

PROGRAM AT A GLANCE

WOCC, Friday, April 07, 2017

08:15–17:00	Registration	
09:00–10:20	O1 Optical Transmission Systems and Modeling <i>Chair: Mark Feuer</i> <i>College of Staten Island, CUNY</i>	W1 Mobile Communications and Resource Optimization <i>Chair: Wei Feng</i> <i>Tsinghua University</i>
10:20–10:30	Break	
10:30–10:35	Opening Remarks/ Welcome Speech: Dr. Atam P. Dhawan, Vice Provost for Research, NJIT	
10:35–11:30	K1 Keynote Session <i>(Chair: Russell Sun)</i> Dr. Thomas Marzetta, Nokia Bell Labs, “Massive MIMO: The Right 5G Technology!”	
11:35–12:30	K2 Keynote Session <i>(Chair: Russell Sun)</i> Dr. Frank Effenberger, Vice President Access Lab, Huawei US, “Broadband Optical Access and PON Convergence”	
12:35–13:30	Lunch	
13:30–15:30	P 5G Plenary Panel 5G Opportunities and Challenges – from Air Interface to Network Architecture <i>(Chair: Meilong Jiang; Lichun Wang)</i> Dr. Yongxing Zhou – Huawei; Dr. Raychaudhuri Dipankar – Rutgers; Dr. Ajay Rajkumar – Nokia; Dr. Ashutosh Dutta - AT&T; Dr. Lichun Wang – NCTU; Dr. Chong Li – Qualcomm	
15:30–15:40	Break	
15:40–17:20	O2 Free Space Optical Communications I <i>Chair: Ioannis Roudas</i> <i>Montana State University, Bozeman</i>	N1 Network and Security <i>Chair: Hong Zhao</i> <i>FDU</i>

WOCC, Saturday, April 08, 2017

08:15–17:00	Registration	
09:00–10:20	W2 PHY/MAC technologies for Wireless Communications <i>Chair: Uttara Sawant</i> <i>University of North Texas</i>	
10:20–10:30	Break	
10:30–11:30	K3 Keynote Session <i>(Chair: Xin Jiang)</i> Prof. Gang Qu, University of Maryland at College Park, “How Hardware Are Made Insecure and Untrusted?”	
11:30–12:30	K4 Keynote Session <i>(Chair: Xin Jiang)</i> Prof. KosrowDehnad, Columbia University, “Big Data Transforming Businesses: A Finance Perspective”	
12:30–13:30	Lunch	
13:30–15:10	O3 Optical Fiber Communication Systems and Networks <i>Chair: Xin Jiang</i> <i>College of Staten Island, CUNY</i>	W3 Massive MIMO and mmWave Technologies <i>Chair: Haixia Zhang</i> <i>Shandong University</i>
15:10–15:40	Break	
15:40–17:20	O4 Free Space Optical Communications II <i>Chair: Lufeng Leng</i> <i>New York City College of Technology, CUNY</i>	W4 Wireless Sensor Networks and Relay <i>Chair: Djamel Djenouri</i> <i>CERIST Research Center</i>
		B1 Data Sensing, Modeling and Inference <i>Chair: Rensheng Wang</i> <i>AT&T Research Labs</i>
		B2 Big Data Analytics <i>Chair: Ye Ouyang</i> <i>Verizon Wireless</i>

K – Keynote

P – Plenary

W – Wireless

N – Network

B – Big Data

O – Optical

WOCC Technical Sessions – Friday, April 07, 2017, 09:00 – 10:20

O1

**Optical Transmission Systems
and Modeling**Chair: Mark D. Feuer
College of Staten Island, CUNY*Modeling of modal dispersion in multimode and multicore optical fibers*Ioannis Roudas (*Invited*)

Montana State University, Bozeman, MT

*Multicore fiber transmission over transoceanic distances*Alexey Turukhin (*Invited*)

TE SubCom, NJ

*Demonstration of a polarization diversity based SH-QPSK system with
CMA-DFE equalizer*Rashmi Kamran, Nandish Bharat Thaker, Mehul Anghan,Nandakumar Nambath, and Shalabh Gupta

