PAP Seminar Announcement

Development of microstructures for terahertz waves

By
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Date: 27 Feb 2014, Thursday
Time: 10:30 am to 11:30 am
Venue: Hilbert Space
Host: Asst Prof Ranjan Singh

Abstract

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, reflectarrays, plasmonic metamaterials, and coupling effects. The talk also briefly discusses the capability and activities of the Australian National Terahertz Facility in Adelaide.

Short 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 commendation) from the University of Adelaide, Adelaide, Australia, in 2010. From 2003-2012, he served as a Lecturer at KMITL 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 of RMIT University, Melbourne, Australia. His research interests include terahertz technology, metamaterials, plasmonics, and optical antennas.

Dr. Withayachumnankul has authored and co-authored over 30 journal publications as an early career researcher. 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). He is a recipient of the IEEE/LEOS Graduate Student Fellowship (2008), the SPIE Scholarship in Optical Science and Engineering (2008), and the Australian Endeavour International Postgraduate Research Scholarship (EIPRS; 2006-2008).