Physics and Simulation of Optoelectronic Devices XXIX (OE101)

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This conference targets existing, and new physical and mathematical methods as applied to optoelectronics, as well as recent advances in new materials and devices. Its objective is to bring together experimentalists, theorists, computational specialists, and development engineers to provide an interdisciplinary forum to discuss physical understanding and state-of-the-art computational analysis of active and passive optoelectronic materials and devices. Theoretical and experimental papers are solicited on the following and related topics:

• optoelectronic device modeling: lasers, light-emitting diodes, photodetectors, modulators, solar cells
• materials for optoelectronic devices: wide bandgap materials; band structure, band offsets, gain and recombination in II-VI and III-nitride structures, materials for mid-infrared optoelectronic devices, photonic synthetic matter
• plasmonic materials and structures: theory and application in optoelectronic devices
• 2D materials and their application in photonics: electronic band structure, luminescent properties, device strategies
• physics of nanostructures: quantum well, quantum wire, and quantum dot lasers and surface plasmon devices; hybrid nano structures, lattice mismatch and strain effects; Coulomb effects and macroscopic theories; carrier and quantum transport, capture, and dynamics; hole burning, gain suppression and non-equilibrium effects; coherent effects; polarization phenomena
• micro- or nano-cavity effects and photonic crystals: applications for LEDs and lasers; thresholdless laser; novel VCSEL structures; polariton lasers
• quantum communications: semiconductor quantum bits; single-photon devices; entangled states; quantum cryptography; optically-probed spin dynamics; cavity quantum electrodynamics, superconducting optoelectronics
• neuromorphic computing: modeling and concepts for photonic neural networks
• dynamics and noise in diode lasers and systems: gain switching; passive and actively mode-locked diode lasers; self-pulsations; chaos and instabilities in diode lasers and laser arrays; effects of injected light and optical feedback; coherence of lasers and laser arrays
• numerical simulation methods: heterolayer transport simulation; ab-initio and multi-scale simulation of materials for optoelectronics; computational electromagnetics; multi-scale and multi-physics methods
• modeling techniques for fiber and integrated optical devices: eigenvalue techniques, finite difference, finite element and Fourier transform methods, high-order propagation methods, wide-angle and vector wave equations, models of guided-wave reflection
• advances in waveguides and waveguide devices: pulse propagation in active waveguides, waveguide structures for routing, switching and high brightness devices; tapered waveguides; waveguide-fiber coupling; nonlinear and high-power effects in waveguides and fibers; gratings; soliton propagation.
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Follow these instructions to develop a successful abstract and accompanying manuscript for the conference and for publication in the Proceedings of SPIE in the SPIE Digital Library.

**How to submit an abstract**

1. Browse the conference program and select the conference(s) that most closely matches the topics of the research you wish to present. *Important: each abstract may be submitted to one conference only.*
2. Click “Submit an Abstract” from within the conference you’ve chosen, and you’ll be prompted to sign in to your spie.org account to complete the submission wizard.

3. If your submission is related to an application track, indicate the appropriate track when prompted during the submission process.

**What you will need to submit**

A completed electronic submission should include the following:

- Title
- Author(s) information
- 250-word abstract for technical review
- 100-word summary for the program
- Keywords used in search for your paper (optional)
- Your decision on publishing your presentation recording to the SPIE Digital Library (slide capture and audio)
- 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 competing for awards)

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.

**Important dates**

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<td>Abstracts Submission Deadline</td>
<td>26 August 2020</td>
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<td>Acceptance Notification Sent to Contact Author</td>
<td>2 November 2020</td>
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<td>Manuscripts Due (Conferences OE506, and OE801-OE803 Only)</td>
<td>20 January 2021</td>
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<td>Manuscripts Due (All Conferences EXCEPT OE506, and OE801-OE803)</td>
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**Submission agreement**

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

- Register and pay the author registration fee
- Attend the meeting
- Present at the scheduled time
- Publish their manuscript in the SPIE Digital Library
- 6-page manuscript minimum for LASE and OPTO; 4-page minimum for BIOS; 20-page maximum
- 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.

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To ensure a high-quality conference, all submissions will be assessed by the Conference Chair/Editor for technical merit and suitability of content.

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**Contact information**

For questions about submitting an abstract, or the meeting, contact the Conference Program Coordinator.