



Optical Diagnostics and Sensing XXIV: Toward Point-of-Care Diagnostics (BO504)

Conference Chairs: **Gerard L. Coté**, Texas A&M Univ. (United States); **Justin S. Baba**, Vanderbilt Univ. (United States)

Program Committee: **Zane A. Arp**, U.S. Food and Drug Administration (United States); **Justin S. Baba**, Vanderbilt Univ. (United States); **Brent D. Cameron**, The Univ. of Toledo (United States); **Hatice Ceylan Koydemir**, Texas A&M Univ. (United States); **Blaž Cugmas**, Univ. of Latvia (Latvia); **H. Michael Heise**, Fachhochschule Südwestfalen (Germany); **Kristen C. Maitland**, Chan Zuckerberg Initiative (United States); **Mike J. McShane**, Texas A&M Univ. (United States); **Timothy J. Muldoon**, Univ. of Arkansas (United States); **Aydogan Ozcan**, Univ. of California, Los Angeles (United States); **Jessica C. Ramella-Roman**, Florida International Univ. (United States); **Babak Shadgan**, International Collaboration On Repair Discoveries (Canada)

The focus of this conference will be on invasive and noninvasive optical methods for the diagnostics and sensing of all types of biological fluids: blood, lymph, saliva, mucus, gastric juice, urine, aqueous humor, semen, etc. both in vitro and in vivo with, for example, point-of-care microfluidic technologies, mobile technology platforms such as cell phones and tablets, and/or wearable photonic technologies.

The techniques to monitor the fluids and optical properties of these fluids will be discussed including: elastic, quasi-elastic, and inelastic (Raman) light scattering, surface enhanced Raman (SERS) techniques, Doppler flowmetry, spectrophotometry, polarimetry, diffraction, holography, speckle, fluorescence, imaging, and related spectroscopic and microscopic techniques. Studies of biological fluid components on cellular and macromolecular levels, as well as nondestructive measurements of analyte content, will be presented. Theoretical and model studies, as well as clinical applications of the developed optical methods and instrumentation, will be outlined. Diagnostics and sensing systems for point-of-care and global health applications are particularly encouraged.

Suggested topics include, but are not limited to, the following areas:

- wearable photonic technologies
- mobile technology platforms
- point-of-care diagnostic and sensing systems
- global health diagnostics and sensing systems
- in-home diagnostics and monitoring systems
- glucose monitoring approaches
- analyte monitoring in vivo and in vitro
- biological fluid spectroscopy and imaging
- local flow velocity measurement
- blood microcirculation and tissue perfusion monitoring
- disease diagnostic potential of optical techniques.

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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/BO504call
- 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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- More publication information available on the [SPIE Digital Library](http://SPIEDigitalLibrary)

ABSTRACT SUBMISSION GUIDELINES

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