

### Seminar on

Radiation efficiency enhancement of Low profile and electrically small antennas  
- Related design and measurement techniques -

by

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#### Abstract

Many researchers have been devoted to design electrically small antennas for many applications such as small handsets and wireless tags. Small size antennas have advantages; however, the radiation efficiency is normally small because the impedance of such antennas has small radiation resistance. On the other hand, those antennas sometime are installed on metallic or lossy parts resulting in less radiation in those applications. For avoiding this, installing a metallic background behind the antenna element is a good way in design; however, the radiation efficiency is reduced when the antenna element is close to the metallic part.

In this talk, design examples of electrically small antenna using a capacitive feeding structure are introduced for keeping sufficient impedance. In addition to this, some techniques for enhancing the radiation efficiency and antenna gain are presented. In the last part of the presentation, some practical measurement examples are introduced on radiation efficiency and antenna gain.

#### Biography

**Takeshi Fukusako** was born in Miyazaki, Japan. He has received the B. Eng., M. Eng., and Dr. Eng. degrees from Kyoto Institute of Technology, Kyoto, Japan in 1992, 1994 and 1997, respectively. In 1997, he joined to the Kumamoto University, Kumamoto, Japan as a Research Associate. He is currently an Associate Professor and directing the Microwave & Antenna Laboratory since 2003. From 2005 to 2006, he was a visiting researcher of the University of Manitoba, Winnipeg, MN, Canada. His current research field is mainly antenna design, especially broadband antennas, circularly polarized antennas, electrically small antennas and their applications. He also works an Associate Editor of IEICE Trans. Comm. since 2012 and IEEE Trans. Antennas & Propagation since Feb. 2015.

Furthermore, he worked as one of TPC co-chairs in iWEM2014 and a TPC member in several conferences. He is a senior member of IEEE and IEICE.

**Date** : 21 April 2015 (Tuesday)

**Time** : 11:00 am – 12:00 noon

**Venue** : Room 15-202, 15/F, meeting room of State Key Laboratory of Millimeter Waves, 15/F, Academic 3, City University of Hong Kong

\*\*\* ALL ARE WELCOME \*\*\*

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