networking Experiments.....	254
<i>M. S. Shameem, R. Ferdous, S. F. Islam, A. H. M. S. Islam, S. A. Sagor</i>	
A Cross Layer Approach for Controlling Jitter in MANET Based on Bandwidth Estimation	260
<i>R. Patil, A. Damodaram, R. Das</i>	
Order-Based Localization Scheme in Ad Hoc Sensor Networks	265
<i>Y. H. Chen, S. Y. Yuan, C. H. Ho, S. Y. Kuo</i>	
An ID-Based Routing Protocol for WSN	270
<i>V. Torkzaban, S. Rahmani, M. Dehghan</i>	

Dynamic Home Agent Assignment in Peer-to-Peer Overlay Networks	275
<i>W. Chen, S. Y. Kuo</i>	
Implementation of Virtual Reality and Agents Model Based Nano Domain Simulation an HPC Setup	280
<i>R. Pathak, S Joshi</i>	

SESSION 13: INFORMATION AND COMMUNICATIONS TECHNOLOGIES
REGENCY BALLROOM B

Development of Piezoelectric and Relaxor Ceramics for Sensor Materials	285
<i>A. P. Singh, B. R. Kumar</i>	
Codes for Magnetic Recorders	288
<i>V. C. Kotak, B. K. Lande</i>	
An Efficient Voice Over Internet Telephone Call Network (TCN) Model Based on User Perspective for Analyzing the Dynamic Behavior of the Telephone Calls	291
<i>M. S. Shameem, R. Ferdous</i>	
Support Interoperability of e-Science Infrastructures with a Common Information Service	297
<i>A. Memon, M. Riedel, M. Memon, A. Streit, B. Konya, S. Andreozzi</i>	
Performance Analysis of Hybrid Protocol Based on Dynamic Contention Window for Power Line Communication Systems	303
<i>A. Rajesh, M. Rathinasabapathy, R. Nakkeeran</i>	

SESSION 14: WIRELESS COMMUNICATIONS AND NETWORKING II
REGENCY BALLROOM B

A New Degree Distribution for LT Codes for Broadcasting in ad-hoc Network Using Network Coding	310
<i>M. S. Zaman, G. RamaMurthy</i>	
Challenges in 802.11 Encryption Algorithms: The Need for an Adaptive Scheme for Improved Performance	315
<i>B. Bhattarai, B. Paudel</i>	

SESSION 15: ARCHITECTURES, DEVICES AND SECURITY AND PRIVACY I
REGENCY BALLROOM A

Access Control for OSGi-Based Reconfigurable RFID Middleware	320
<i>B. Du, S. Ju, D. Wang</i>	
HIP-Tags Architecture Implementation for the Internet of Things	325
<i>P. Urien, H. Chabanne, K. Toumi, P. Krzanik</i>	
Uniform Authentication Principles for Multiprotocol NAS Devices	330
<i>M. Khinvasara, C. Soman</i>	
Novel Design of a Wireless Communication Based Automatic Surveillance System for Detection of Suspicious Objects	336
<i>T. C. Manjunath</i>	
An Aspect Oriented Approach to Improvement Role Based Access Control Systems	343
<i>M. Hazaa, A. A. A. Ghani, A. Mamat, H. Ibrahim</i>	
Mutual Authentication Technique Using Three Entities in 3-G Mobile Communications	358
<i>C. Koner, P. K. Bhattacharjee, C. T. Bhunia, U. Maulik</i>	
Security of Access in Hostile Environments Based on the History of Nodes in ad hoc Networks	363
<i>S. A. Otaibi, F. Siewe</i>	

SESSION 16: WLAN AND MOBILE WIMAX, 3G AND 4G SYSTEMS
REGENCY BALLROOM B

Security Concerns in WiMAX	369
<i>S. S. Hasan, M. A. Qadeer</i>	

Throughput Enhancement of IEEE 802.11 WLAN for Multimedia Communications	374
<i>T. M. N. Huda</i>	
Performance Analysis and Throughput Optimization in IEEE 802.16 WiMax Standard	380
<i>K. Zaka, N. Ahmed, M. I. Haq, M. I. Anis, B. Faria</i>	
An Efficient Frequency Reuse Scheme by Cell Sectorization in OFDMA Based Wireless Networks	384
<i>A. Boustani, N. MirMotahhary, R. Danesfahani, S. Khorsandi</i>	
Interference Evaluation and MS Controlled Handoff Technique for FemtoCell	390
<i>A. A. Habeeb, M. A. Qadeer</i>	
A Simplified ASN Anchored Mobility Scheme Over Mobile WiMAX	395
<i>S. C. Ke, I. H. Peng, Y. W. Chen, T. S. Yeh</i>	
Investigating the Performance of Various Vocoders for a Fair Scheduling Algorithm in WiMAX	399
<i>B. Kaarthick, V. J. Yeshwenth, N. Nagarajan</i>	
QoS Coordinated Distributed Scheduling for 802.16 Mesh Networks	404
<i>L. D. Chou, Y. C. Lin, Z. H. Chen</i>	

