



Detailed Technical Program



**26th International Conference
on Telecommunications**

HA NOI, VIETNAM April 8 - 10

Day 1: Monday 8th April 2019

09:00 -09:30 **Opening Ceremony**
Room: **La Paix**
Participants:

9:30-10:30 **Keynote Talk 1**
Edge Cloud: A Pragmatic Approach for Cloud Decentralization
Siavash Alamouti, President & CEO, MIMIK, Canada

Room **La Paix**
Chair **Huan X Nguyen, Middlesex University, UK**

11:00-12:30 **Session 01: Energy Harvesting & PHY Security**

Room **Opal**
Chair **Long Bao Le, INRS, University of Quebec, Canada**

On the Performance of Regenerative Relaying for SWIPT in NOMA Systems
Huu Q. Tran and Ca V. Phan (Ho Chi Minh City University of Technology and Education, Vietnam); Quoc-Tuan Vien (Middlesex University, United Kingdom (Great Britain))

Enhanced Data Rates for Energy Harvesting Systems

Ghassan R. Alnwaimi (King Abdulaziz University; Faculty of Engineering, Saudi Arabia); Hatem Boujemaa (SupCom, Tunisia)

Hybrid Backscatter and Underlay Transmissions in RF-Powered Cognitive Radio Networks

Thinh Duy Tran and Long Bao Le (INRS, University of Quebec, Canada)

Physical Layer Security in Cellular Network in the Presence of Terrains

Fenghe Hu (King's College London, London, United Kingdom, United Kingdom (Great Britain)); Ayda Babaei and Hamid Aghvami (King's College London, United Kingdom (Great Britain))

11:00-12:30 **Session 02: Cooperative Communications**

Room **Onyx**
Chair **Ganesh Neelakanta Iyer, Amrita Vishwa Vidyapeetham, India**

B-Coop: A Novel Cooperation Enforcement Scheme for Wireless Networks

Ganesh Neelakanta Iyer (Amrita Vishwa Vidyapeetham, India); Peng-Yong Kong (Khalifa University, United Arab Emirates)

A Cell Zooming Strategy with Cooperative Transmission and Load Balancing in Hyper Cellular Network

Dan Zhang (Chongqing University of Posts and Telecommunications, P.R. China)



Performance Analysis of Relay-Assisted D2D Network Offloading in Ultra-Dense Networks

Kai Sun, Ge-fan Li and Wei Huang (Inner Mongolia University, P.R. China)

Optimal Packet Length for Cooperative Systems

Ghassan R. Alnwaimi (King Abdulaziz University; Faculty of Engineering, Saudi Arabia); Hatem Boujemaa (SupCom, Tunisia)

11:00-12:30

Special Session 1: VLC 01

Room

La Paix

Chair

Paul Anthony Haigh, Newcastle University, United Kingdom

SINR Performance Analysis of 3-D Underwater Optical Wireless Communication Networks

Mat Nguyen (Hanoi University of Science and Technology, Vietnam); Vuong Mai (KAIST, Korea); Chuyen T. Nguyen (Hanoi University of Science and Technology, Vietnam)

Visible Light Communications: Simplified Co-Equalisation of Fast OFDM in a Multiple-Input Multiple-Output Configuration

Paul Anthony Haigh (University College London, United Kingdom (Great Britain)); Andrew Burton (Northumbria University & Northumbria University, United Kingdom (Great Britain)); Zabih Ghassemlooy (Northumbria University, United Kingdom (Great Britain)); Izzat Darwazeh (University College London, United Kingdom (Great Britain))

Accelerating the Learning Speed of DNN Equalizer in Underwater VLC System by an Auxiliary Kernel Layer

Nan Chi and Yiheng Zhao (Fudan University, P.R. China)

Optoelectronic Modelling, Circuit Design and Modulation for Polymer-Light Emitting Diodes for Visible Light Communication Systems

Andrew Burton (Northumbria University & Northumbria University, United Kingdom (Great Britain)); Alessandro Minotto and Paul Anthony Haigh (University College London, United Kingdom (Great Britain)); Zabih Ghassemlooy and Hoa Le Minh (Northumbria University, United Kingdom (Great Britain)); Franco Cacialli (UCL, United Kingdom (Great Britain)); Izzat Darwazeh (University College London, United Kingdom (Great Britain))

14:00- 16:00

Session 03: Traffic Management

Room

Opal

Chair

Paul Anthony Haigh, Newcastle University, United Kingdom

Towards an Efficient Path Selection for Tactile Internet Traffic via Multi-Plane Routing