Indian Institute of Technology Bombay, Mumbai, India

W1

**Mobile Communications
and Resource Optimization**Chair: Wei Feng
Tsinghua University*Optical Mobile Communications Principles and Challenges*Zaichen Zhang, Liang Wu, Jian Dan,Guanghao Zhu, Jiashun Hu, Hao Jiang,Xiaohu Yo, andZaichen Zhang* (*Invited*)

Southeast University

*Coordinated Satellite-Terrestrial Networks: A Robust Spectrum Sharing
Perspective*Wei Feng, Ning Ge, Jianhua Lu, andWei Feng* (*Invited*)

Tsinghua University

*Resource Optimizer for Cognitive Network Using Multi-Objective Particle
Swarm System*Hossam M. Alsake*, Korany R. Mahmoud, HusseinM. ElAttar, Mohamed A. Aboul-Dahab

Arab Academy For Science, Technology &

Maritime Transport

*Fuzzy Logic Based Vertical Handover Algorithm for Trunking System*Lu Zhang*, Lu Ge, Xin Su, Jie Zeng

Chongqing University of Posts and Telecommunications,

Tsinghua University

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02

Free Space Optical Communications I

Chair: Ioannis Roudas
Montana State University, Bozeman, MT

Impact of 5G Wireless on Modern Optical Networks

Xiang Liu (Invited)
HUAWEI R&D USA, NJ

Cyber-enabled Displays - An application of Massive-Parallel Free-space Optics

Mark D. Feuer (Invited)
College of Staten Island, CUNY, NY

64 Gb/s Quantum-dash Laser based Indoor Free Space Optical Communication

M. Talal A. Khan, M.A. Shemis, A. M. Ragheb, H. Fathallah, S. Alshebeili, and M. Z. M. Khan*

***King Fahd University of Petroleum and Minerals, Saudi Arabia**

Experimental Investigation of DCO-OFDM Adaptive Loading Using Si PN-based Receiver

Ahmed F. Hussein*; Hany Elgala, Bassem Fahs, and Mona M. Hella
***SUNY at Albany, NY**

A Meter-Scale 600-Mb/s 2x2 Imaging MIMO OOK VLC Link Using Commercial LEDs and Si p-n Photodiode Array

Bassem Fahs*, Matthew J. Senneca, Jeffrey Chellis, Brandon Mazzara, Sagar Ray, Javad Ghasemi, Yun Miao, Payman Zarkesh-Ha, Valencia J. Koomson, and Mona M. Hella

***Rensselaer Polytechnic Institute, NY**

N1

Network and Security

Chair: Hong Zhao
FDU

Cyberattacks and Countermeasures on Network Devices

Qian Wang, Timothy Dunlap, Youngho Cho, and Gang Qu (Invited)
University of Maryland, College Park

A Novel Anomaly Detection System using Feature-based MSPCA with Sketch

Zhaomin Chen, Chai Kiat Yeo, Bu Sung Lee, Chiew Tong Lau

Nanyang Technological University, Singapore

Wavelength Channel Bonding for Gb/s Next Generation Passive Optical Networks

Yuanqiu Luo, Liang Zhang, Nirwan Ansari, Bo Gao, Xiang Liu, Frank Effenberger
Huwei Technologies; NJIT

SOSMAC: Separated Operation States in Medium Access Control for Emergency Communications on IEEE 802.11-like Crowded Networks

Paa Kwesi Esubonteng, and Roberto Rojas-Cessa
NJIT

Resilient Virtual Network Mapping Against Large-scale Regional Failures

Carlos Galdamez, and Zilong Ye (Invited)
California State University, Los Angeles

WOCC Technical Sessions – Saturday, April 08, 2017, 09:00 – 10:20

W2 **PHY/MAC technologies for
Wireless Communications**

*Chair: Uttara Sawant
University of North Texas*

*Data-Driven Power Control of Ultra-Dense
Femtocells: A Clustering Based Approach*
Li-Chun Wang*; Shao-Hung Cheng; Ang-
Hsun Tsai
National Chiao Tung University

