Workshop Speaker	
Name	Daoxin Dai
Affiliation	Zhejiang Univ.
Presentation Title	Microring resonator on silicon

Biography

Daoxin Dai received the B.Eng. degree from the Department of Optical Engineering, Zhejiang University (ZJU), Hangzhou, China, and the Ph.D. degree from the Royal Institute of Technology, Stockholm, Sweden, in 2000 and 2005, respectively. He joined ZJU as an Assistant Professor in 2005 and became an Associate Professor in 2007, and a Full Professor in 2011. He visited the Chinese University of Hong Kong in 2005, and Inha University, South Korea, in 2007. He was with the University of California, Santa Barbara, USA, as a Visiting Scholar in the years of 2008-2011.
He is currently leading the Silicon Integrated Nanophotonics Group at Zhejiang University and he has published >160 refereed international journal papers. Dr. Dai is one of Most Cited Chinese Researchers in 2015-2018 (Elsevier).
He has given >60 invited talks and also served as the TPC Member or Session Chair for prestigious i nternational conferences (e.g., OFC). He is also serving as the Associate Editor of the Journals of IE EE Photonics Technology Letters, Optical and Quantum Electronics, and Photonics Research. He is t he Guest Editor of the Integrated Photonics special issue of Photonics Research, and the Metamateria ls Photonics and Integration special issue of IEEE JSTQE.

200 words abstract

Silicon-based optical micro-ring resonators (MRRs) are very attractive for many applications because of the ultra-compact footprint and easy fabrication. This paper gives a review of our recent work on novel silicon-based MRRs and the applications for optical filtering and switching. The following parts are included. (1) A “perfect” high-order MRR optical filter with a box-like filtering response is realized by introducing bent directional couplers; (2) A efficient thermally-tunable MRR optical filter with a graphene transparent nano-heater is realized by introducing transparent graphene nanoheaters; (3) Polarization-selective MRR optical filters are realized to work with resonances for only one of TE and TM polarizations for the first time. (4) A on-chip reconfigurable optical add-drop multiplexer for hybrid mode-/wavelength-division-multiplexing systems is realized for the first time by monolithically integrating a mode demultiplexer, four tunable MRRoptical switches, and a mode multiplexer.