Deni Lumbantoruan, Mohammad Farhoudi, Andrej Mihailovic and Hamid Aghvami (King's College London, United Kingdom (Great Britain))

Enhanced OMP and Bilinear Interpolation in Missing Traffic Reconstruction based on Sparse SVD

I Dyah Irawati (Telkom University; Institut Teknologi Bandung, Indonesia); Andriyan B. Suksmono (Bandung Institute of Technology, Indonesia); Ian Matheus (Institut Teknologi Bandung, Indonesia)

Mobile Application Identification Over HTTPS Traffic Based on Multi-view Features

Mao Tian, Peng Chang, Yafei Sang, Yongzheng Zhang and Shuhao Li (Institute of Information Engineering, Chinese Academy of Sciences, P.R. China)



Evolutionary Game based Heterogeneous Wireless Network Selection with Multiple Traffics in 5G

Xiaoqian Wang, Bei Liu, Xin Su, Xibin Xu and Limin Xiao (Tsinghua University, P.R. China)

Towards Unknown Traffic Identification via Embeddings and Deep Autoencoders

Shuyuan Zhao, Yafei Sang and Yongzheng Zhang (Institute of Information Engineering, Chinese Academy of Sciences, P.R. China)

14:00- 16:00 **Session 04: Resource Allocation & Interference Management**
Room **Onyx**
Chair Stevan Mirko Berber (University of Auckland, New Zealand)

Extended Blind Interference Alignment for Superior DoF in Multiple User-Clusters Networks

Dan Wang (Institution of Information Engineering, University of Chinese Academy of Sciences, P.R. China); Wang Zhongfang (Institute of Information Engineering, Chinese Academy of Sciences, P.R. China); Qian Cheng (Institution of Information Engineering, University of Chinese Academy of Sciences, P.R. China); Jingwen Fu (Institute of Information Engineering, CAS, P.R. China); Yongming Wang (Institute of Information Engineering, Chinese Academy of Sciences, P.R. China)

Topological Interference Management: Trade-off Between DoF and SIR for Cellular Systems

Hassan Kallam (Université de Lyon; INRIA, INSA Lyon, CITI-INRIA, France); Leonardo S. Cardoso (Université de Lyon; INRIA, INSA-Lyon, CITI-INRIA, France); Jean-Marie Gorce (INSA-Lyon; CITI, Inria, France)

Power Allocation for Proactive Eavesdropping with Spoofing Relay in UAV Systems

Mingzhu Zhang, Yu Chen and Xiaofeng Tao (Beijing University of Posts and Telecommunications, P.R. China); Izzat Darwazeh (University College London, United Kingdom (Great Britain))

On the Resource Allocation for D2D Underlaying Uplink Cellular Network

Adeola Abraham Omorinoye, Quoc-Tuan Vien and Tuan Anh Le (Middlesex University, United Kingdom (Great Britain)); Purav Shah (Middlesex University; School of Science and Technology, United Kingdom (Great Britain))

Resource Allocation for Device-to-device Aided Cooperative NOMA with Imperfect CSI

Qian Cheng and Dan Wang (Institution of Information Engineering, University of Chinese Academy of Sciences, P.R. China); Xiaona Li, Wang Zhongfang and Yongming Wang (Institute of Information Engineering, Chinese Academy of Sciences, P.R. China)

14:00- 16:00 **Special Session 2: Beyond 5G 01**
Room **La Paix**
Chair Luca Rugini (University of Perugia, Italy)

Invited Talk: Current state-of-the-art for beyond 5G

Dr Ryan Grammenos, University College London, United Kingdom.

An Enhanced Relay Selection Scheme for NOMA-based Cooperative Opportunistic Multicast Scheme

Yufang Zhang and Xiaoxiang Wang (Beijing University of Posts and Telecommunications, P.R. China); Dongyu Wang (Beijing University of Posts



and Telecommunications & Key Laboratory of Universal Wireless Communications, Ministry of Education, P.R. China); Qiang Zhao (State Key Laboratory of Aerospace Dynamics, P.R. China); Yibo Zhang (Beijing University of Posts and Telecommunications, P.R. China)

Spectral Efficiency of Multicarrier Schemes for 5G

Paolo Banelli (University of Perugia, Italy); Giulio Colavolpe (University of Parma, Italy); Luca Rugini (University of Perugia, Italy); Alessandro Ugolini (University of Parma, Italy)

