



## Short Course

**Day 1: Tuesday, 23 Nov. 2010**

**Venue: Capri Hall**



Short Course 4

### **MIMO and Diversity Antenna Systems for Mobile Terminals and Small Base Stations**

Prof. Hiroyuki Arai

Yokohama National University, Japan

14:30 – 17:00

## Abstract

This workshop presents the design of antenna systems for the applications of mobile terminals and small base stations in the wireless communication systems. The LTE and WiFi require multi-antenna for the MIMO or diversity systems to enhance the channel capacity. For the design of mobile terminal antennas, the correlation coefficient and MEG (Mean Effective antenna Gain) are key design parameters. This workshop presents how to optimize these antenna parameters under the multi-path propagation environments. Typical design processes are also presented for the handset antennas and small indoor base stations. In addition to the design process, antenna used in current systems is discussed in detail.

## About the speaker

**Hiroyuki Arai** received the B.E. degree in Electrical and Electronic Engineering, M.E. and D.E. in Physical Electronics from Tokyo Institute of Technology, respectively. After a research associate in Tokyo Institute of technology, he joined to Yokohama National University as a lecturer. Now he is a professor in Division of Electrical and Computer Engineering, Yokohama National University.

He was a visiting scholar at University of California, Los Angeles and was visiting professor at Yonsei University, Seoul. He is currently Chair of IEEE AP-S Japan Chapter and a Fellow of the IEICE.

He developed flat diversity antennas for mobile telephone terminal, a polarization diversity base station antenna for Japanese PDC systems, and small base station antennas of In-building micro cellular system.