CALL FOR PAPERS

Novel In-Plane Semiconductor Lasers XXI (OE602)

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High-quality, in-plane semiconductor lasers exhibit improved performance over a wide range of emission wavelengths from ultraviolet into the THz range. Devices are finding an ever-increasing number of applications in, for example, telecommunications, printing, spectroscopy, displays, and medical diagnostics and therapy.

Well-developed GaAs- and InP-based lasers operating from the 0.8 to 2-?m are achieving multi-watt output powers with beams of high spatial and spectral purity. Lasers made from material systems, such as dilute nitride-antimonides, bismides or quantum-dot active regions, are pushing performance and spectral coverage. Mode-locked diode lasers are demonstrating improvements such as reduced pulse length and timing jitter. Applications in communication are pushing advances in laser dynamics, including the use of coupled and/or chaotic semiconductor lasers. The GaN based laser field continues to innovate and make progress in terms of e.g. power, reliability and to extend operation deeper into the orange and the ultraviolet parts of the spectrum. In the infrared, Sb-based quantum well lasers display high performance at wavelengths up to ~ 5 ?m, and quantum cascade lasers operate at wavelengths from just below 3 ?m to almost 300 ?m. Emerging applications in the mid/far-infrared stimulate the development of high-efficiency, high-power quantum cascade lasers operating at an ambient temperature and with new functionalities such as ultrashort pulse generation, frequency combs, injection locking, and beam control. Novel laser sources utilize recent advances in plasmonics, nanophotonics, topological photonics, and nonlinear optics for efficient generation and manipulation of light. A variety of approaches for silicon-based lasers, including hybrid structures by local area growth or wafer bonding are yielding advancing performance. Laser sources based on novel two-dimensional and topological materials are showing promise.

This conference provides a forum for the most recent breakthroughs in device design and performance. We solicit papers describing novel designs that achieve higher performance levels and unique operational characteristics, as well as papers describing the technical limitations of the current in-plane laser technology and lasers tailored to particular applications such as heat-assisted magnetic recording or neuromorphic computing. We are interested in new methods of fabrication or new methods of characterization that are necessary for improved performance. Papers of experimental and/or theoretical nature are welcome.

Examples of in-plane laser types of interest include, but are not limited to:
- quantum cascade
- organic lasers
- InGaAsP/InP and InGaAsP/GaAs
- quantum dot lasers
- type-II quantum-well and superlattice lasers
- coherent and incoherent laser arrays
- topological lasers
- MOPA and/or flared-waveguide lasers
- narrow-linewidth lasers
- vertically-coupled in-plane lasers.

Submit abstracts by 11 August 2021

22–27 January 2022
The Moscone Center
San Francisco, CA, USA

www.spie.org/oe602call
#PhotonicsWest
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**

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<tr>
<th>Event</th>
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<tr>
<td>Abstract submission deadline</td>
<td>11 August 2021</td>
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<tr>
<td>Author notification</td>
<td>11 October 2021</td>
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<tr>
<td>Submission system opens for presentations and manuscripts*</td>
<td>29 November 2021</td>
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<td>Manuscript due date</td>
<td>29 December 2021</td>
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<td>Oral presentation videos due</td>
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<td>Poster PDF and preview videos due</td>
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<td>Oral presentation slide deadline</td>
<td>20 January 2022</td>
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*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/oe602call](http://www.spie.org/oe602call)
- 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 optics 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**

- SPIE will publish all presentations for viewing during the conference, as well as permanently archive all presentations in the conference proceedings on the SPIE Digital Library.
- SPIE retains rights to distribute and market the official SPIE recording of the presentation, presentation video, and/or poster.
- Most SPIE conferences follow an onsite publication model, meaning that manuscripts received by the advertised due date will be published for online viewing during the event, as well as archived in the SPIE Digital Library.
- A select few of SPIE conferences may elect to follow a Post-Meeting model of publication in order to conduct a more thorough review of manuscripts. In this model, manuscripts will be published 2-4 weeks after the event in the SPIE Digital Library.
- Authors must be authorized to transfer copyright of the manuscript to SPIE, or provide a suitable publication license. Authors retain the right to prepare derivative publications based on the paper.
- Conference Chairs/Editors may require manuscript revision before approving publication and reserve the right to reject for publication any paper that does not meet acceptable standards for a scientific publication.
- Conference Chair/Editor decisions on whether to allow publication of a manuscript are final.
- Only papers, presentations, and posters presented at the conference and received according to publication guidelines and due dates will be published in the conference Proceedings of SPIE on the SPIE Digital Library.
- SPIE partners with relevant scientific databases to enable researchers to find the papers in the Proceedings of SPIE easily. The databases that abstract and index these papers include Astrophysical Data System (ADS), Ei Compendex, CrossRef, Google Scholar, Inspec, Scopus, and Web of Science.
- More publication information available on the SPIE Digital Library.

**Additional Resources**

- **SPIE WILL PUBLISH YOUR RESEARCH GLOBALLY**
  - [www.SPIEDigitalLibrary.org](http://www.SPIEDigitalLibrary.org)
  - Your work will live far beyond the conference room—all proceedings from this meeting will be published in the SPIE Digital Library. Promote yourself, your ideas, and your organization to millions of key researchers from around the world through this web-based repository of the latest technical information.

**Questions?**

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