Outperforming Conventional OFDM and SEFDM Signals by Means of Using Optimal Spectral Pulses and the M-BCJR Algorithm

Aleksandr Gelgor and Van Phe Nguyen (Peter the Great St. Petersburg Polytechnic University, Russia)

Practical Decoding Scheme for Doubly Irregular Sparse Code Multiple Access

Iswahyudi Hidayat (Telkom University, Indonesia); Adit Kurniawan (ITB, Indonesia); Mohammad Sigit Arifianto (Institut Teknologi Bandung, Indonesia); Khoirul Anwar and Linda Meylani (Telkom University, Indonesia)

Design and Implementation of Signal Processing Unit for Two-way Relay Node in MIMO-SDM-PNC System

Nguyen Minh Thuong (Military Technology Information Institute, Vietnam); Vu-Duc Ngo (Hanoi University of Science and Technology, Vietnam); Xuan Nam Tran (Le Quy Don Technical University, Vietnam); Minh Tuan Le (Hanoi Department of Science and Technology, Vietnam)

16:30- 18:15 Tutorial 1: Recent Advances in HARQ Communications
 Pierre Duhamel and Leszek Szczecinski
Room Opal
Chair Pierre Degauque (University of Lille, France)

16:30- 18:15 Tutorial 2: Fundamental Limits and Coding for Additive Gaussian and Non-Gaussian/Non-Linear Channels
 Dr. Nghi Tran
Room Onyx
Chair Zabih Ghassemlooy (Northumbria University, United Kingdom)

16:30- 18:15 Tutorial 3: Artificial Intelligence based Future Mobile Networks
 Haijun Zhang, Yansha Deng and Arumugam Nallanathan
Room La Paix
Chair Khanh D. Pham (Air Force Research Laboratory, United States)

19:30 Social Event: Welcome Reception (at Daewoo Hotel, 18th Floor)

Day 2: Tuesday 9th April 2019

9:00- 10:00 Keynote Talk 2
Key technologies trends for 5G Network Transformation
 Mallik Tatipamula CTO, Ericsson Silicon Valley, USA
Room La Paix
Chair Izzat Darwazeh (University College London, United Kingdom)



10:30-12:30 **Session 05: QoS Provision and Management**

Room

Opal

Chair

Shi-Chung Chang (National Taiwan University, Taiwan)

The Joint Effect of Wireless LAN Reliable Groupcast and a Rate-Adaptation Mechanism on QoE of Audio and Video Transmission

Toshiro Nunome and Kenya Mizutani (Nagoya Institute of Technology, Japan)

Placement and Routing of VNFs for Horizontal Scaling

Racha Gouareb, Hamid Aghvami and Vasilis Friderikos (King's College London, United Kingdom (Great Britain))

Dynamic priority assignment for SLA compliance in service function chains

Frank Wetzels (Centre for Mathematics and Informatics, The Netherlands); Hans van den Berg (TNO, The Netherlands); Rob van der Mei (Centrum voor Wiskunde en Informatica, The Netherlands); Joost Bosman (TNO, The Netherlands)

A Novel Directional MAC in Restricted Access Window for IEEE 802.11ah Networks

Quynh Tu Ngo and Duc Ngoc Minh Dang (Ton Duc Thang University, Vietnam); Quan Le-Trung (University of Information Technology - VNUHCM, Vietnam); Duc Khai Lam (University of Information Technology, VNU-HCM, Vietnam)

VoIP traffic and resource management using Software-Defined Networking

Paulo R. Vieira, Jr (Federal Institute of Paraná - IFPR, Brazil); Adriano Fiorese (Santa Catarina State University, Brazil)

10:30-12:30 **Session 06: Signal Processing for Communications**

Room

Onyx

Chair

Maryline H elard (INSA Rennes, France)

Chaos-based systems operation with random delays characterised by truncated density functions

Stevan Mirko Berber (University of Auckland, New Zealand)

Sliding-Window Processing of Turbo Equalization for Partial Response Channels

Sirawit Khittiwitachayakul, Watid Phakphisut and Pornchai Supnithi (King Mongkut's Institute of Technology Ladkrabang, Thailand)

Extended Space Shift Keying Modulation With Different Receiver Strategies

Ali Mokh (INSA de Rennes, France); Maryline H elard (INSA Rennes; IETR Institute of Electronics and Telecommunications of Rennes, France); Matthieu Cruss ere (IETR - Electronics and Telecommunications Research Institute of Rennes (IETR) ; INSA - National Institute of Applied Sciences, France)

