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THE CHINESE UNIVERSITY OF HONG KONG

Department of Information Engineering

Seminar

Enabling Technologies Toward Deployable Indoor Visible Light Communication Systems

By

Professor Jian CHEN

Nanjing University of Posts and Telecommunications, China

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Venue : Room 1009, William M.W. Mong Engineering Building
The Chinese University of Hong Kong

Abstract

In the efforts to promote visible light communication (VLC) as a short-reach wireless connection choice up to Gbits per second, readiness of the provision on the most appropriate technologies and channel modeling must be crucial. To demonstrate VLC capability for high speed transmission, a system setup with only line-of-sight (LOS) channel, motionless receiver terminal and even a visible light emitting laser is usually customized. However, the original idea for future VLC vision is based on the consideration of a possible value-added service from the fundamental solid state device lighting with cheap white light LED bulbs. Upon this scenario which is more practical for future VLC system overlay with indoor lighting, a movable receiver should be designed to overcome the problems from very narrow bandwidth of LED bulbs, varying channel transfer function incorporating of LOS and rich multi-path none line-of-sight (NLOS) reflections, and the terminal position change, etc. This talk presents a brief review on our recent efforts toward conceptual design on deployable indoor VLC systems, which include location based equalization, fast equalizer initialization, time-domain reshuffling OFDM, and so on.

Biography

JIAN CHEN received the B.S., M.S., and Ph. D. degrees in electronic engineering from Southeast University in 1988, 1990, and 1994, respectively. From 1999 to 2001, he was with the Department of Electrical Engineering of the Korea Advanced Institute of Science and Technology (KAIST), Daejeon, Korea. In 2002, he was with the Institute for Communication Research of National University of Singapore (NUS) as member of technical staff. From 2003, he joined the Communications & Devices Division of the Institute of Infocomm Research (I2R) as a research scientist, Singapore. From 2010 up to now, He is appointed as a full professor in NUPT. He has been engaged in research on optical fiber communication systems and optical access networks for almost 30 years, and in pioneering works in VLC research and development since 2005. His current interests are focusing on visible light communication (VLC) and digital signal processing in coherent optical communications.

**** ALL ARE WELCOME ****

Host: Professor CHEN Lian Kuan (Tel: 3943-8389, Email: lian@ie.cuhk.edu.hk)
Enquiries: Information Engineering Dept., CUHK (Tel.: 3943-8385)