The field of silicon photonics continues to develop for an increasing number of application areas. Technology allowing the combination and miniaturization of optoelectronic and electronic devices in an integrated silicon platform is the key to providing affordable smart components for many different markets. Integration offers reduced component costs and size reduction in photonic networks, particularly for the emerging markets. Examples continue to appear of integrated systems and sub-systems, with the Data Center application leading the technology pull. Similarly, smart measurement and sensing systems using integrated optoelectronics could be miniaturized and made available at low cost, allowing wide deployment for medical, biological, and environmental screening applications. The need for optical interconnects on ULSI circuits is now an essential part of the roadmap for Si microelectronics.

As systems emerge, there is an increased focus on implementation, interfacing, and test. Consequently work is increasing on automated wafer scale testing systems, packaging, and passive alignment, all realized at low cost. Silicon is the ideal platform for integration of smart components. Large diameter, high quality silicon, and silicon-on-insulator (SOI) wafers are available at a relatively low cost and provide many chips per wafer, even for large area optoelectronic circuits. Furthermore, the move to 300mm wafers only exacerbates the need for high quality test and packaging in order to reach mass market applications. The maturity of Si process technology provides leverage for manufacture of optoelectronic components and provides many ways to integrate optoelectronic and electronic components on the same substrate. For optical interconnects, other important topics are the overall circuit architectures, the total power consumption, and the technology for optical wiring, couplers, modulators, emitters, and detectors, I/O, multiplexing and increasing levels of integration.

The emergence of the field of mid infra-red Silicon Photonics also opens many opportunities for this maturing technology to be applied into another buoyant application area, perhaps more naturally aligned with sensing applications. This conference aims to provide an international forum for presenting the latest results and reviewing technologies relevant to the evolution of active and passive optoelectronic devices on Si and SOI platforms for all applications. Prospective authors are invited to submit original experimental and theoretical papers dealing with enabling technology for optoelectronic device integration on Si-based platforms.

Topics of particular interest are silicon photonics devices and systems based on:

- monolithic integration in Si and group-IV alloys (electronic and photonic integrated circuits)
- hybrid integration (heterostructures, flip-chip bonding, and multi-chip modules on silicon)
- optical interconnect technology for ULSI
- wafer scale testing
- packaging
- optical I/O
- towards high-volume manufacturing
- systems and energy
- cost models for Si Photonics
- 300mm-technology implementation
- low-power devices
- LEDs
- lasers
- detectors
- amplifiers
- wavelength converters
- mux/demux (rings, arrayed waveguide gratings, etc.)
- modulators
- interposers
- passive alignment
- switches
- waveguides (SOI, SiO₂/Si, SU-8, or sol-gel materials, including design innovation for high-index contrast Si-nanophotonic waveguide systems)
- coupling
- Si photonic crystals and micro-cavities
- lab-on-a-chip
- optoelectronic sensors on Si for measurement and screening in biological, clinical, genomics, proteomics, and environmental applications
- micro-opto-electro-mechanical systems (MOEMS)
- mid-infrared applications
- quantum photonics
- long-wavelength communications.
Present your research at SPIE Photonics West

Below are abstract submission instructions, the accompanying submission agreement, conference presentation guidelines, and guidelines for publishing in the Proceedings of SPIE on the SPIE Digital Library. Submissions subject to chair approval.

### Important dates

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abstract submission deadline</td>
<td>11 August 2021</td>
</tr>
<tr>
<td>Author notification</td>
<td>11 October 2021</td>
</tr>
<tr>
<td>Manuscript due date</td>
<td>29 November 2021</td>
</tr>
<tr>
<td>Oral presentation videos due</td>
<td>29 December 2021</td>
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<tr>
<td>Poster PDF and preview videos due</td>
<td>29 December 2021</td>
</tr>
<tr>
<td>Oral presentation slide deadline</td>
<td>20 January 2022</td>
</tr>
</tbody>
</table>

*Authors must register prior to uploading.*

### What you will need to submit

- **Title**
- **Author(s) information**
- **250-word abstract for technical review**
- **100-word summary for the program**
- **Keywords used in search for your paper (optional)**
- **Check the individual conference Call for Papers for additional requirements (for example, some conferences require 2- to 3-page extended summary for technical review, or have instructions for award competitions)**

Note: Only original material should be submitted. Commercial papers, papers with no new research/development content, and papers with proprietary restrictions will not be accepted for presentation.

### How to submit your abstract

- Visit the conference page: [www.spie.org/e203call](http://www.spie.org/e203call)
- You may submit more than one abstract but submit each abstract only once.
- Click the "Submit An Abstract" button on the conference page.
- Sign in to your SPIE account or create an account if you do not already have one.
- Follow the steps in the submission wizard until the submission process is completed.
- If your submission is related to an application track below, indicate the appropriate track when prompted during the submission process.

### Application track

- **Brain:** Papers that describe the development of innovative technologies that will increase our understanding of brain function.
- **Translational Research:** Papers that showcase the latest photonics technologies, tools, and techniques with high potential to impact healthcare.
- **3D Printing:** Papers that showcase innovative ways to apply this multidimensional/multidisciplinary technology.
- **COVID-19 Research:** Papers that illustrate the creativity and breadth of the optics and photonics community’s response to the COVID-19 pandemic.

### Submission agreement

All presenting authors, including keynote, invited, oral, and poster presenters, agree to the following conditions by submitting an abstract:

- Register and pay the author registration fee.
- Oral Presenters: Submit a presentation video by the advertised due date, or agree to the presentation capture of your presentation on site, for online conference viewing during the event and publication in the Proceedings of SPIE on the SPIE Digital Library.
- Poster Presenters: Submit a Poster PDF and optional preview video by the advertised due date, for online conference viewing during the event and publication in the Proceedings of SPIE on the SPIE Digital Library.
- Submit a 4-page-minimum manuscript by the advertised due date, for online conference viewing during the event and publication in the Proceedings of SPIE on the SPIE Digital Library.
- Obtain funding for registration fees, travel, and accommodations, independent of SPIE, through their sponsoring organizations.
- Ensure that all clearances, including government and company clearance, have been obtained to present and publish.
- If you are a DoD contractor in the USA, allow at least 60 days for clearance.
- Attend the meeting.
- Present at the scheduled time.

### Review and program placement

- To ensure a high-quality conference, all submissions will be assessed by the Conference Chair/Editor for technical merit and suitability of content.
- Conference Chairs/Editors reserve the right to reject for presentation any paper that does not meet content or presentation expectations.
- Final placement in an oral or poster session is subject to Chair discretion.

### Publication of Proceedings in the SPIE Digital Library

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