Doubling the Rate of Spectrally Efficient FDM Systems Using Hilbert Pulse Pairs

Xinyue Liu and Izzat Darwazeh (University College London, United Kingdom (Great Britain))

Quality Estimation of Noisy Speech Using Spectral Entropy Distance

Gabriel Mittag (Technische Universit at Berlin, Germany); Sebastian M oller (Quality and Usability Lab, TU Berlin & DFKI, Berlin, Germany)



10:30-12:30 **Special Session 1: VLC 02**

Room
Chair

La Paix

Paul Anthony Haigh (Newcastle University, United Kingdom)

Experimental Investigation of Neuron Based Motion Detection in Internet of Things using Optical Camera Communications

Shivani Rajendra Teli (Czech Technical University, Czech Republic); Stanislav Zvanovec (Czech Technical University in Prague, Czech Republic); Zabih Ghassemlooy (Northumbria University, United Kingdom (Great Britain))

Non-linear Compensation based on Polynomial Function Linked ANN in Multi-band CAP VLC System

Fangchen Hu, Yiheng Zhao, Peng Zou, Yuanfan Liu and Nan Chi (Fudan University, P.R. China)

Instantaneous and Average Throughput Maximization for Visible Light Communications

Ghassan R. Alnwaimi (King Abdulaziz University & Faculty of Engineering, Saudi Arabia); Hatem Boujemaa (SupCom, Tunisia)

Experimental study of PC-to-PC over a visible light channel using Li-Fi USB dongle

Son Tran (Korea - Vietnam Friendship Information Technology College, Vietnam); Andrew Burton (Northumbria University & Northumbria University, United Kingdom (Great Britain)); Hoa Le Minh (Northumbria University, United Kingdom (Great Britain)); Dang Hien (Korea - Vietnam Friendship Information Technology College, Vietnam)

14:00-16:00 **Session 07: Cryptography and Network Security**

Room
Chair

Opal

Ali Tekeoglu (SUNY Polytechnic Institute, United States)

Functions-based CFG Embedding for Malware Homology Analysis

Jieran Liu (School of Cyber Security, University of Chinese Academy of Sciences; Institute of Information Engineering, Chinese Academy of Sciences, P.R. China); Yuan Shen (School of Computer Science and Engineering, Beihang University, P.R. China); Hanbing Yan (National Computer Network Emergency Response Technical Team, P.R. China)

MDBA: Detecting Malware based on Bytes N-Gram with Association Mining

Bowei Li (University of Chinese Academy of Sciences, P.R. China); Yongzheng Zhang and Junliang Yao (Institute of Information Engineering, Chinese Academy of Sciences, P.R. China); Tao Yin (University of Chinese Academy of Sciences, P.R. China)

Artorias: IoT Security Testing Framework

Bryer Jeannotte (State University of New York Polytechnic Institute, USA); Ali Tekeoglu (SUNY Polytechnic Institute, USA)

SFDS: A Self-Feedback Detection System for DNS Hijacking Based on Multi-Protocol Cross Validation

Caiyun Huang and Peng Zhang (Institute of Information Engineering, Chinese Academy of Sciences, P.R. China); Yong Sun (Institute of Information Engineering, Chinese Academic of Science, P.R. China); Yujia Zhu and Yang Liu (Institute of Information Engineering, Chinese Academy of Sciences, P.R. China)



A Concurrent Optimization Consensus System Based on Blockchain

Weiqi Dai (HUST, P.R. China); Deshan Xiao, Hai Jin and Xia Xie (Huazhong University of Science and Technology, P.R. China)

An access control scheme with fine-grained time constrained attributes based on smart contract and trapdoor

Xuanmei Qin (Tsinghua University, P.R. China); Yongfeng Huang (Tsinghua University & Tsinghua National Laboratory for Information Science and Technology, P.R. China); Zhen Yang and Xing Li (Tsinghua University, P.R. China)

**14:00-
16:00
Room
Chair**

Session 08: Protocols and Applications for IoT 01

Onyx

Ryan C Grammenos (University College London (UCL), United Kingdom)

Analyzing Energy Efficiency for IoT Devices with DRX Capability and Poisson Arrivals

Bowen Cai and Yu Chen (Beijing University of Posts and Telecommunications, P.R. China); Izzat Darwazeh (University College London, United Kingdom (Great Britain))

