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Prof. Akimasa Hirata

Director & Professor at Nagoya Institute of Technology, Japan

“Introduction to Bioelectromagnetics - Fundamentals and EMC applications”

Datum: 14th Jun. 2022
Zeit: 12:00 -13:00 PM (UTC+2, GE),
19:00 – 20:00 PM (UTC+9, JP)
Online: Zoom Meeting

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Hints: an email reminder will be sent out in case of any changes. Please
sign up in advance (E-mail: cheng.yang@tuhh.de)



EMC Distinguished Lecture by Prof. Akimasa Hirata

Introduction to Bioelectromagnetics – Fundamentals and EMC applications

Abstract: The human body whose electrical behavior depend on the frequency should be considered in the modern design of wireless devices which are used in proximity of the human body. However, the complexity of the modeling may depend not only on the frequency but also the individual variabilities, environmental factors, size of the devices and use scenarios. In this lecture, first, a discussion on modeling of the human in the electromagnetics for different cases is provided. Then, the effect of the human presence on the wireless devices including wireless communication terminals and wireless power transfer systems is explained considering typical exposures scenarios. The electromagnetic fields emitted from the electrostatic discharge is also discussed.



EMC Distinguished Lecture by Prof. Akimasa Hirata

Introduction to Bioelectromagnetics – Fundamentals and EMC applications

Biography: Prof. Hirata (S'98–M'01–SM'10–F'17) received the B.E., M.E., and Ph.D. degree in communications engineering from Osaka University, Suita, Japan, in 1996, 1998, and 2000, respectively. From 1999 to 2001, he was a Research Fellow of the Japan Society for the Promotion of Science, and also a Visiting Research Scientist at the University of Victoria, BC, Canada, in 2000. In 2001, he joined the Department of Communications Engineering, Osaka University, as an Assistant Professor. In 2004, he moved to Nagoya Institute of Technology where he is currently a Full Professor and Director of Research Center. His research interests include electromagnetic safety, EMC, antennas, filters, risk management system for heat-related illness, methods in neuroscience, and related computational techniques. Prof. Hirata is an Associate Editor of the IEEE Trans. On EMC, an editorial board member of Physics in Medicine and Biology.

He is a member of the main commission and a Chair of project group of International Commission on Non-Ionizing Radiation Protection (ICNIRP, from 2015), and a member of administrative committee and a Subcommittee (EMF Dosimetry Modeling) Chair of IEEE International Committee on Electromagnetic Safety (ICES, from 2014), and an expert of World Health Organization. From 2006 to 2012, he was also an Associate Editor of the IEEE TRANSACTIONS ON BIOMEDICAL ENGINEERING. He received several awards including Young scientists' Prize (2006) and Prizes for Science and Technology (Research Category 2011, Public Understanding Promotion Category 2014, 2020) by the Commendation for Science and Technology by the Minister of Education, Culture, Sports, Science, and Technology, Japan, and IEEE EMC-S Technical Achievement Award (2015), and the Japan Academy Medal and JSPS Prize (2018). He is a Fellow of Institute of Physics and IEICE.