

Seminar on

Transformation Optics in Antenna Engineering

By

Prof Yang Hao

Queen Mary University, London

Date : 22 December 2016 (Thursday)
Time : 11:00 am – 12:00 noon
Venue : Room 15-202, meeting room of State Key Laboratory of Millimeter Waves,
15/F, Lau Ming Wai Academic Building, City University of Hong Kong

Abstract

The concept of transformation optics (TO) offers us the exciting prospect of designing novel antennas, which go far beyond what can be accomplished with traditional materials in the form of lenses and reflectors, requiring both conventional materials and also those with properties that do not exist in nature (i.e., metamaterials). Working with our partners and the UK industry, we have developed new TO antennas, which could be embedded into the skin of an aircraft without compromising aerodynamic performance, representing a major leap forward from current airborne antennas.

In this talk, I will give an overview of several designs based on TO as well as some design techniques involving transformation of electromagnetic fields. I will demonstrate several devices through both numerical simulations and experiments, which are aimed to push the conceptual boundaries whilst at the same time exploring the practical problems of design and manufacturability.

Biography

Yang Hao is a Professor of Antennas and Electromagnetics at Queen Mary University of London. He also serves in the management team of Cambridge Graphene Centre from 2013. He is active in a number of areas, including computational electromagnetics, microwave metamaterials and transformation optics, antennas and radio propagation for body centric wireless networks, active antennas for millimeter/sub-millimeter applications and photonic integrated antennas. He published two books on Antennas and Radio Propagation for Body-Centric Wireless Communications, and FDTD modelling of Metamaterials: Theory and Applications, respectively. He has co-authored more than 200 journal papers and is a frequent keynote speaker for many international conferences. Prof. Hao is an Editor-in-Chief for the IEEE ANTENNAS AND WIRELESS PROPAGATION LETTERS. He received IET AF Harvey Research Prize, BAE Chairman's Silver Award and is a holder of the Royal Society Wolfson Research Merit Award. Prof. Hao was elected as a Fellow of the ERA Foundation in 2007, a Fellow of the IET in 2010 and a Fellow of the IEEE in 2013.

*** ALL ARE WELCOME ***

Enquiries:

Professor Kwai Man Luk, Department of Electronic Engineering
Tel.: (852) 3442 7352 Fax: (852) 3442 0353 Email: ekmluk@cityu.edu.hk