Web of Things Semantic Functionality Distance

Maria Ines Robles (Aalto University, Finland); Bilhanan Silverajan (Tampere University, Finland); Nanjangud Narendra (Ericsson Research, India)

Teaching the Internet of Things: The first three years

Ryan C Grammenos (University College London (UCL), United Kingdom (Great Britain)); Clive R Poole (University College London, United Kingdom (Great Britain))

Offering smarter learning support through the use of biometrics

George Dafoulas, Jerome Samuels-Clarke, Cristiano Cardoso Maia, Almaas Ali and Ariadni Tsiakara (Middlesex University, United Kingdom (Great Britain))

Will the Phone Number Disappear?

Clive R Poole (University College London, United Kingdom (Great Britain)); Sacha Nacar (Cisco Systems, USA)

Data Monitoring System of Solar Module with Data Logger for Public Street Lighting Application

Edi Mulyana and Aan Setiawan (UIN Sunan Gunung Djati Bandung, Indonesia); Sony Sumaryo (Telkom University & Universitas Indonesia, Indonesia); Achmad Munir (Institut Teknologi Bandung, Indonesia)

**14:00-
16:00
Room
Chair**

Special Session 2: Beyond 5G 02

La Paix

Tongyang Xu (University College London, United Kingdom)

200-Gb/s optical SEFDM transmission using low-complexity log-MAP Viterbi decoding for short reach optical interconnects

Xiong Wu (The Hong Kong Polytechnic University, Hong Kong); Changjian Guo (South China Normal University, P.R. China); Baoxian Yu (Sun Yat-sen University, P.R. China); Yongsheng Xu (South China Normal University, P.R. China); Alan P.T. Lau and Chao Lu (The Hong Kong Polytechnic University, Hong Kong)



Improving Energy Efficiency of Finite Time FTN Pulses Detection by Choosing Optimal Envelope Shape

Ilya Lavrenyuk, Anna Ovsyannikova, Sergey V. Zavjalov and Sergey V. Volvenko (Peter the Great St. Petersburg Polytechnic University, Russia); Sergey B. Makarov (Peter the Great St. Petersburg Polytechnic University, Russia)

Digital Signal Processing for Faster-than-Nyquist Non-Orthogonal Systems: An Overview

Ji Zhou (Jinan University, P.R. China); Mengqi Guo and Yaojun Qiao (Beijing University of Posts and Telecommunications, P.R. China); Haide Wang, Long Liu and Wei Ping Liu (Jinan University, P.R. China); Changyuan Yu (The Hong Kong Polytechnic University, P.R. China); Li Jianping (Jinan University, P.R. China); Zhaohui Li (Sun Yat-sen University, P.R. China)

ZF equalizer and trellis demodulator receiver for SEFDM in fading channels

Andrey Rashich and Sergei Gorbunov (Peter the Great St. Petersburg Polytechnic University, Russia)

High Throughput and Low Complexity Implementation for Uplink Scheme of 5G Technology

Duc Khai Lam, Chi Bao Pham and Van Xuan Huong Dang (University of Information Technology, VNU-HCM, Vietnam); Duc Ngoc Minh Dang (Ton Duc Thang University, Vietnam); Quan Le-Trung (University of Information Technology - VNUHCM, Vietnam)

16:30-18:15	Tutorial 4: Game Theory and Mechanism Design with its applications in telecommunications and distributed systems Ganesh Neelakanta Iyer, Amrita Vishwa Vidyapeetham Coimbatore, India
Room Chair	Opal Zabih Ghassemlooy (Northumbria University, United Kingdom)

16:30-18:15	Session 09: Machine Learning
Room Chair	Onyx Pierre Duhamel (Lss Supelec, France)

A Novel Network Selection Approach in 5G Heterogeneous Networks Using Q-Learning

Xiaoqian Wang, Xin Su and Bei Liu (Tsinghua University, P.R. China)

Deep Learning for American Sign Language Fingerspelling Recognition System

Hung Ngoc Do and Huy Nguyen (International University, Vietnam)

Periodic Time Series Data Classification By Deep Neural Network

Haolong Zhang, Amit Nayak and Haoye Lu (University of Ottawa, Canada)

Detecting Covariate Shift with Black Box Predictors

Florence Alberge (University Paris-Sud, France); Clément Feutry (CentraleSupélec-CNRS-Université Paris-Sud, France); Pierre Duhamel (Lss Supelec & CNRS, France); Pablo Piantanida (CentraleSupélec-CNRS-Université Paris-Sud, France)

