CEIES Short Course

Center of Excellence in Intelligent Engineering Systems

Speaker: Prof. Raj Mittra
University of Central Florida, Florida, USA

Distinguished HiCi Adjunct Professor
King Abdulaziz University

Raj Mittra is a Professor in the Department of Electrical & Computer Science of the University of Central Florida in Orlando, FL., where he is the Director of the Electromagnetic Communication Laboratory. Prior to joining the University of Central Florida, he worked at Penn State as a Professor in the Electrical and Computer Engineering from 1996 through June, 2015. He also worked as a Professor in the Electrical and Computer Engineering at the University of Illinois in Urbana Champaign from 1957 through 1996, when he moved to the Penn State University. Currently, he also holds the position of Hi-Ci Professor at King Abdulaziz University in Saudi Arabia. He is a Life Fellow of the IEEE, a Past-President of AP-S, and he has served as the Editor of the Transactions of the Antennas and Propagation Society. He won the Guggenheim Fellowship Award in 1965, the IEEE Centennial Medal in 1984, and the IEEE Millennium medal in 2000. Other honors include the IEEE/AP-S Distinguished Achievement Award in 2002, the Chen-To Tai Education Award in 2004 and the IEEE Electromagnetics Award in 2006, and the IEEE James H. Mulligan Award in 2011. Dr. Mittra is a Principal Scientist and President of RM Associates, a consulting company founded in 1980, which provides services to industrial and governmental organizations, both in the U.S. and abroad.

Session	Day	Date	Time
First	Tuesday	27/10/2015	13:00 – 14: 00
Second	Tuesday	27/10/2015	14:10 – 15:45

Venue: Engineering Building, Third floor,
Dean of Engineering Meeting Room

Title

A New Look at Transformation Optics (TO) Approach for Designing Electromagnetic Devices such as Flat Lenses, Reflectarrays and Cloaks

Abstract

In this tutorial presentation we will discuss the basics of the Transformation Optics (TO) method, aka the Transformation Electromagnetics approach, to designing a number of "microwave" devices such as: cloaks; flat lenses; and reflectarrays. Recently, there has been considerable interest in using the transformation optics (TO) algorithm, which is based upon transforming the geometry of an object from real space to virtual space while keeping the Maxwell's field solutions from real space to virtual space intact, because it provides an alternative (to traditional) and innovative way to design a class of EM devices.

A number of practical examples will be included in the presentation, not only to point out the shortcomings of the TO, but to also show how we can get around its difficulties in a systematic way when dealing with some real-world problems.
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ALL ARE CORDIALLY INVITED