

Seminar On

**Reconfigurable Antennas for Next Generation Communication Systems**

By

**Dr James Kelly**

**Assistant Professor**

**School of Electronic Engineering and Computer Science**

**Queen Mary University of London (QMUL), UK**

**Date : 24 May 2019 (Friday)**

**Time : 11:00 am – 12:00 noon**

**Venue : Room 15-202, 15/F, State Key Laboratory of Terahertz and Millimeter Waves,  
Lau Ming Wai Academic Building, City University of Hong Kong**

**Abstract**

Reconfigurable antenna technology can be used to enable a communication system to adapt for changes in: user demand, network traffic, interference, etc.. Intelligent high performance communication systems of the future are expected to make increasing use of reconfigurable antenna technology as they find themselves operating in ever more complex, contested and congested environments.

Research into the next generation of mobile network technology (5G) is currently on-going around the world. For this application there is interest in using high gain beam steerable antennas to support high data rate communications. The antennas need to be capable of continuous beam steering. They should have a wide scan angle range along with low overall power loss. The presentation will show some approaches that we have been developing in QMUL to help address these challenges.

There have been decades of research into the topic of reconfigurable antennas. However conventional technology, based on switching and tuning elements, suffers from a number of important disadvantages, including: 1) significant overall power consumption, 2) poor harmonic performance, 3) limited tuning range. Recently new electronic materials have emerged which have the potential to address many of these limitations. For the past 2.5 years we have been looking at liquid metals based on Gallium alloys. The presentation will show a selection of work on this topic.

**Biography**

**Dr James Kelly** is a Lecturer (Assistant Professor) in Microwave Antennas within the School of Electronic Engineering and Computer Science at Queen Mary University of London (QMUL) and a member of the WMC lab. He joined QMUL in September 2018. From 2013 to until 2018 he was a Lecture at the University of Surrey and a member of the 5G Innovation Centre. Before this he was a Lecturer at Anglia Ruskin University in Cambridge, England. From 2007 to 2012 he worked as a research fellow/associate at Loughborough University, as well as the Universities of Birmingham, Durham, and Sheffield.

Dr Kelly has published over 100 academic papers in peer reviewed international journals and conference proceedings (h-index: 17, >1000 citations). He has also 3 filed patents for antenna technology. His primary research focus is reconfigurable antennas. He also has experience of working on small antennas for portable device applications, UWB antennas, planar microwave filters, metamaterials, and material characterisation.

\*\*\* ALL ARE WELCOME \*\*\*

**Enquiries:**

Dr Hang Wong, Department of Electronic Engineering

Tel.: (852) 3442 5935 Fax: (852) 3442 0562 Email: [hang.wong@cityu.edu.hk](mailto:hang.wong@cityu.edu.hk)