

**SPIE. PHOTONICS
WEST
BIOS**
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 The Moscone Center
 San Francisco, CA, USA

 Submit abstracts by
11 August 2021


Biomedical Vibrational Spectroscopy 2022: Advances in Research and Industry (BO309)

Conference Chair: **Zhiwei Huang**, National Univ. of Singapore (Singapore)

Program Committee: **Andrew J. Berger**, Univ. of Rochester (United States); **Rohit Bhargava**, Univ. of Illinois at Urbana-Champaign (United States); **Niels Kröger-Lui**, Ruprecht-Karls-Univ. Heidelberg (Germany); **Anita Mahadevan-Jansen**, Vanderbilt Univ. (United States); **Airton Abrahão Martin**, Univ. Brasil (Brazil); **Michael D. Morris**, Univ. of Michigan (United States); **Dieter Naumann**, Robert Koch-Institut (Germany); **Jürgen Popp**, Institut für Photonische Technologien e.V. (Germany); **Nicholas Stone**, Gloucestershire Royal Hospital (United Kingdom)

Vibrational spectroscopy provides molecular specific information that has long been used in the field of biochemistry. Technical advances in the last decade have led to the application of vibrational spectroscopy to address many biological and biomedical problems. In particular, NIR and mid-IR absorption as well as Raman spectroscopy have received tremendous interest in biomedicine. Furthermore, special techniques such as SERS, CARS, TERS, or even MIR-laser spectroscopy have begun dedicating a lot of attention to the application in biology and medicine. The fingerprint nature of all of these techniques allows precise analysis of biological materials that can be used for applications ranging from the macroscopic to the micro and sub-microscopic levels. The development of diode lasers and novel designs of fiber optic probes have led to the potential of applying these techniques in vivo.

This year's conference will be organized based on medical or biological systems rather than techniques to facilitate cross-fertilization of solutions to problems in implementation. Where feasible, the specific sessions will be co-localized with the specific clinical conference to ensure increased awareness of vibrational spectroscopy by clinicians. This year's conference will focus on bringing together a variety of different fields wherein vibrational spectroscopy has played a powerful role in their development for a specific application. We would like to particularly encourage the participation of molecular processes community to foster interactions with the researches active in the field of tissues and cells. An added agenda will be interaction between research and industry and the synergy therein.

This call solicits abstracts in biomedical applications of vibrational spectroscopy as well as new discoveries in its implementation. This conference will encompass methodologies that probe vibrational energies at tissue, cell, sub-cellular and molecular levels.

Such modalities include but are not confined to:

- conventional Raman spectroscopy
- spatially offset Raman spectroscopy (SORS)
- Raman microscopy and microspectroscopy
- surface enhanced Raman spectroscopy (SERS)
- coherent anti-Stokes Raman spectroscopy (CARS)
- Tip-enhanced Raman spectroscopy (TERS)
- NIR and MIR spectroscopy
- NIR and MIR microscopy and microspectroscopy
- Mid-IR and THz laser spectroscopy.

The techniques may be applied in biology as well as medicine.

Potential areas of applications include but are not confined to:

- histopathology
- cytology
- tissue and cellular probes and processes
- sub-cellular and molecular probes and processes
- protein and DNA analysis
- pharmacology
- analysis of biological fluids such as blood
- infectious agents
- disease identification
- guidance of therapy
- microbiology.

Sessions will be organized according to medical application areas such as neurology, dermatology, endocrinology etc. and supplemented by a technical session.

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/bo309call
- 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.
- SPIE partners with relevant scientific databases to enable researchers to find the papers in the Proceedings of SPIE easily. The databases that abstract and index these papers include Astrophysical Data System (ADS), Ei Compendex, CrossRef, Google Scholar, Inspec, Scopus, and Web of Science.
- More publication information available on the [SPIE Digital Library](http://www.spiedigitallibrary.org)

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