



OSA Traveling Lecturer

April 25th: 10:30 AM

Room: Birck 2001

Speaker: Stefan Preble
Integrated Photonics:
Classical to Quantum



Student Lunch: Birck 1001, 11:30 AM

Abstract:

Integrated photonics is leading a revolution by integrating the advantages of light (speed, bandwidth and energy) with the scalability of integrated electronic manufacturing. I will discuss how integrated photonics is enabling this revolution and the challenges that still remain. I will begin with an overview of photonic circuits for classical applications, in particular the primary building blocks (waveguides, ring resonators, electro-optic modulators, hybrid III-V/Si lasers) and some of their applications (transceivers, LIDAR and sensors). I will then give an overview photonic chips for quantum applications, in particular the realization of photon sources and circuits that manipulate entanglement. I will also present highlights of our work on integrated photonic packaging at AIM Photonics Test, Assembling and Packaging (TAP) facility in Rochester, NY.

Bio:

Stefan Preble is a Professor in the Kate Gleason College of Engineering at the Rochester Institute of Technology. He is an expert in Integrated Photonic devices and circuits and is working to implement the technology in high performance computing, communication and sensing systems. He received his B.S. degree from RIT in Electrical Engineering (2002), and Ph.D. in Electrical & Computer Engineering from Cornell University (2007). He has published in numerous peer-reviewed journals and has received several awards recognizing his work, including a DARPA (Defense Advanced Research Projects Agency) Young Faculty Award and an AFOSR (Air Force Office of Scientific Research) Young Investigator Award. He is leading two initiatives (optical fiber packaging and integrated photonic design/test education) for the American Institute for Manufacturing Integrated Photonics (AIM Photonics), a Manufacturing USA institute headquartered in Rochester, NY. He is currently teaching an online edX course (Photonic Integrated Circuits 1 - <https://www.edx.org/course/photonic-integrated-circuits>) for AIM Photonics.