

City University of Hong Kong  
Department of Electrical Engineering &  
IEEE Photonics Society (Hong Kong Chapter)  
Present a Distinguished Lecture on

## Photonics-based Measurement for Broadband Cognitive Radio

by

### Prof. Shilong Pan

Nanjing University of Aeronautics and Astronautics  
Key Laboratory of Radar Imaging and Microwave Photonics, the Ministry of Education  
2019 IEEE Photonics Society Distinguished Lecturer

Date : **9 January 2020 (Thursday)**  
Time : **11:00 am – 12:00 am**  
Venue : **G6302, 6/F, Yeung Kin Man Academic Building (AC1),  
City University of Hong Kong**

#### Abstract

Microwave photonic components and subsystems can replace or complement their electronic counterparts with a net gain in functionality, bandwidth, size, mass, complexity, and cost, facilitating innovative implementation of cognitive radio. In this talk, photonics-based measurement techniques including broadband spectrum sensing and ultrahigh-resolution radar imaging are reviewed, which can be employed to establish broadband cognitive radio together with adaptive microwave photonic waveform generation. As an example of broadband cognitive radio enabled by the photonics-based measurement, a conceptual cognitive radar system is experimentally demonstrated and analyzed. Emerging technologies in this area and possible future research directions are discussed.

#### Biography



Prof. Shilong Pan received the B.S. and Ph.D. degrees in electronic engineering from Tsinghua University, Beijing, China, in 2004 and 2008, respectively. From 2008 to 2010, he was a “Vision 2010” Postdoctoral Research Fellow in the Microwave Photonics Research Laboratory, University of Ottawa, Canada. He joined the College of Electronic and Information Engineering, Nanjing University of Aeronautics and Astronautics, China, in 2010, where he is currently a Full Professor and an Executive Director of the Key Laboratory of Radar Imaging and Microwave Photonics, the Ministry of Education.

His research has focused on microwave photonics, which includes optical generation and processing of microwave signals, analog photonic links, photonic microwave measurement, and integrated microwave photonics. Prof. Pan has authored or co-authored over 420 research papers, including more than 230 papers in peer-reviewed journals and 190 papers in conference proceedings.

Prof. Pan is currently an associate editor of *Electronics Letters*, a Topical Editor of *Chinese Optics Letters*, and is a Technical Committee member of IEEE MTT-3 Microwave Photonics. He is a Steering Committee Member of IEEE International Topical Meeting on Microwave Photonics, and International Conference on Optical Communications and Networks. Prof. Pan has also served as a Chair of a number of international conferences, symposia, and workshops, including the TPC Chair of the International Conference on Optical Communications and Networks in 2015, and TPC Co-chair of IEEE International Topical Meeting on Microwave Photonics in 2017.

~~~~~ All are welcome ~~~~~