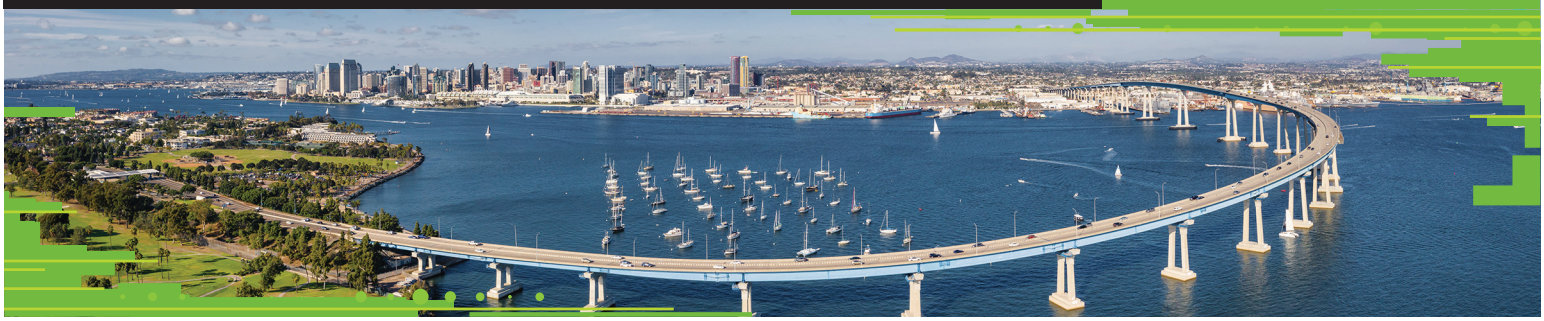
CALL FOR PAPERS

SPIE. OPTICS+ PHOTONICS
OPTICAL ENGINEERING + APPLICATIONS

18 - 22 August 2024
San Diego Convention Center
San Diego, California, United States

Submit abstracts by
7 February 2024



Interferometry and Structured Light 2024 (OP323)

Conference Chairs: **Michael B. North-Morris,** 4D Technology Corp. (United States); **Katherine Creath,** Optineering (United States), The Univ. of Arizona (United States); **Song Zhang,** Purdue Univ. (United States)

Conference Co-Chairs: **Rosario Porras-Aguilar,** The Univ. of North Carolina at Charlotte (United States); **Maciej Trusiak,** Warsaw Univ. of Technology (Poland)

Program Committee: **Astrid Aksnes,** Norwegian Univ. of Science and Technology (Norway); **Armando Albertazzi Gonçalves Jr.,** Univ. Federal de Santa Catarina (Brazil); **Gastón A. Ayubi,** Stanford Univ. School of Medicine (United States); **Brent C. Bergner,** Onto Innovation Inc. (United States); **Jan Burke,** Fraunhofer-Institut für Optronik, Systemtechnik und Bildauswertung IOSB (Germany); **Romita Chaudhuri,** ASML (United States); **James H. Clark III,** U.S. Naval Research Lab. (United States); **Peter J. de Groot,** Zygo Corporation (United States); **Nicholas Devaney,** Univ. of Galway (Ireland); **Konstantinos Falaggis,** The Univ. of North Carolina at Charlotte (United States); **Marc P. Georges,** Liège Univ. (Belgium); **Goldie L. Goldstein,** Nikon Research Corp. of America (United States); **Ulf Griesmann,** National Institute of Standards and Technology (United States); **Daewook Kim,** Wyant College of Optical Sciences (United States); **Beiwen Li,** Iowa State Univ. of Science and Technology (United States); **Amalia Martínez-García,** Centro de Investigaciones en Óptica, A.C. (Mexico); **Kate Medicus,** Ruda-Cardinal, Inc. (United States); **Daniel B. Millstone,** 4D Technology Corp. (United States); **Artur G. Olszak,** Apre Instruments, Inc. (United States); **Yukitoshi Otani,** Utsunomiya Univ. (Japan); **Joanna Schmit,** 4D Technology Corp. (United States); **Adam R. Styk,** Warsaw Univ. of Technology (Poland); **James D. Trolinger,** MetroLaser, Inc. (United States); **Christopher C. Wilcox,** Air Force Research Lab. (United States)

This long standing and well-attended conference features interferometry, structured light, and and optical metrology techniques and applications. The techniques enable non-contact inspection of a wide range of objects from macro-scale to nano-scale, and surface finishes from super-polished to structured or randomly rough. Applications in research laboratories, industrial manufacturing, and standardization institutes that rely on the precision, reliability, and flexibility of these techniques steer the industry toward new horizons. For example, applications in new technologies such as creating sustainable product using new materials, MEMS/MOEMS, biomedical devices and light weighted segmented mirrors have pushed the field toward ever more challenging new solutions. These new developments have greatly impacted the science of optical measurements and instruments.

