SEMINAR

WEDNESDAY, May 2, 2012
1:15 P.M.
ROOM BRK 2001

Fred A. Kish

Sr. Vice President, Optical Integrated Components Group
Infinera Corporation, 1322 Bordeaux Drive, Sunnyvale, CA 94301

Current Status of Large-Scale InP Photonic Integrated Circuits

Abstract

The current state-of-the-art for large-scale InP photonic integrated circuits (PICs) is reviewed with a focus on the devices and technologies that are driving the commercial scaling of these highly integrated devices. Specifically, high-capacity dense wavelength division multiplexed (DWDM) transmitter and receiver photonic integrated circuits (PICs) are reviewed with a focus next generation devices: $\geq$500 Gb/s and 1 Tb/s coherent multi-channel transmitter and receiver InP PICs. These large-scale PICs integrate hundreds of devices onto a single monolithic InP chip and enable significant reductions in cost, packaging complexity, size, fiber coupling, and power consumption which enable benefits at the component and system level.

Biography

Fred A. Kish received his Ph.D. (1992) in electrical engineering from the University of Illinois at Urbana-Champaign. From 1992 to 1999, he was at Hewlett-Packard's Optoelectronics Division where he co-invented and led the commercialization of the highest performance (efficiency) red-orange-yellow visible LEDs produced to date with efficiencies exceeding halogen lamps. From 1999 to 2001, he was with Agilent Technologies Fiber Optics Components Division as the III-V Department Manager. There, he led the department that developed commercially viable 2.5 Gb/s vertical cavity surface-emitting lasers (VCSELs) and VCSEL/detector arrays (12 x 2.5 Gb/s) for next generation fiber-optic transceiver and the first parallel-optic transmitter/receiver products. In 2001, he joined Infinera as Vice President of Photonic Integrated Circuit (PIC) Department, and is now Sr. Vice President of the Optical Integrated Components Group. At Infinera, he co-invented and led the effort to develop the first practical (commercial) large-scale PICs. Dr. Kish's awards and recognition include: Fellow of the OSA and IEEE, the IEEE David Sarnoff Award, the IEEE LEOS Engineering Achievement Award, and the OSA Adolph Lomb Award.

Prof. Andrew Weiner (amw@purdue.edu; 45574 is hosting Fred Kish.