



Physics and Simulation of Optoelectronic Devices XXXII (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, photonics 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 and computing:** 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.

CONTINUED NEXT PAGE →

Present your research at SPIE Photonics West

Follow the instructions below to develop a successful abstract for submission to a conference and review policies for publication in the Proceedings of SPIE in the SPIE Digital Library. Submissions subject to chair approval.

Important dates

Abstracts due	19 July 2023
Registration opens	October 2023
Authors notified and program posts online	9 October 2023
Submission system opens for manuscripts and poster PDFs*	27 November 2023
Poster PDFs due for spie.org preview and publication	3 January 2024
Manuscripts due	10 January 2024
Advance upload deadline for oral presentation slides**	25 January 2024

*Contact author or speaker must register prior to uploading

**After this date slides must be uploaded onsite at Speaker Check-in

What you will need to submit

- Presentation title
- Author(s) information
- Speaker biography
- 250-word abstract for technical review
- 100-word summary of abstract for display in 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/oe101call
- You may submit more than one abstract, but submit each abstract only once
- Submit by clicking 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

Listed below are the application tracks available for this meeting. Application tracks aggregate presentations and focus on emerging technical and societal needs that require a multidisciplinary approach.

- **AI/ML:** Papers that highlight the use of artificial intelligence, machine learning, and deep learning to create and implement intelligent systems across multiple sectors, technologies, and applications
- **Sustainability:** Papers that highlight the use of optics and photonics for renewable energy, natural resource management, sustainable manufacturing, and greenhouse gas mitigation in support of the UN Sustainable Development Goals
- **Brain function:** Papers that highlight the development of innovative optics and photonics technologies that increase our understanding of brain physiology and function
- **Translational research:** Papers that highlight the transition from bench to bedside using the latest photonics technologies, tools, and techniques for healthcare
- **3D printing:** Papers that highlight the innovative use of optics and photonics in multidisciplinary applications for multidimensional manufacturing

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: recording and publication of your onsite presentation (slides synched with voice) for publication in the Proceedings of SPIE in the SPIE Digital Library
- Poster presenters: submit a poster PDF by the advertised due dates for publication in the Proceedings of SPIE in the SPIE Digital Library; poster PDFs may also be published and viewable in the spie.org program during and immediately after the event. Each poster must have a unique presenter; one person may not present more than one poster per session
- Email messaging for the conference series
- Submit a manuscript by the advertised due date for publication in the Proceedings of SPIE in the SPIE Digital Library
- Obtain funding for registration fees, travel, and accommodations
- 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

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