Overview of Large-Port-Count MEMS-based Optical Crossconnect Systems

Abstract
The exponential growth in optical fiber transmission capacity over the past decade has not been able to spark a business growth in the same scale for network operators. The current disrupted optical communication market must be recovered by generating new services. These services pose drastically different provisioning and restoration requirements compared those in traditional networks. Optical crossconnect (OXC) with transparent optical switch fabric can provide bit rate-independent photonic switching. Moreover, it offers cost-effective and scalable provisioning and restoration vehicle in optical layer for next generation mesh optical networks. In this talk, we discuss various design trade-offs and challenges in the realization of large-port-count MEMS-based optical crossconnect systems.

Biography
Dennis T.K. Tong received B.S degree from the University of Maryland, College Park in 1993, M.S. and Ph.D degrees from the University of California, Los Angeles in 1995 and 1998, respectively, all in electrical engineering.

From 1998 to 2000, he was a Member of Technical Staff at Lucent Technologies Bell Laboratories, Holmdel, NJ, where he conducted research in clock recovery using optoelectronic techniques for high-speed TDM communication systems. In 2000, he joined Tellium Inc., Oceanport, NJ, as a Senior Member of Technical Staff and where he engaged in the development of large-port-count MEMS-based optical crossconnect system. Since January 2003, Dr. Tong has been with the Department of Electrical and Electronic Engineering at Hong Kong University of Science and Technology. His current research interests include high-speed optical communication, microwave photonics, and optical crossconnect systems.