



## Optical Fibers and Sensors for Medical Diagnostics, Treatment and Environmental Applications XXII (BO305)

*Conference Chairs:* **Israel Gannot**, Johns Hopkins Univ. (United States), Tel Aviv Univ. (Israel); **Katy Roodenko**, MAX IR Labs (United States)

*Program Committee:* **Olga Bibikova**, art photonics GmbH (Germany); **James P. Clarkin**, Polymicro Technologies, A Subsidiary of Molex Incorporated (United States); **Ilko Ilev**, U.S. Food and Drug Administration (United States); **Jin U. Kang**, Johns Hopkins Univ. (United States); **Karl-Friedrich Klein**, Technische Hochschule Mittelhessen (Germany); **Pierre Lucas**, The Univ. of Arizona (United States); **Yuji Matsuura**, Tohoku Univ. (Japan); **Angela B. Seddon**, The Univ. of Nottingham (United Kingdom)

Optical components, devices and systems, both passive and active, operating in the X-ray ultra-violet (UV), visible (VIS), near-infrared (NIR) and mid-IR (MIR) spectral regions, for use in: medical, biological and environmental sensing, early disease diagnosis, disease progression or regression monitoring and medical treatment and surgery. Components, devices and systems including: waveguides sensors, lab-on-chip, light delivery devices, passive fibers, bright sources such as fiber lasers and supercontinuum generation, bundles and detectors. These are essential elements needed to perform biological and clinical laboratories and in-vivo medical procedures for the 21st century. This conference will cover various topics in these fields.

The conference will cover the following topics:

- theory and simulations of fibers and sensors.
- fiber and sensors design and fabrication.
- minimal invasive, non-invasive and Invasive applications.
- fibers for Theranostics.
- imaging bundles.
- biosensors for the medicine and biology.
- fiber sensors for physical, chemical, and biological applications.
- fibers covering an increasing number of laser output wavelengths – such as quantum cascade lasers, ultrafast lasers, X-ray lasers, and fiber lasers.
- short and energetic pulse delivery.
- smart surgical tools.
- photonic bandgap fibers.
- surgical and diagnostic procedures based on optical fibers and waveguides
- fiber based methods and systems
- safety, bio-compatibility and mechanical properties of fiber materials.
- sensors for smart medical home.
- sensors for remote rural areas.
- fiber systems for robotic applications.
- trans-endoscopic optical methods such as optical coherent tomography (OCT), confocal, Bragg sensing.
- feedback methods and systems for diagnostic and treatment optimization.
- fiber based welding and tissue soldering.
- hybrid sensors.

The aim of the conference is to bring together researchers, scientists, engineers, clinicians, industrialists, entrepreneurs and students belonging to different disciplines who have a common interest in the development and use of optical sensing and fiber-based techniques and methodologies. We aim to create a synergistic environment for discussion and growth of the field.

The conference puts a strong emphasize on translation research as well commercialization. A special industry session will be incorporated.

The conference subject is particularly suitable to obtain the right balance among the various disciplines. To this aim, the papers should report on both technical and biomedical advances. Contributions focusing on the development of fibers, endoscopic delivery, and diagnostic systems sensing methods for applications in all biomedical areas are solicited.

# 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

Abstract submission deadline	11 August 2021
Author notification	11 October 2021
Submission system opens for presentations and manuscripts*	29 November 2021
Manuscript due date	29 December 2021
Oral presentation videos due	29 December 2021
Poster PDF and preview videos due	29 December 2021
Oral presentation slide deadline	20 January 2022

\*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/bo305call](http://www.spie.org/bo305call)
- 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 photonics 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, and may not be published for online viewing during the event.
- 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.
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- More publication information available on the [SPIE Digital Library](http://www.spiedigitallibrary.org)

# ABSTRACT SUBMISSION GUIDELINES

## SYMPOSIUM CHAIRS



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