QoS-Aware Resource Allocation of Two-tier HetNet: A Q-learning Approach

Waleed AlSobhi and Hamid Aghvami (King's College London, United Kingdom (Great Britain))



16:30-18:15	Tutorial 5: Assured Satellite Communications: High-Level Theory and Control/Game-Theoretical System Concepts Khanh Pham, Air Force Research Laboratory, USA
Room Chair	La Paix Luca De Nardis (Sapienza University of Rome, Italy)
19:30	GALA DINNER and Best Paper Awards Ceremony (at Năng Sông Hồng by Red River) (coaches pick up at Daewoo Hotel lobby at 18:45pm sharp)

Day 3: Wednesday 10th April 2019

9:00-10:00	Keynote Talk 3 “Smart Transportation in Sustainable Smart City” Phan Thanh Sơn, CTO, FPT Information System
Room Chair	La Paix Long Bao Le (INRS, University of Quebec, Canada)
10:30-12:30	Session 10: Image Processing
Room Chair	Opal Anissa Mokraoui (Université Paris 13, Sorbone Paris Cité, France)

Performance Analysis of the Revisited Tone Mapped Quality Index for Tone Mapped HDR Images Evaluation

Anissa Mokraoui (Université Paris 13, Sorbone Paris Cité & Institut Galilée, L2TI, France); Ba Chien Thai (Université Paris 13 Sorbonne Paris Cité, Institut Galilée, L2TI, France)

Feature fusion by using LBP, HOG, GIST descriptors and Canonical Correlation Analysis for face recognition

Hung Ta Minh Nhat and Vinh Truong Hoang (Ho Chi Minh City Open University, Vietnam)

Kinship Verification based on Local Binary Pattern features coding in different color space

Tien Nguyen Van and Vinh Truong Hoang (Ho Chi Minh City Open University, Vietnam)

Deep Learning Models for Tuberculosis Detection from Chest X-ray Images

Quang H. Nguyen (Hanoi University of Science and Technology, Vietnam); Binh P. Nguyen (Victoria University of Wellington, Wellington, New Zealand); Son D. Dao (Hanoi University of Science and Technology, Hanoi, Vietnam); Balagopal Unnikrishnan, Rajan Dhingra, Savitha Rani Ravichandran, Sravani Satpathy, Palaparthi Nirmal Raja and Matthew C. H. Chua (National University of Singapore, Singapore)

Hierarchical product quantization for effective feature indexing

The-Anh Pham (Hong Duc University, Vietnam)



10:30-12:30
Room
Chair

Session 11: 5G Technologies
Onyx
Jean-François H elard (IETR, France)

On The Equivalence between Hybrid and Full Digital Beamforming in mmWave communications

Mohamed Shehata (INSA Rennes, France); Ali Mokh (INSA de Rennes, France); Matthieu Cruss iere (IETR - Electronics and Telecommunications Research Institute of Rennes (IETR) & INSA - National Institute of Applied Sciences, France); Maryline H elard (INSA Rennes & IETR Institute of Electronics and Telecommunications of Rennes, France); Patrice Pajusco (TELECOM Bretagne, France)

Beamforming and Parameter Adjustments for Geodesic Antenna Arrays for 5G NR

Wonjin Sung and Wonjae Ryoo (Sogang University, Korea)

Increase of DSTM Spectral Efficiency by the Extension of the Mathematical Weyl Group with Application to Differential MIMO Systems

Ibrahim Dawi (Institut National des Sciences Appliqu ees - Rennes, France); Gheorghe Zaharia (IETR-INSA de Rennes, France); Youssef Nasser (American University of Beirut, USA); Ayman Khalil (Institute of Electronics and Telecommunications of Rennes - IETR & INSA, France); Jean-Fran ois H elard (IETR, France)

On the Efficiency of MIMO Transmission with Channel State Information Feedback

Vei Hung Lee and Ivan Ku (Multimedia University, Malaysia); Ayman A. El-Saleh (A'Sharqiyah University (ASU), Oman); Tuan Anh Le (Middlesex University, United Kingdom (Great Britain))

Performance study of MPA, Log-MPA and MAX-Log-MPA for an uplink SCMA scenario

Wissal Ben Ameer (Orange Labs, France); Philippe Mary (Univ Rennes, INSA Rennes, CNRS, IETR, France); Marion Dumay (Orange Labs, France); Jean-Fran ois H elard (IETR, France); Jean Schwoerer (Orange Labs, France)