*Area Spectral Efficiency for Cellular Networks with
Small Reuse Distance: An Algebraic Approach*
Hsin-An Hou; Li-Chun Wang*
***National Chiao Tung University**

*Evaluation of Adaptive and Non Adaptive LTE
Fractional Frequency Reuse Mechanisms*
Uttara Sawant*; Robert Akl
University of North Texas

*Impact of Channel Estimation Error on Upper Bound
of Rate Loss for Macro Cell in A VFDM System,*
Rugui Yao*; Yan Gao; Juan XU; Lukun Yao
Northwestern Polytechnical University

*Modulation Classification Using Convolutional
Neural Network Based Deep Learning Model,*
Shengliang Peng*; Hanyu Jiang; Huaxia Wang;
Hathal Alwageed; Yu-Dong Yao
**Huaqiao University, Stevens Institute of
Technology**

WOCC Technical Sessions – Saturday, April 08, 2017, 13:30 – 15:10

O3 Optical Fiber Communication Systems and Networks Chair: Xin Jiang College of Staten Island, CUNY	W3 Massive MIMO and mmWave Technologies Chair: Haixia Zhang Shandong University	B1 Data Sensing, Modeling and Inference Chair: Rensheng Wang AT&T Labs
<p><i>Impact of multiple-path interference on the performance of coherent transmission systems employing distributed Raman amplification</i> <u>Lufeng Leng (Invited)</u> City College of Technology, CUNY, NY</p> <p><i>Linearization of photonic components for digital and analog optical fiber communication systems</i> <u>Benjamin Dingel¹(Invited)</u> <u>Nicholas Madamopoulos²</u> ¹Nasfine Photonics Inc., NY ²Hellenic Airforce Academy, Greece</p> <p><i>Linearization of a Radio-over-Fiber Mobile Fronthaul with Feedback Loop</i> <u>Carlos Mateo, Jesus Clemente, Paloma Garcia-Ducar, Pedro L. Carro, Jesus de Mingo, and Inigo Salinas</u> University of Zaragoza, Zaragoza, Spain</p> <p><i>Colorless Flexi-Grid WDM-PON System Based on Polarization Multiplexed Optical Comb</i> <u>MadhanThollabandi, Ankush Mahajan, Arvind Mishra, and BadriGomatamei</u> Sterlite Technologies Ltd. India</p>	<p><i>Joint Pilot Assignment and Pilot Contamination Precoding Design for Massive MIMO Systems,</i> <u>Mei Zhao; Haixia Zhang*(Invited)</u> <u>ShuaishuaiGuo; Dongfeng Yuan</u> Shandong University</p> <p><i>Downlink Channel Estimation and precoding for FDD 3D Massive MIMO/FD-MIMO Systems</i> <u>RubayetShafin;</u> <u>JianzhongZhang;Lingjia Liu*(Invited)</u> University of Kansas</p> <p><i>Optimized Time-Shifted Pilots for Maritime Massive MIMO Communication Systems</i> <u>Te Wei; Wei Feng*</u> Tsinghua University</p> <p><i>Low Complexity Hybrid Precoding for mmWave Massive MIMO Systems,</i> <u>Yueyun Chen; Yaxin Xing; Yanqing Xia*;</u> <u>Liuqing Yang</u> University of Science and Technology Beijing</p> <p><i>Adaptive Initial Beam Search for Sparse Millimeter Wave Channels,</i> <u>Mohammed Jasim*;</u> <u>Nasir Ghani</u> University of South Florida</p> <p><i>A Research for Millimeter Wave Patch Antenna And Array Synthesis ,</i> <u>Yueyun Chen; Shuaishuai Ma; SeyedMohadeskasaei;</u> <u>Rongling Jian*</u> *University of Science & Technology Beijing</p>	<p><i>Stream Data Analysis of Body Sensors for Sleep Posture Monitoring: An Automatic Labelling Approach</i> <u>Poyuan Jeng</u> <u>Li-Chun Wang</u> National Chiao Tung University</p> <p><i>Indoor Localization Framework with WiFi Fingerprinting</i> <u>RajanKhullar</u> <u>Ziqian (Cecilia) Dong</u> New York Institute of Technology</p> <p><i>Distributed Big Data Management in Smart Grid</i> <u>Umar Ahsan</u> <u>Abdul Bais</u> University of Regina</p> <p><i>App-SON: Application Characteristic Driven SON to Optimize LTE Network Performance and User Quality of Experience</i> <u>Ye Ouyang (Invited)</u> Verizon Wireless</p>