SESSION 17: MOBILE AD-HOC AND SENSOR MESH NETWORKS I
REGENCY BALLROOM A

A QoS Based Robust Multipath Routing Protocol for Mobile Adhoc Networks	409
<i>S. Venkatasubramanian, N. P. Gopalan</i>	
Cooperative Data Caching With Prefetching in Mobile Ad-Hoc Networks	416
<i>N. Chauhan, L. K. Awasthi, N. Chand</i>	
Position Based Routing Protocol With More Reliability In Mobile Ad Hoc Networks	420
<i>M. Abdoos, K. Faez, M. Sabaei</i>	
Interference in Wireless Multi-hop Ad-hoc Networks Using Omni-directional and Directional Antennas	424
<i>B. R. Arif</i>	
Combat with Black Hole Attack in AODV Routing Protocol in MANET	429
<i>M. Medadian, M. H. Yektaie, A. M. Rahmani</i>	
Joint Scheduling and Routing Protocol for Backbone Based MANET's	434
<i>R. Patil, A. Damodaram, S. Soma</i>	
Multple Metrics Based Load Balancing Routing Protocol for Mobile Ad Hoc Networks	439
<i>S. P. Terdal, V. D. Mytri, A. Damodaram</i>	
Energy Efficient Cross Layer Routing for Life Time Maximization in Wireless Sensor Networks	444
<i>K. Pudashine</i>	

SESSION 18: MOBILITY AND MOBILE COMMUNICATIONS
REGENCY BALLROOM B

Active Noise Control for Industrial Applications	447
<i>T. M. N. Huda, S. F. Islam</i>	
Correlation Analysis of the Gold Codes and Walsh Codes in CDMA Technology	452
<i>T. M. N. Huda, S. F. Islam</i>	
Situation-awareness and Sensor Stream Mining for Sustainable Society	456
<i>Z. U. Rehman, M. Shaheen</i>	
A Concurrent Blind Multiuser Equalization Scheme for DS-CDMA Systems	461
<i>A. Mitra</i>	
Adaptive Gain Equalizer Algorithm Using Analog Electronic Circuit for Speech Enhancement in Voice Over Internet Protocol	466
<i>S. F. Islam, M. S. Shameem, A. H. M. S. Islam</i>	
An Enhanced Multipolicy Approach to Vertical Handoff Decision Across WLAN and UMTS Networks	471
<i>A. J. Onumanyi, E. N. Onwuka</i>	
Province of Multiuser M-learning Environment Using Artificial Intelligence & Bluetooth Techniques	477
<i>D. M. Puntambekar, S. Gondal, M. Agrawal</i>	

**SESSION 19: SIMULATION, MODELING AND ANALYSIS AND PERFORMANCE
EVALUATIONS REGENCY BALLROOM A**

Performance Analysis of EXP/PF and M-LWDF in Downlink 3GPP LTE System	482
<i>R. Basukala, H. A. M. Ramli, K. Sandrasegaran</i>	
Design of Multiband Fractal Antenna for Mobile and Handheld Terminals	487
<i>R. K. Kanth, A. K. Singhal, P. Liljeberg, H. Tenhunen</i>	
Preeminent Pair of Replacement Algorithms for L1 and L2 Cache for Proxy Server	491
<i>R. Gupta, S. Tokekar</i>	
An Efficient K-Means Algorithm Integrated with Jaccard Distance Measure for Document Clustering	496
<i>M. S. Shameem, R. Ferdous</i>	
Performance Comparison of Non-Linear and Adaptive Equalization Algorithms for Wireless Digital Communication	502
<i>J. Bhalani, A. I. Trivedi, Y. P. Kosta</i>	
An Optimum Branching-Based Efficient Distributed Broadcast Scheme for Wireless Ad Hoc Networks	507
<i>L. S. Chen, J. H. Chen, H. C. Wang</i>	
Novel Algorithms for QoS Localized Routing in Communication Networks	513
<i>T. A. A. Ghamdi, M. E. Woodward</i>	
Cross Layer Fair Scheduling for MANET with 802.11 CDMA Channels	520
<i>R. Patil, A. Damodaram, R. Das</i>	

**SESSION 20: MOBILE AD-HOC AND SENSOR MESH NETWORKS II
REGENCY BALLROOM B**

A Hybrid Protocol for Wireless Sensor Network	525
<i>S. M. T. Haque</i>	
Additional Sink Placement Strategy in Wireless Sensor Network	528
<i>S. M. T. Haque, R. Tabassum</i>	
PAAR: A Routing Protocol for Context-Aware Services in Wireless Sensor-Actuator networks	531
<i>B. Koo, J. Won, S. Park, H. Eom</i>	
Clustered and Leveled Disjoint Multipath Routing Algorithm for Wireless Sensor Networks	538
<i>M. S. Zaman, G. RamaMurthy</i>	

**SESSION 21: ARCHITECTURES, DEVICES AND SECURITY AND PRIVACY II
REGENCY BALLROOM B**

Research and Development of QoS for RFID Middleware	543
<i>S. Ju, D. Wang, B. Du</i>	
Cellular Phone Based Web Authentication System Using 3-D Encryption Technique Under Stochastic Framework	549
<i>S. Gupta, S. Sengupta, M. Bhattacharyya, S. Chattrejee, B. S. Sharma</i>	
Research on Trused Network Model Based on BLP Model	554
<i>W. Ou, W. Han</i>	
Low Phase Noise 10 bit 5 GHz DCO Using On-Chip CPW Resonator in 0.18 um CMOS Technology	560
<i>R. K. Pokharel, K. Uchida, A. Tomar, H. Kanaya, K. Yoshida</i>	
Author Index	