



THE CHINESE UNIVERSITY OF HONG KONG
Department of Information Engineering
Seminar

**Emerging Optical and Photonic Technologies
for Communications and Beyond**
by
Dr. LIU Xiang
Huawei Hong Kong Research Center, China

Date : 10 November 2021 (Wednesday)
Time : 2:30pm
Venue : Room 801, Ho Sin Hang Engineering Building
The Chinese University of Hong Kong

Abstract

The journey leading to the era of the 5th generation mobile and fixed networks, 5G and F5G, has witnessed ground-breaking innovations in optical communications and photonics. For the journey ahead, we are facing two grand technical challenges, the communication capacity limit imposed by the Shannon theorem and the slowing down of the Moore's law. To address the impact of the Shannon capacity limit, the optical communications community is exploring innovative network architectures, system designs, photonic integrated circuits, and better integration of photonic and electrical circuits to continue reducing the cost and energy consumption per bit. To address the impact of the noticeable slowing down of the Moore's law, the photonics community is exploring innovative algorithms, software, application-specific designs, advanced fabrication processes, and new material platforms via a holistic approach. In parallel, the communications and photonics communities are also broadening the application space of the optical and photonic technologies to new fields such as 3D sensing for consumer devices, head-up display, light detection and ranging for autonomous driving, distributed fiber-optic sensing, and optical computing. In this talk, we review emerging optical and photonic technologies for meeting the ever-increasing demands of communications, as well as addressing new applications beyond communications.

Biography

Xiang Liu is chief optical standards expert at Huawei Technologies. He has more than 20 years of working experience in the optical communication industry. He had served as Vice President for Optical Transport and Access at Futurewei Technologies, focusing on optical technologies, standards, and industry development for optical transport and access networks. Before joining Futurewei, he had been with Bell Labs working on high-speed optical transmission technologies for 14 years. He has authored over 350 publications and holds over 100 US patents.

Xiang received the Ph.D. degree in applied physics from Cornell University in 2000. He is a Fellow of the IEEE, a Fellow of the OSA, a Deputy Editor of Optics Express, an Advisory Board member of NGOF, and a steering committee member of ACP. Xiang has served as a Technical Program Co-Chair of OFC 2016, and a General Co-Chair of OFC 2018.

**** ALL ARE WELCOME ****