New Architecture for Multi-hop Cellular Networks

Salwa Othmen (University of sfax, Tunisia); Faouzi Zarai (Sfax University, Tunisia); Aymen Belghith (University of Sfax, Tunisia)

10:30-12:30
Room
Chair

Session 12: Testbed and Performance Analysis
La Paix
Minh Thuy Le (Hanoi University of Science and Technology (HUST), Vietnam)

Performance Analysis of Vertical and Higher Order Sectorization in Urban Environment at 28 GHz

Muhammad Usman Sheikh (Aalto University & Tampere University of Technology, Finland); Kalle Ruttik (Aalto University, Finland); Riku J antti (Aalto University School of Electrical Engineering, Finland)

Analysis of Indoor Solutions for Provision of Indoor Coverage at 3.5 GHz and 28 GHz for 5G System

Muhammad Usman Sheikh (Aalto University & Tampere University of Technology, Finland); Fayeze Ghavimi and Kalle Ruttik (Aalto University, Finland); Riku J antti (Aalto University School of Electrical Engineering, Finland)



Practical Evaluation of mm-Wave Communication for Automotive Applications in a Mixed Urban Area of London

Abimbola Crown and Huan X Nguyen (Middlesex University, United Kingdom (Great Britain))

Low Complexity Max-Min Uplink Power Control in Massive MIMO System with Experiment on Testbed

Hoang-Hiep Nguyen (5G software design, Viettel Network Technologies Center, Viet Nam)

An Independently Biased 3-stack GaN HEMT Configuration for 5G Mobile Networks

Luong Duy Manh (Le Quy Don Technical University, Vietnam)

Read Voltage Optimization in MLC NAND Flash Memory via the Density Evolution

Chatuporn Duangthong, Watid Phakphisut and Pornchai Supnithi (King Mongkut's Institute of Technology Ladkrabang, Thailand)

**14:00-16:00
Room
Chair**

Session 13: Antenna and RF Design and Development

Opal

Minh Thuy Le (Hanoi University of Science and Technology (HUST), Vietnam)

A New Measurement Technique to Determine the Maximum SAR of Multiple-Antenna Transmitters Using K-Order Models and Scalar E-Field Probes

Dinh Thanh Le (National Institute of Information and Communications Technology (NICT), Japan); Kun Li and Soichi Watanabe (National Institute of Information and Communications Technology, Japan); Yoshio Karasawa (University of Electro-Communications, Japan)

Experimental Study of Depolarization and Antenna Correlation in Tunnels in the 1.3 GHz band

Frédéric Challita (University of Lille & IEMN Lab, France); Pierre Laly, Martine Liénard, Davy P Gaillot and Pierre Degauque (University of Lille, France); Wout Joseph (Ghent University/IMEC, Belgium)

Highly-selective and Compact Bandpass Filters Using Microstrip - Coaxial Resonator

Trong Hieu Le (Electric Power University, Vietnam); Cuong Nguyen (EPU University, Vietnam); Tran Duong (School of Information Science and Engineering, P.R. China); Xiaowei Zhu (Southeast University, P.R. China)

A dual-polarized antennas based directional polarization modulation scheme

Qiaoyu Zhang (Institute of Information Engineering, Chinese Academy of Sciences & School of Cyber Security, Chinese Academy of Sciences, P.R. China); Zhaoyang Yang (Institute of Information Engineering, Chinese Academy of Sciences, P.R. China); Wen Wang, Junxing Ren, Weiqing Huang and Ning Zhang (Institute of Information Engineering, Chinese Academy of Sciences, P.R. China)

Novel Dual-Polarized 5G Base Station Antenna

Minh Thuy Le (Hanoi University of Science and Technology (HUST) & School of Electrical Engineering (SEE), Vietnam); Trong Thuy Pham, Truong



Phan Tran and Xuan Lap Pham (Viettel Group, Vietnam); Hoang-Anh Ngo (R&D Center, Viettel Network Technologies, Vietnam)

Surface Plasmonic Resonance Sensor for Wider Range of Low Refractive Index Detection

Emranul Haque (Independent University, Bangladesh (IUB), Bangladesh); Md. Anwar Hossain (Green University of Bangladesh, Bangladesh); Pham THai (Hanoi University of Science and Technology, Vietnam); Yoshinori Namihira (University of the Ryukyus, Japan); Nguyen Hoang Hai (Hanoi University of Science and Technology, Vietnam); Feroz Ahmed (Independent University, Bangladesh)

