

Development of Microstructures for Terahertz Waves

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University of Adelaide

Thursday, 12 December 2013 @ 12:00PM

**Venue: Billings Room 3.04, 3rd floor. Electrical & Electronic Engineering Building
University of Western Australia, Crawley**

This seminar is open to the public and admission is free to all IEEE members and non members.

Abstract:

In Engineered artificial materials – Terahertz radiation has become an important research area in the field of electromagnetics. Known as the ‘terahertz gap’, the radiation in this 0.1 to 10 THz frequency range was initially difficult to access with conventional electronic or photonic techniques. Advents of unconventional techniques have made possible terahertz emitters and detectors with a size of a pinhead. Achieving practical applications requires novel components to manipulate terahertz waves. For this purpose, microstructures become necessary to construct terahertz components whose properties are not available from natural materials. This talk discusses some activities on terahertz microstructure research at the University of Adelaide. It covers flexible metamaterials, metamaterials in sensing, reflect arrays, plasmonic metamaterials, and coupling effects. The talk also briefly discusses the capability and activities of the Australian National Terahertz Facility in Adelaide.

Biography:

Withawat Withayachumnankul received the B. Eng. and M. Eng. degrees in electronic engineering from King Mongkut’s Institute of Technology Ladkrabang (KMITL), Bangkok, Thailand, in 2001 and 2003, respectively, and the Ph.D. degree in electrical engineering (with special commendation) from the University of Adelaide in 2010. From 2003 to 2012, he served as a Lecturer with King Mongkut’s Institute of Technology Ladkrabang (KMITL), Bangkok, Thailand, with the Faculty of Engineering. Since 2010, he has held an ARC Australian Postdoctoral Fellowship with the University of Adelaide. He is also an Associate with RMIT University, Melbourne. His research interests include terahertz technology, metamaterials, plasmonics, and optical antennas. He has authored and co-authored approximately 30 journal publications. He has delivered invited talks at ETH Zürich, University of Marburg, EPFL, IPHT (Germany), and Ibaraki University. He serves

as a grant assessor for Swiss National Science Foundation (SNSF) and Australian Research Council (ARC). Dr. Withayachumnankul was a recipient of the IEEE/LEOS Graduate Student Fellowship (2008), the SPIE Scholarship in Optical Science and Engineering (2008), the Australian Endeavour International Postgraduate Research Scholarship (EIPRS; 2006–2008), and SPIE poster award (2007).

