

AIM Summer Academy 2019
July 22-26, MIT
Integrated Photonics: Fundamentals, Practice, and Applications
More Information

About AIM Summer Academy

AIM Summer Academy is an annual one-week intensive program that introduces attendees to the materials science, device physics, circuit design principles, chip fabrication, packaging and testing, and EPDA software tools necessary to manufacture photonic integrated circuits using the Multi Project Wafer run (MPW) methodology of semiconductor chip foundries. The program provides an accelerated introduction to working directly with the most advanced state of the art 300mm semiconductor processing research fab in the world, operated by the AIM Photonics Institute and located at SUNY Polytechnic Institute.

Who should attend AIM Summer Academy?

AIM Summer Academy's audience is primarily industry professionals with little to moderate photonics knowledge or photonics manufacturing competency; our audience also includes faculty interested in building an Integrated Photonics instructional track at their university or community college. Lastly, our audience includes advanced undergraduate and graduate university students, seeking to diversify their skill set and learn about both the fundamentals of photonics design and an introduction to photonic integrated circuit fabrication.

What will you learn at AIM Summer Academy?

Attendees acquire a core competency in photonic device design, photonic integrated circuit (PIC) layout, and PIC manufacturing principles. The Academy program will enable attendees to:

- Identify optical components market trends and assess electronic-photonics integration benefits in emerging industry applications: datacom, RF signal processors, sensors, LIDAR imaging.
- Evaluate the performance of silicon photonic devices and foundry chip production methods.
- Learn about the standardized approach of Process Design Kits (PDKs) to begin designing basic photonic integrated circuits (PICs) for fabrication with AIM Photonics.
- Use leading automated design tools from vendors who collaborate intensively with the PIC foundry production process used by AIM Photonics.
- Learn about PIC packaging evolution and test characterization methods.
- Interpret application design tradeoffs subject to the manufacturing constraints for PICs comprised of thousands of integrated device components.
- Develop foundational content to support and promote (i) integrated photonic competency within a company, or (ii) an integrated photonics track within a community college or university.

Quick Facts

- AIM Summer Academy runs from July 22-26, 2019 at MIT.
- Attendees can register for either a *PIC Fundamentals* or *Applied PIC Design* Education Track.
- The *PIC Fundamentals* track reviews photonics materials science, device design, the PDK and MPW process, PIC chip fabrication, manufacturing process variation; the track also reviews PIC chip packaging and test characterization methods.
- The *Applied PIC Design* track trains in PIC circuit design using AIM-compatible Electronic Photonic Design Automation (EPDA) software tools; the track also reviews PIC chip packaging and test characterization methods.
- Both Education Tracks collaborate on a joint design review team project.
- A Networking Dinner (on Wednesday evening, July 24) is included with both Education Tracks.
- Registration deadline: Monday, July 15, 2019.
- Admission for either Education Track is \$1,500; a student discount is available for either Education Track.
- A [map](#) of the city of Cambridge, showing important landmarks, facilities and restaurants close to MIT.
- Open to industry professionals (researchers, baccalaureate engineers, technicians, management); academic students (senior year undergraduate, graduate level Master's or PhD); and academic faculty (university, community college) with interests in related research or in building an integrated photonics track at their home institution.
- Registration is limited and based on a first come, first served basis.
- Registration requires your name, affiliation, email/phone contact information, a short description of your background in photonics, and a short description of three photonics learning goals that are a priority for you in taking this intensive program.
- Your registration will be confirmed via email, and will include additional instructions on how to complete your registration fee payment with MIT's online Ticket Office.
- Housing is off-campus and must be arranged by the attendee; click [here](#) for a comprehensive MIT online resource to find local hotels or bed-and-breakfast options.
- A light breakfast snack, coffee/tea (available throughout the day) and lunch will be provided. Attendees are expected to arrange for their own dinner (except for the night of the Networking Dinner). Several convenient lunch and dinner options are available within MIT campus and in nearby Kendall or Central Square.
- Arriving late or departing early could compromise your learning experience. To receive AIM Photonics Academy certification, attendees should attend all registered program dates. The Summer Academy program immerses attendees in a collaborative learning experience that includes daily team work on an integrated photonics design challenge project, and full attendance is important in order to contribute fully to this hands-on learning process and master the curriculum milestones.
- Successful completion of the full-week program results in a certification by AIM Photonics Summer Academy with the prerequisite skill set to take AIM's online edX training course (offered Fall, 2019) for design submissions to MPW runs with AIM Photonics.