

## Small Antenna Design for UWB, Sensors, RFID tags and other Applications

Zhi Ning Chen<sup>1</sup> and Raj Mittra<sup>2</sup>  
<sup>1</sup>Infocomm, Singapore  
<sup>2</sup>EMC Lab, Penn State, University, USA

Advent of new wireless devices and sensors have fueled a continuing trend toward the miniaturization of antenna size, and the challenges faced in designing of these devices need to be met by innovations in antenna technology. As an example, antennas for UWB are facing numerous challenges, such as realization of small size, without comprising its gain, wide bandwidth and linear phase response. Recently, systems such as WiMAX, UWB, MIMO, RFID have instigated the development of new techniques for designing small antennas with enhanced performance. This workshop will focus on the design of small antennas for a wide variety of applications, including sensors, RFID and UWB. State-of-the-art design solutions for practical applications will be presented, and practical issues such as integration of small antennas into laptops will be discussed.

Topics will include: Techniques for size reduction; bandwidth enhancement; realization of high directivity using EBGs; and others.