



THE HONG KONG UNIVERSITY OF SCIENCE AND TECHNOLOGY

DEPARTMENT OF ELECTRONIC AND COMPUTER ENGINEERING

AND

IEEE LEOS (HONG KONG CHAPTER)

JOINT SEMINAR

## Recent Progress in Liquid Crystal Laser and THz Optics

by

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### Abstract

In the past decade, we have investigated liquid crystal spatial light modulators (LC-SLM) of various designs and their applications such as tunable lasers and related devices with liquid-crystal enabled functionalities for DWDM Optical Communication. Recently, to generate sub-fs single-cycle pulses, we have constructed a custom-made LC-SLM that allows controlling the slip of the carrier envelope phase (CEP) of 7 sidebands (1203 nm, 802 nm, 602 nm, 481 nm, 401nm, 344nm, and 301nm) spanning two octaves by molecular modulation in H<sub>2</sub>. Finally, moving from broadband, ultrafast to the ultra-long-wavelength, I will present recent progress in liquid crystal THz or sub-millimeter wave photonics from our group, notably Lyot and Solc filters, polarizers and phase gratings.

### Biography

Ci-Ling Pan was a graduate of Tunghai University (B.S., 1971) and Colorado State University (CSU), Ft. Collins, Colorado, USA (M.S., 1975 and Ph.D., 1979). All of his degrees are in Physics. Since 1987, he has been a full Professor at the Institute of Electro-Optical Engineering (IEO) of NCTU, served as its director from 1992 to 1995 and Chair of the Department of Photonics (2004-2006). Prof. Pan was the 2003 Communication and Photonics Chair Professor of the Far Eastern Y. Z. Hsu Science & Technology Memorial Foundation and currently holds a concurrent appointment as a University Chair Professor of NCTU. He was also a Guest Professor at Osaka University, Osaka, Japan in spring, 2004. His research interests are lasers and their applications in broadband optical communication, precision metrology, ultrafast and THz Photonics. Prof. Pan is a member of the Phi Tau Phi Honor Society (1991), a Fellow of the Photonic Society of Chinese Americans (1998), the Optical Society of America (2004), Society of Photographic and Instrumentation Engineers (2004), and the Physical Society of Republic of China (2005). He was also the recipient of numerous awards in Taiwan, including the National Science Council (NSC) Outstanding Research Award and the Academic Award of the Ministry of Education.

**Date:** 11 April 2008 (Friday)  
**Time:** 4:00 – 5:00 pm  
**Venue:** Room 2304, 2/F (lift 17 ,18)  
Academic Complex, HKUST

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