

Workshop on 5G: Enabling Technologies and Applications













Agenda, 26th June 2018

Venue: Middlesex University, College Building, C211

8:30	Registration
8:45 - 9:00	Welcome and Introduction
9:00 – 9:35	5G/D2D for Disaster and Emergency Management Dr. Huan Nguyen, Middlesex University
9:35 – 10:10	Next Generation Communication Systems – Activities at University of Glasgow Dr. Francesco Fioranelli, Glasgow University
10:10 - 10:40	Coffee Break (College Building, Mezzanine, 2 nd Floor)
10:40 – 11:15	Low-complexity Approaches to mm-Wave Beamforming Prof. Jinho Choi, Gwangju Institute of Science and Technology, Korea
11:15 – 11:50	Networked Labs for Training in Sciences and Technologies for Information and Communication - NEWTON Prof. George Ghinea, Brunel University
11:50 – 12:30	360 Degrees Mulsemedia: Enabling Human Senses over 5G Environments Dr. Ioan-Sorin Comsa, Brunel University
12:30 - 13:30	Lunch (College Building, Mezzanine, 2 nd Floor) & Poster Presentation
13:30 - 14:05	Modelling Based for Massive MIMO Testing Dr. Duc To, VIAVI Solutions
14:05 - 14:40	A Scalable and License Free 5G Internet of Radio Light Architecture for Services in Homes and Businesses Prof. John Cosmas, Brunel University
14:40 - 15:15	5G positioning: a new opportunity to achieve sub-meter accuracy with mobile networks Dr. Giuseppe Destino, Kings College London
15:15 - 15:45	Coffee Break (College Building, Mezzanine, 2 nd Floor)
15:45 – 16:20	Issues and Possible Solutions for developing the Connected Vehicle Environment Dr. Glenford Mapp, Middlesex University
16:20 - 17:00	Award Ceremony/ Funding Opportunities / Closing & Remarks

Poster Presentations

12:30 – 13:30 during Lunch

Reinforcement Learning Enabled Unmanned Aerial Vehicles in Pop-Up Cellular Networks Paulo Valente Klaine, University of Glasgow,

The impact of channel correlation and CSI mismatch on low-resolution quantized massive MIMO systems Murat Temiz, The University of Manchester

Security based VLC MIMO System Othman Younus, University of Northumbria

Leveraging Retransmissions in Wireless Networked Control Systems with Packetized Predictive Control João Pedro Battistella Nadas, University of Glasgow

Pilot Power Control for Cell-free Massive MIMO Trang Cong Mai, Queen's University Belfast

Beyond 5G: Applications of Terahertz in Future Agri-tech Systems Adnaan Zahid, University of Glasgow

IEEE 802.11p Vehicular Network Deployment, Coverage, and Backhaul Issues Vishnu Paranthaman, Middlesex University

Drone small cell based public safety networks Kamran Ali, Middlesex University

Channel Modelling for mmWave Automotive Applications (V2X) in Hendon (London) Area

Abimbola Crown, Middlesex University,

Speakers' Biographies



Duc To (VIAVI Solutions) received a Ph.D. degree in advanced telecommunications from Swansea University, Swansea, U.K., in 2011. From March 2011 to February 2012, he was a Research Assistant at Swansea University and gained experiences in modelling for energy efficient transmissions. He is now a Senior Algorithm Engineer in the Algorithms Group, Aeroflex Limited trading as VIAVI Solutions – Wireless, Stevenage, U.K.. At there, he has been working on signal processing for communications taking into account practical aspects, algorithm design and

modelling. He grasps very good understandings of wireless communications standards including Wi-Fi, 4G LTE and the latest and underdevelopment 5G New Radio.



Francesco Fioranelli (Glasgow University) graduated in Telecommunication Engineering (summa cum laude) at the Università Politecnica delle Marche, Ancona, Italy for Bachelor (2007) and Master (2010) degrees. He received his PhD on through-wall radar imaging at Durham University (UK) in January 2014, and worked as a Research Associate on multistatic radar development and applications with Prof Hugh Griffiths at University College London between February 2014 and March

2016. He then joined the School of Engineering, University of Glasgow in April 2016 as an Assistant Professor (Lecturer) in the Glasgow College UESTC, between the University of Glasgow and the University of Electronic Science and Technology of China (UESTC) in Chengdu, for which he is the Exam and Assessment Coordinator, and course coordinator for teaching Circuits Analysis and Design. His research interests cover the multiple aspects of developing, testing and using bistatic and multistatic radar systems for various applications, with particular focus in approaches for automatic target classification in various contexts. Francesco is a member of the IEEE and IET, Chartered Engineer (CEng), associate member of the EPSRC Peer Review College since July 2017, and a reviewer for several academic journals including IET Radar, Sonar & Navigation, IEEE Transactions on Aerospace and Electronic Systems and IEEE Sensors. He published over 40 journal and conference papers in various applications and aspects of radar systems, as well as 2 book chapters. He is the co-recipient of the best paper published in IET Radar Sonar & Navigation in 2017, and the Principal Investigator of the EPSRC project EP/R041679/1 INSHEP, "Intelligent RF Sensing for Falls and Health Prediction".



