



Washington University in St. Louis

SCHOOL OF ENGINEERING & APPLIED SCIENCE

Preston M. Green Department of Electrical & Systems Engineering

Seminar Announcement

Bo Peng, Ph.D.
GLOBALFOUNDRIES



Friday, June 29, 2018
Green Hall, Room 0120
11:00 A.M.

Advanced Light Control on Integrated Silicon Photonics Platform

Abstract: Silicon photonics is quickly emerging as a vital technology for enabling the increased speed and volume in data exchange as required by telecommunication (5G) and data centers. It provides an economical solution, to leverage the unique properties of optical communications, including transmission of high-speed data while maintaining low power consumption, between computer chips and racks within servers, supercomputers, and large datacenters for cloud service, in order to alleviate the limitations of congested data traffic produced by contemporary interconnect technologies. Meanwhile, production of silicon photonics with CMOS compatibility enables the large-scale, low-cost manufacturing of functional Si photonic devices for these high speed data communications as well as large scale sensor network deployment. Dr. Peng will present recent research on fundamental studies and new applications explored on silicon photonics platform, with the development of various unique devices to enable advanced light control. He will discuss the exploration of CMOS integrated monolithic nanophotonics devices for short-reach optic interconnects and highly efficient optical I/Os, the on-chip microresonator design for light manipulation and optical isolation, lasing and dissipation control, optomechanics interaction, as well as different integrated sensor development with ultra-high sensitivity.

Bio Dr. Bo Peng is currently a researcher at GLOBALFOUNDRIES. He joined GLOBALFOUNDRIES since 2018. Previously, he worked as a postdoctoral researcher in the Silicon Integrated Nanophotonics Group at IBM T.J. Watson Research Center for three years, since 2015. He earned his B.S. degree in Optics and Applied Physics from University of Science and Technology of China (USTC) in 2009, and his M.S. degree and Ph.D. degree in Electrical Engineering from Washington University in St. Louis, in 2011 and 2015. His current research projects focus on CMOS integrated monolithic silicon photonics for short-reach optical interconnects, on-chip optical networks, and integrated optical sensors. These involve design, fabrication, and characterization of nanophotonic devices and functional sub-systems, as well as low-cost high-throughput silicon photonic I/O solutions. His other research interests and efforts include integrated optical waveguides and microresonators, microcavity laser, metamaterials, optical backscattering, cavity optomechanics, nonlinear optics and non-Hermitian optics, PT-symmetric optics, Fluorescence/Raman spectroscopy, photoacoustic imaging, cavity-QED, and integrated photonic nano fabrication.

Host: Lan Yang