



**SPIE. PHOTONICS  
WEST  
BIOS**

**25 - 30 January 2025**  
The Moscone Center  
San Francisco, CA, USA

**CALL FOR PAPERS**

Submit abstracts by  
**17 July 2024**

## **Frontiers in Biological Detection: From Nanosensors to Systems XVII (BO603)**

*Conference Chairs:* **Amos Danielli**, Bar-Ilan Univ. (Israel); **Benjamin L. Miller**, Univ. of Rochester Medical Ctr. (United States); **Sharon M. Weiss**, Vanderbilt Univ. (United States)

*Program Committee:* **Andrea M. Armani**, The Univ. of Southern California (United States); **Nathaniel C. Cady**, SUNY Polytechnic Institute (United States); **M. Imran Cheema**, Lahore Univ. of Management Sciences (Pakistan); **Xudong Fan**, Univ. of Michigan (United States); **Andrea K. Locke**, Vanderbilt Univ. (United States); **Francesco Michelotti**, Sapienza Univ. di Roma (Italy)

### **SPECIAL ABSTRACT REQUIREMENTS**

Submissions to this conference must include the following:

- 100-word text abstract (for online program)
- 250-word text abstract (for abstract digest)
- 2-page extended abstract (optional; for committee review only). The extended abstract must be submitted as a separate PDF document limited to two pages, including tables and figures. Include author names and affiliations; text; any figures; tables, or images; and sufficient data to permit committee review.

Detection of biological materials, from DNA strands, to proteins, to whole pathogens, is increasingly becoming a concern throughout society, not only in diagnostic laboratories in hospitals but also for on-site uses by health care providers or soldiers. From monitoring incidence of drug-resistant bacteria in hospitals and detecting harmful pathogens for homeland security to ensuring that our food is safe and our water clean, new, simple, inexpensive, sensitive, and fast methods of identifying biological molecules and pathogens are a pressing need. Optical solutions promise to provide many of these advantages and as a result many platforms for optical detection are being demonstrated in the laboratory. The deployment of bio-detection systems however requires that stringent specifications be met, for example in terms of sensitivity, false-positive and false-negative assessments, automated sample processing and analysis, system design and integration, and low cost.

This conference seeks to gather scientists, engineers and users active in biological detection. Contributions are sought in all areas, from novel optical detection platforms to nanosensors to system integration and commercialization.

Topics of interest include but are not limited to:

- new sensing platforms
- ultrasensitive (single pathogen) detection methods
- utilization of nanomaterials and new optically responsive materials for pathogen detection
- miniaturized optic components such as microring resonators, photonic crystals, integrated optical waveguides, and nanoparticles
- label-free vs. tagged detection systems
- organic and inorganic platforms
- probe design
- strategies to eliminate non-specific binding
- integration of optics and microfluidics
- systems demonstrations
- sensor integration with microphysiological systems (tissue chips)
- new applications for environmental, medical, and food testing
- sensor platforms for a sustainable future
- A portion of the conference will focus on integrated photonic sensors; submissions in this topic area are particularly encouraged.

All submissions will be reviewed by the Program Committee to determine acceptance. Extended abstracts will be used only for the purpose of review and will not be published.

[www.spie.org/bo603call](http://www.spie.org/bo603call)

#PhotonicsWest

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**SPIE.**

# 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	17 July 2024
Registration opens	October 2024
Authors notified and program posts online	7 October 2024
Submission system opens for manuscripts and poster PDFs*	25 November 2024
Poster PDFs due for spie.org preview and publication	2 January 2025
Manuscripts due	8 January 2025
Advance upload deadline for oral presentation slides**	23 January 2025

\*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 (1000-character max including spaces)
- Abstract for technical review (200-300 words; text only)
- Summary of abstract for display in the program (50-150 words; text only)
- Keywords used in search for your paper (optional)
- Check the individual conference call for papers for additional requirements (i.e., special abstract requirements or 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/bo603call](http://www.spie.org/bo603call)
- Choose one conference that most closely matches the topics of your abstract. You may submit more than one abstract, but submit each abstract only once
- Click the title of the conference to view the full description and submit by clicking the "Submit an Abstract" button on that 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
- **Photonic chips:** Papers that highlight advances in materials, design, fabrication, integration, testing and packaging of photonic components at the chip level

## 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 conference registration fee
- Agree to receive email messaging for the conference series
- 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: one person may not present more than two posters in a poster session; poster presenters may submit an optional poster PDF available for preview in the online program (web and app) and for publication in the Proceedings of SPIE in the SPIE Digital Library
- 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

## Publication of Proceedings in the SPIE Digital Library

Increase your professional visibility and publish in the world's largest collection of optics and photonics research. Your peers access approximately 18 million papers, presentations, and posters from the SPIE Digital Library each year.

- Only manuscripts, presentations, and posters presented at the conference and received according to publication guidelines and due dates will be published in the Proceedings of SPIE in the SPIE Digital Library
- Manuscripts, presentations, and posters will be officially published after the event in the SPIE Digital Library
- Conference chairs/editors or SPIE staff may require revision before approving publication and reserve the right to reject for publication any manuscript or presentation that does not meet acceptable standards for a scientific publication
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- More publication information available on the [SPIE Digital Library](http://SPIEDigitalLibrary)

# ABSTRACT SUBMISSION GUIDELINES

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## Contact information

### QUESTIONS?

Contact the coordinator listed in your spie.org account.

For questions about your presentation, submitting an abstract or the meeting, contact your conference program coordinator.

For questions about publication or the SPIE Digital Library, contact your proceedings coordinator.

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