Gheorghita Ghinea (Brunel University) is a Professor in the Computer Science Department at Brunel University, United Kingdom. He received the B.Sc. and B.Sc. (Hons) degrees in Computer Science and Mathematics, in 1993 and 1994, respectively, and the M.Sc. degree in Computer Science, in 1996, from the University of the Witwatersrand, Johannesburg, South Africa; he then received the Ph.D. degree in Computer Science from the University of Reading, United Kingdom, in 2000. His work focuses on building adaptable cross-layer end-to-end communication systems

incorporating user multisensorial and perceptual requirements. He is a member of the IEEE.



Giuseppe Destino (Kings College London) received his Dr. Sc. degree at the University of Oulu in 2012, M.Sc. (EE) degrees simultaneously from the Politecnico di Torino, Italy and University of Nice, France in 2005. Currently, he is working as Academy of Finland postdoctoral research fellow as well as project manager of national and international projects at the Centre for Wireless Communications of the University of Oulu, Finland. In 2017, He worked at the Nokia Bell Labs, Oulu, under the Nokia Bell Labs and University of Oulu Joint Centre for Future Connectivity. Since 2018, he is associated with King's College London, Centre for

Telecommunication Research (CTR), where he carries on activities on positioning and millimetre-wave technologies. His research interests include wireless communications, millimetre wave radio access

technologies, especially, on algorithms for channel estimation, hybrid beamforming and positioning. He served as a member of the technical program committee of IEEE conferences.



Glenford Mapp (Middlesex University) received his BSc (First Class Honours) from the University of the West Indies in 1982, a MEng (Distinction in Thesis) from Carleton University in Ottawa, Canada in 1985 and a PhD from the Computer Laboratory, University of Cambridge in 1992. He then worked at AT&T Cambridge Laboratories for ten years before joining Middlesex University in London in 2003, where he is currently an Associate Professor. He was also a Visiting Research

Fellow at the Computer Laboratory between 2003 and 2010 where he worked on several projects. His primary expertise is in the development of new technologies for mobile and distributed systems, vehicular networks and Smart City infrastructure. He has published over 100 papers in refereed journals and conferences.



Ioan-Sorin Comsa (Brunel University) is a Research Scientist in 5G radio resource scheduling at Brunel University, London, UK. He was awarded the B.Sc. and M.Sc. degrees in Telecommunications from the Technical University of Cluj-Napoca, Romania in 2008 and 2010, respectively. He received his Ph.D. degree from the Institute for Research in Applicable Computing, University of Bedfordshire, UK in June 2015. He was also a PhD Researcher with the Institute of Complex Systems, University of Applied Sciences of Western Switzerland, Switzerland. Since 2015, he worked as a Research Engineer at CEA-LETI in Grenoble, France. He is the main

author of a patent in machine learning domain with direct application in 5G radio resource scheduling. His research interests include intelligent radio resource and QoS management, reinforcement learning, distributed and parallel computing, adaptive multimedia/mulsemedia delivery.



Jinho Choi (Gwangju Institute of Science and Technology) was born in Seoul, Korea. He received B.E. (magna cum laude) degree in electronics engineering in 1989 from Sogang University, Seoul, and M.S.E. and Ph.D. degrees in electrical engineering from Korea Advanced Institute of Science and Technology (KAIST) in 1991 and 1994, respectively. He is with Gwangju Institute of Science and Technology (GIST) as a Professor. Prior to joining GIST in 2013, he was with the College of Engineering, Swansea University, United Kingdom, as a Professor/Chair in Wireless. His research

interests include wireless communications and array/statistical signal processing. He authored two books published by Cambridge University Press in 2006 and 2010. Prof. Choi received the 1999 Best Paper Award for Signal Processing from EURASIP, 2009 Best Paper Award from WPMC (Conference), and is Senior Member of IEEE. Currently, he is an Editor of IEEE Trans. Communications and IEEE Wireless Communications Letters and had served as an Associate Editor or Editor of other journals including IEEE Communications Letters, Journal of Communications and Networks (JCN), IEEE Transactions on Vehicular Technology, and ETRI journal.



