

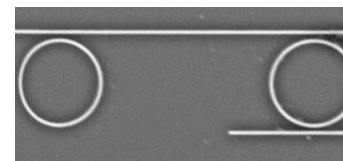
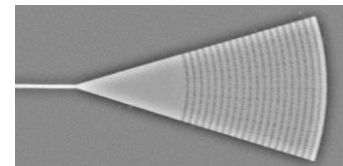
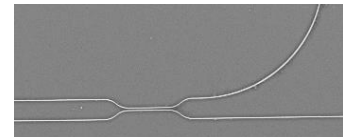
Silicon Photonics Workshop

August 6 - 7, 2024

The fundamental Silicon Photonics Workshop offers broad training in modeling and design through lectures, videos, simulations, and virtual lab experiments. This workshop aims to equip participants with the knowledge and skills necessary to meet the demands of the U.S. integrated photonics workforce. Attendees will participate in interactive face-to-face sessions and virtual lab activities, preparing them to utilize integrated photonics circuits in addressing the challenges and problems of today's high-speed, high-performance, SWaP-C, state-of-the-art sensors, communication systems, artificial intelligence, imaging, computing, IoT, data transport and processing, etc.

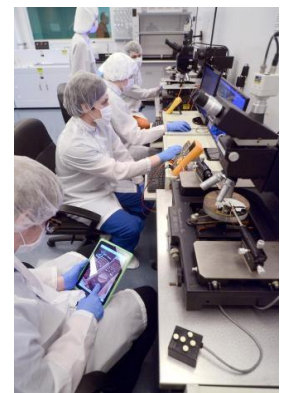
Lecture Topics

- General survey of recent developments in Si Photonics
- Historical context and photonics applications
- Technical challenges and the state of the art
- Opto-electronics properties of silicon
- Light propagation in dispersive media
- Silicon-on-Insulator (SOI) waveguide design and fabrication
- Optical-mode propagation
- Effective indices and losses in waveguides
- Design and Modeling of Building Blocks of Passive Silicon Devices
- Optical input/output devices
- Modeling Mach-Zehnder interferometers (MZI) and applications
- Modeling ring resonators and applications



WHO SHOULD ATTEND?

Engineers and technical professionals working in industries such as telecommunications, data centers, and semiconductor manufacturing; Researchers and individuals involved in R&D in photonics, optical communications, sensors, and related fields; Industry professionals, managers and business leaders and product managers in tech companies can understand market trends, potential applications, and business opportunities in silicon photonics; Startup founders and entrepreneurs looking to innovate and create new products or services in the field of photonics can gain technical knowledge and connect with potential collaborators; Graduate students specializing in photonics, optics, electrical engineering, or related disciplines can gain valuable knowledge and applicable to their field of study.



REGISTRATION

This workshop is sponsored by Intel and RHIT, and it is free to all participants. Registration for this event is limited to 20 and is open till August 1, 2024, so register ASAP to secure your spot.

<https://forms.gle/SxYFWUBcqjHRpBEM9>

LOCATION

The Si Photonics workshop will be held in Silicon Crossroads Microelectronics Hub at WestGate Academy: 13598 E WestGate Drive Odon, IN 47562 USA.



EQUIPMENT REQUIREMENTS

Attendees should bring their laptops to participate in all hands-on activities. However, it is recommended to use a Windows based laptop.

TRAVEL & ACCOMMODATIONS

Participants are to make their own arrangements for travel and accommodation.

CONTACT

If you have any comments or questions regarding the contents or registrations of this workshop, please contact:

- **Azad Siahmakoun:** siahmako@rose-hulman.edu
- **Samuel Sheeder:** ssheeder@purdue.edu

CANCELLATIONS

We request that event cancellations are sent in writing at least one week before the beginning date of the event so the next person on the waiting list can be notified.

INSTRUCTOR

Dr. Azad Siahmakoun is a Professor of Physics and Optical Engineering and the founding director of the Micro-Nanoscale Devices and Systems (MiNDS) cleanroom facility at Rose-Hulman Institute of Technology. He specializes in photonics, MEMS, and nanotechnology, and has established the Nonlinear Optics, Microwave Photonics, and Silicon Photonics laboratories. His education and research activities have been supported by federal and state agencies as well as industry partners. Professor Siahmakoun holds four patents and has supervised over 100 undergraduate research projects and 43 master's theses. He has authored or co-authored more than 270 articles and conference presentations in areas such as photorefractive materials applications, silicon photonics devices, microwave photonics, and nanotechnology. He is a former Endowed Chair for Innovation in STEM Education, former director of the Center for Applied Optics Studies, former Associate Dean of Faculty, and director of Graduate Studies. Dr. Siahmakoun has received the Board of Trustees Outstanding Scholar Award and is a Fellow of the International Society for Optical Engineering as well as a senior member of Optica.