NANYANG TECHNOLOGICAL UNIVERSITY

PAP Seminar Announcement

Fundamental scaling laws & light-matter enhanced nanophotonic devices

By
Prof Volker Sorger
The George Washington University

Date: 30 October 2015 (Friday)
Time: 16.00 – 17.00
Venue: Hilbert Space (PAP-02-02)
Host: Asst. Prof. Cesare Soci

Abstract

Over the last decade, on-chip integrated opto-electronic circuits such as the silicon photonics showed great potential for high-data bandwidth applications. However, while the photonic device performance is steadily increasing, the inherently weak light-matter-interactions set fundamental limits to performance metrics such as footprint & integration density, data rate, and drive power. The objective of this talk is to show physical scaling laws and limitations while highlighting recent advances and solutions to overcome them. A case for atom-thin layered 2D materials is made. Device demonstrations are shared relating to electro-optic modulation and plasmon lasers.

Short Biography

Volker J. Sorger is an assistant professor in the Department of Electrical and Computer Engineering, and the director of the Nanophotonics Labs at The George Washington University. He received his PhD from the University of California Berkeley. His research areas include opto-electronic devices, plasmonics and nanophotonics, including novel materials. Dr. Sorger received multiple awards such as the AFOSR YIP award, MRS Graduate Gold award, and Intel Fellowship. Dr. Sorger is the executive chair of the OSA Nanophotonics technical group, editor-in-chief for 'Nanophotonics', CTO of BitGrid LLC, and member of IEEE, OSA, SPIE, and MRS. Lastly he is the founder of the 'Materials for Nanophotonics' subcommittee at the Integrated Photonics Research (IPR) topical meeting, and currently serving on a task force of the National Photonics Initiative (NPI).

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