14:00-
16:00
Room
Chair

Session 14: Protocols and Applications for IoT 02

Onyx

Adnan Yazici (CS-SST, Nazarbayev University, Kazakhstan)

SoReC: A Social-Relation Based Centrality Measure in Mobile Social Networks

Bowen Li (Institute of Information Engineering, Chinese Academy of Sciences & School of Cyber Security, University of Chinese Academy of Sciences, P.R. China); Xu Shan (Chinese Academy of Sciences, Institute of Information Engineering, P.R. China); Weihua Zhou and Gao Zhenxiang (Institute of Information Engineering, Chinese Academy of Sciences, P.R. China)

Infrastructureless UWB based collision avoidance system for the safety of construction workers

Marianna Pittokopiti (University College London, United Kingdom (Great Britain)); Ryan C Grammenos (University College London (UCL), United Kingdom (Great Britain))

SANE: Smart Networks for Urban Citizen Participation

Heiko Bornholdt, David Jost and Philipp Kisters (Universität Hamburg, Germany); Michel Rottleuthner (Hamburg University of Applied Sciences, Germany); Dirk Bade and Winfried H. Lamersdorf (Universität Hamburg, Germany); Thomas C. Schmidt (Hamburg University of Applied Sciences, Germany); Mathias Fischer (Universität Hamburg, Germany)

Comparative Study on Energy Efficiency of WSNs and WMSNs for Surveillance Applications

Burak Kizilkaya and Enver Ever (Middle East Technical University Northern Cyprus Campus, Turkey); Adnan Yazici (CS-SST, Nazarbayev University, Kazakhstan)

Performance of Narrow-Band Internet of Things (NB-IoT) Based on Repetition of Downlink Physical Channel

Nur Idora Abdul Razak (Universiti Teknologi MARA & Faculty of Electrical Engineering, Malaysia); Nurul Aizati Ahmad (Universiti Teknologi MARA, Malaysia)

Two-tier Architecture for NB-IoT: Improving Coverage and Load Balancing

Pol Serra i Lidon (Polytechnic University of Catalonia, Spain); Giuseppe Caso (Simula Metropolitan Center for Digital Engineering, Norway); Luca De Nardis, Alireza Mohammadpour and Eljona Zanjaj (Sapienza University of Rome, Italy); Maria Gabriella Di Benedetto (Sapienza Università di Roma, Italy)

14:00-
16:00
Room

Session 15: Wireless Communications

La Paix



Chair Nemai Karmakar (MONASH University, Australia)

Millimeter-wave Phased MIMO Reader for spatial chipless RFID Systems

Dong Nguyen (Monash University, Australia); Nemai Karmakar (MONASH University, Australia); Zomorodi Mohammad (Australian Communications and Media authority)

Delay and Reliability Analysis of p-persistent Carrier Sense Multiple Access for Multievent Wireless Sensor Network

Nguyen Thi Thu-Hang (Posts and Telecommunications Institute of Technology, Vietnam); Nguyen Trinh (Posts and Telecommunications Institute of Technology & Telecom. Faculty, Vietnam); Nguyen Tien Ban (Posts and Telecommunications Institute of Technology, Vietnam)

Implementation of SCHC in NS-3 Simulator and Comparison with 6LoWPAN

Wael Ayoub (IETR lab & INSA RENNES, France); Fabienne Nouvel (INSA IETR RENNES, France); Sarah Hmede (LU in Hadth, Lebanon); Abed Ellatif Samhat and Mohamad Mroue (Lebanese University, Lebanon); Jean-Christophe Prévotet (INSA, France)

Low Complexity Fair User Scheduling Employing Spatial Orthogonality for MU-MIMO Systems

Ei Nandar Maung, Yukiko Shimbo, Hirofumi Suganuma and Fumiaki Maehara (Waseda University, Japan)

Gossip-based Appropriate Degree Search Strategy by Two-hop Index Replication for Rare Resources

Ming He and Zhijie Feng (Institute of Information Engineering, Chinese Academy of Sciences, P.R. China)

Hierarchical Game Theoretic Design of Frequency Assignment and Channel Selection for General Authorized Accesses

Cheng-Feng Yang, Shi-Chung Chang and Cheng-Yu Hsu (National Taiwan University, Taiwan)