



THE CHINESE UNIVERSITY OF HONG KONG
Department of Electronic Engineering



**IEEE HK Section
LEOS**

Jointly Present a Seminar on

**Multi-Wavelength Injection-Locked Laser Diode:
A Key Device for Future All-Optical Networks?**

by

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The Hong Kong Polytechnic University

Abstract

Injection-locking of semiconductor laser diode is a simple and low cost method to realize high speed optical processes like wavelength conversion and 3R (re-timing, reshaping and re-amplification) in optical networks. Compared to semiconductor optical amplifier (SOA), injection-locked laser diode bears the proprietary feature of multi-channel processing, from which both power and wavelength of each input signals can act as the input parameters to control the optical output. Application of Injection-locked laser diode can be deployed in transport networks, core switching networks and down to access networks. Reports show that single wavelength injection-locked laser diode can be used for wavelength conversion and implementation of remodulation transmitter, where two-wavelength injection-locking can be used for wavelength conversion, format conversion and 3R regeneration. In this talk, projects concerning multi-wavelength injection-locked laser diode (MILD) performed in the Photonics Research Center of The Hong Kong Polytechnic University will be discussed, from which preliminary results for all-optical polarizer; all-optical bit-error monitoring systems (BEMS) and all-optical packet switching will be depicted.

Biography

Simon Chan received his B.Sc degree in Applied Physics from City Polytechnic of Hong Kong in 1993. He then continued his postgraduate research in opto-electronics (specialty in III-V optical waveguides and all-optical wavelength conversion) in the department of Electronic Engineering at Chinese University of Hong Kong (CUHK), where he obtained his MPhil and PhD in the years of 1995 and 1999 respectively. After spending two years for postdoctoral research concerning crosstalk reduction and optical access network technologies in Lightwave Communication Lab. of Information Engineering department at CUHK, he served as a Research Fellow in the Photonics Research Center at Hong Kong Polytechnic University. His research interests are mainly focused on the design and development of high-speed (10 Gb/s or beyond) sub-systems for optical communication.

Date : November 3, 2003 (Monday)
Time : 4:30 P.M.
Venue : Room 418, Ho Sin Hang Engineering Building

***** All ARE WELCOME *****

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