WOCC Technical Sessions – Saturday, April 08, 2017, 15:40 – 17:20

04 Free Space Optical Communications II Chair: Lufeng Leng City College of Technology, CUNY	W4 Wireless Sensor Networks and Relay Chair: Djamel Djenouri CERIST Research Center	B2 Big Data Analytics Chair: Ye Ouyang Verizon Wireless
<p><i>Wide Laser Beam in Free-Space Optical Communications for High-Speed Trains</i> <u>Roberto Rojas Cessa (Invited)</u> New Jersey Institute of Technology</p> <p><i>Dual-slope linear optical frequency discriminator for flexible, high performance frequency modulated direct detection (FM-DD) microwave photonics links</i> <u>Benjamin Dingel</u> Nasfine Photonics Inc. NY</p> <p><i>Hybrid Polymer Optical Fibre and Visible Light Communication Link for in-Home Network</i> <u>Wasiu O. Popoola, Evangelos Pikasis and Isaac Osahon</u> The University of Edinburgh, UK</p> <p><i>Low Loss Polymeric Electro-Optic Modulator Based on Disperse Red 1 Doped Fluorinated Polyimide</i> <u>Jie Tang, Li-Jiang Zhang, Long-De Wang, Feng Shan, and Tong Zhang*</u> *Southeast University, China</p> <p><i>Underwater Positioning System Based on Cellular Underwater Wireless Optical CDMA Networks</i> <u>Farhad Akhondi*, Amir Minoofar, Jawad A. Salehi</u> *The University of Arizona, AZ</p>	<p><i>ADABCAST: ADaptive BroadCAST Approach for Solar Energy Harvesting Wireless Sensor Networks</i> <u>Mustapha Khiati; Djamel Djenouri*</u> CERIST Research Center</p> <p><i>One-Step Clustering Protocol for Periodic Traffic Wireless Sensor Networks</i> <u>Nassima Merabtine; Djamel Djenouri*; Djamel Eddine Zegour; Elseddik Lamini; Rima Bellal; Imene Ghaoui; Nabila Dahlal</u> CERIST Research Center</p> <p><i>Sum-Rate Based Opportunistic Relay Selection With Channel Estimation Error For A Dual-Hop Multiple Half/Full-Duplex Bi-directional Wireless Relaying Networks</i> <u>Volkan Ozduran*; Ehsan Soleimani-Nasab; Siddik Yarman</u> Istanbul University</p> <p><i>Optimal Power Allocation for Achievable Secrecy Rate in An Untrusted Relay Network with Bounded Channel Estimation Error</i> <u>Tamer Mekkawy; Rugui Yao*; Fei XU; Ling Wang</u> Northwestern Polytechnical University</p> <p><i>Relay Assisted Multiple Input Multiple Output Wireless Communication System for Multiple Access Channel using Hybrid-STBC-VBLAST</i> <u>M MKamruzzaman</u> Department of Computer and Information Science, Aljouf University, KSA</p>	<p><i>Differential Evolution Algorithms under Multi-population Strategy</i> <u>Ishani Chatterjee</u> <u>Mengchu Zhou</u> New Jersey Institute of Technology</p> <p><i>Decision Tree Rule-based Feature Selection for Large-scale Imbalanced Data</i> <u>Haoyue Liu</u> <u>Mengchu Zhou</u> New Jersey Institute of Technology</p> <p><i>Statistic Analysis on Riemannian Manifold for Large-scale Visual Set Classification</i> <u>Shuanglu Dai (Invited)</u> Stevens Institute of Technology</p> <p><i>Visualization in the Big Data Era</i> <u>Rensheng Wang (Invited)</u> AT&T Research</p>