John Cosmas (Brunel University) was born in Colombo, Sri Lanka, in 1956. He received the B.Eng. degree in electronic engineering from Liverpool University in 1978 and the Ph.D. degree from Imperial College, University of London in 1986. He is currently a Professor of Multimedia Systems with the College of Engineering, Design and Physical Sciences, Brunel University London. He co-leads the Wireless Networks and Communications Research Centre, is the course director of M.Sc. Advanced Multimedia Design and 3-D Technologies. He is an Associate Editor of the IEEE

Transactions on Broadcasting. His research interests are concerned with the development of multimedia systems applied to future of broadcasting, cellular communications, 2-D/3-D digital video/graphics media and the synergies between these technologies towards their application

towards the benefit of the environment, health and societies. He has participated in eleven EU-IST and two EPSRC funded research projects since 1986 and he has led three of these (CISMUNDUS, PLUTO, and 3-D MURALE). His latest research is concerned with management of heterogeneous cellular networks, convergence of cellular and ad-hoc networks, 3-D MIMO, and efficient software defined networks architectures.

Your Hosts at Middlesex University



Huan X. Nguyen (Middlesex University) received the B.Sc. degree from the Hanoi University of Science and Technology, Vietnam, in 2000, and the Ph.D. degree from the University of New South Wales, Australia, in 2007. He has been with several universities in the U.K. He was a Research Officer with Swansea University, U.K., from 2007 to 2008, and a Lecturer with Glasgow Caledonian University, U.K., from 2008 to 2010. He is currently an Associate Professor of communication

networks with the Faculty of Science and Technology, Middlesex University, London, U.K. He has published over 90 research papers, mainly in IEEE journals and conferences. His research interests include 5G enabling technologies, PHY security, energy harvesting, and communication systems for critical applications. He was a recipient of a grant from the Newton Fund/British Council Institutional Links Program for disaster communication and management systems using 5G networks, from 2016 to 2018. He was the Co-Chair of the 2017 International Workshop on 5G Networks for Public Safety and Disaster Management. He currently serves as an Editor for the KSII Transactions on Internet and Information Systems.



Mohsin Raza (Middlesex University) received the B.S. and M.S. degrees in electronic engineering from Mohammad Ali Jinnah University, Islamabad, Pakistan. He received his Ph.D. degree from the Department of Mathematics, Physics and Electrical Engineering, Northumbria University, Newcastle upon Tyne, U.K. He was also a Lecturer with the Department of Electronic Engineering, Mohammad Ali Jinnah University from 2010 to 2015 and Hardware Support Engineer with USS in 2009. He is currently a Postdoctoral Researcher with Middlesex University, Design Engineering and Mathematics.



Purav Shah (Middlesex University) is a Senior Lecturer in the Design Engineering and Mathematics Department at Middlesex University London. Prior to that, he was an Associate Research Fellow at the University of Exeter on EU-FP6 PROTEM project on scanning probe-based memories from 2008 to 2010. His work included read channel design; noise modelling and signal processing for probe storage. He received his PhD in Communication and Electronics Engineering from University

of Plymouth, UK, in 2008. He is also a UK HEA Fellow. He did his MSc in Personal and Mobile Radio Communications from Lancaster University, UK, in 2003 and his BEng degree in Electronics Engineering from Sardar Patel University, Gujarat, India, in 2002.



Quoc-Tuan Vien (Middlesex University) received his BSc (Hons) degree from Ho Chi Minh City University of Technology, Vietnam, in 2005; his MSc degree from Kyung Hee University, South Korea, in 2009; and his PhD degree from Glasgow Caledonian University, UK, in 2012, all in telecommunications. From 2005 to 2007, he was with Fujikura Fiber Optics Vietnam Company, Binh Duong, Vietnam, as a Production-System Engineer. From 2010 to 2012, he worked as a Research and

Teaching Assistant with the School of Engineering and Built Environment, Glasgow Caledonian

University. In Spring 2013, he worked as Postdoctoral Research Assistant with the School of Science and Technology, Nottingham Trent University, Nottingham, UK. In June 2013, he joined Middlesex University, London, UK, as a Lecturer in Computing and Communications Engineering, where he is currently a Senior Lecturer with the Faculty of Science and Technology.



Ramona Trestian (Middlesex University) is a Senior Lecturer with the Design Engineering and Mathematics Dept., Middlesex Univ., London, UK. She received her Ph.D. degree from Dublin City Univ., Ireland in 2012. She was with Dublin City University as an IBM/IRCSET Exascale Postdoctoral Researcher. She published in prestigious international conferences and journals and has three edited books. Her research interests include mobile and wireless communications, user perceived quality of experience, multimedia streaming, handover and network

selection strategies. She is a member of IEEE Young Professionals, IEEE Communications Society and IEEE Broadcast Technology Society.



Tuan Anh Le (Middlesex University) received his B.Eng. and M.Sc. degrees both in electronics and telecommunications from Hanoi University of Technology, Hanoi, Vietnam, in 2002 and 2004, respectively, and his Ph.D. degree in telecommunications research from King's College London, The University of London, UK, in 2012. He was the recipient of the prestigious Ph.D. scholarship jointly awarded by the Virtual Center of Excellence in Mobile & Personal Communications (Mobile VCE) and the UK Government's Engineering & Physical

Sciences Research Council (EPSRC).