



Presenter

Dr. Michal Lipson

Assistant Professor
Cornell University
411 Phillips Hall Ithaca, NY 14853
Phone: (607) 255-7877 Fax: (607) 254-3508
Email: ml292@cornell.edu



Abstract

Title: *Ultra-fast modulation of high confinement structures on a silicon chip*

The high degree of optical confinement on-chip such as high Q resonators enables unprecedented performance of novel devices as well as novel optical phenomena. The enhancement of light in a specific location of the structure increases the sensitivity of the device to external control and has led to the demonstration of 20GHz micron-size silicon modulators. The modulation of high Q cavities, has also enabled the tuning of the cavities to occur on a time scale of the order of the photon lifetime. This ultra-fast dynamic tuning lead to the recent demonstration of novel phenomena such as wavelength conversion on-chip as well as mechanisms for overcoming traditional bandwidth –delay product limitation in optical buffers.

Biography

DR. LIPSON is an Assistant Professor at the School of Electrical and Computer Engineering at Cornell University, Ithaca NY, since 2001. Prior to this appointment, she was a postdoctoral associate at the Department of Material Science and Engineering at MIT, following her Ph.D. in Physics at the Technion - Israel Institute of Technology. Her research focuses on novel on-chip Nanophotonics devices. She holds several patents on novel micron-size photonic structures for light manipulation, is the author of over 100 technical papers in journals in Physics and Optics. Prof. Lipson is a Sr. IEEE member and member of OSA.