Authors with topics related to interferometry, structured light, and optical metrology are encouraged to submit contributions to this conference. This conference is expected to receive 40-60 papers covering the latest advances in areas relating to techniques and applications of interferometry and fringe analysis methods. Recent progress and next-generation developments will be highlighted. Invited talks will be included with regular conference talks and poster presentations. The meeting will encompass 2-3 days and avoid parallel sessions. In addition, sufficient time will be allotted for visiting the poster sessions and exhibits.

Submission Instructions:
This conference gives acceptance priority to authors who submit an extended abstract of their work.

This extended abstract must be submitted as a supplemental file during the abstract submission process. This file must be a PDF using the SPIE template of 2-3 pages. It should clarify the novelty of the work being presented and may include figures, test results, and references.

We expect all presenters to prepare more extended proceedings manuscripts by the manuscript deadline as a requirement to present an oral presentation at the meeting. All manuscripts will be peer reviewed. Exceptions will be considered on a case-by-case basis.

Manuscript guidelines:
https://spie.org/OP/Manuscript-Submission-Guidelines

Papers are solicited on the following and related topics:

1. ADVANCED MEASUREMENT TECHNIQUES:
- Active and real-time measurement systems
- Atom interferometry
- Calibration and standardization methods
- Digital holography and speckle techniques
- Fringe analysis techniques
- Grating and grid (moiré) methods
- Interferometric fiber optic sensors
- Phase measurement techniques
- Polarization and geometric-phase techniques
- Shearing interferometry and other gradient methods
- White light interferometry and optical coherence tomography

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2. INDUSTRIAL METROLOGY AND QUALITY CONTROL:
- Automotive, aerospace, and other industrial applications
- Automated measurements
- Freeform, mid-spatial frequency, and roughness measurement
- High-speed 3D metrology
- MEMS/MOEMS reliability analysis, assembly, and packaging testing
- Nondestructive testing and failure analysis
- Stress and strain analysis
- Surface profiling
- Thin-film metrology
- X-ray and high-energy optics characterization

3. BIOMEDICAL AND LIFE SCIENCES APPLICATIONS:
- Bio-interferometry to measure and image cells and tissues
- Biological and pharmaceutical applications
- Nano-metrology
- Optical projection tomography techniques

4. ASTRONOMY AND SPACE OPTICS:
- Astronomical and adaptive optics through micro optics testing
- Gravitational wave interferometry
- Terahertz techniques and applications

5. CROSS-SCALE MEASUREMENTS AND INTEGRATION:
- Distance and shape measurements across multiple scales
- Interaction between modeling, simulation, and experiments
- Integrated optical interferometry
- Materials, structural analysis, and testing
- Semiconductor wafer inspection, photolithography mask metrology, and inspection

6. EMERGING INTERDISCIPLINARY AREAS:
- High-speed 3D metrology
- Intelligent metrology systems
- Sustainable product metrology
- Machine Learning
- Materials, structural analysis, and testing
- Tunable wavelength, spectral interferometry, and wavelength-dependent methods
- to 1/∞ and beyond.

We will have a "Fringe Art" Competition: Bring your favorite fringe pattern to display.

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Present your research at SPIE Optics + Photonics

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.

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ABSTRACT SUBMISSION GUIDELINES

Important dates

Abstracts due	7 February 2024
Registration opens	April 2024
Authors notified and program posts online	29 April 2024
Submission system opens for manuscripts and poster PDFs*	17 June 2024
Poster PDFs due for spie.org preview and publication	24 July 2024
Manuscripts due	31 July 2024
Advance upload deadline for oral presentation slides**	16 August 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

- 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. extended abstract PDF upload for review 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/op323call**
- 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

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

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 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
- Conference chair/editor decision to accept or reject a manuscript, presentation, or poster for publication is final
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- SPIE partners with relevant scientific databases and indexes to enable researchers to easily find papers published in the Proceedings of SPIE. 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 **SPIEDigitalLibrary.org**

Contact information

For questions about your presentation, submitting an abstract, or the meeting, contact your Conference Program Coordinator.

OPTICAL ENGINEERING + APPLICATIONS 2024 PROGRAM TRACK CHAIRS

Optical Design
José Sasián, Wyant College of Optical Sciences (USA)

Optical Alignment, Testing, and Fabrication
H. Philip Stahl, NASA Marshall Space Flight Ctr. (USA)

Signal, Image, and Data Processing
Khan Iftekharuddin, Old Dominion Univ. (USA)

Photonic Devices and Applications
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