



Optical Manufacturing and Testing 2024 (OP322)

Conference Chairs: **Daewook Kim**, Wyant College of Optical Sciences (United States); **Heejoon Choi**, Wyant College of Optical Sciences (United States), Large Binocular Telescope Observatory (United States); **Heidi Ottevaere**, Vrije Univ. Brussel (Belgium)

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This conference is dedicated to the technologies for manufacturing and testing optical surfaces and components. Papers should show developments in processes, technologies, or equipment used for optical fabrication or measurement. Contributions that share lessons learned from recent projects are particularly desired.

Papers are specifically requested on:

CURRENT AND FUTURE APPLICATION REQUIREMENTS

- optics for lithography
- space and cryogenic optics
- freeform, steep, and conformal optics
- telescopes and large optics
- renewable energy optics
- light-weight and flexible substrates
- deformable and active mirrors
- micro-optics
- high-power optics
- x-ray and synchrotron optics
- polarization optics.

ADVANCES IN MANUFACTURING MATERIALS, ABRASIVES, TOOLS, MACHINES, AND PROCESSES

- new materials for optics
- computer controlled processes, CCOS-computer controlled optical surfacing
- diamond turning
- ion/plasma/water-jet removal
- precision machining of optics
- mass production of optical components and systems grinding and polishing
- molding for glass or plastic, from mass production to high precision
- renewable energy optics manufacturing
- technologies for replicating optical surfaces
- additive manufacturing, 3D printing and material deposition
- coating

- assembling optical systems
- optical contacting/advanced bond methods
- advanced surfacing and finishing technologies
- IoT in optics production.

NEW DEVELOPMENTS AND TOPICS IN OPTICAL TESTING OF FIGURE/WAVEFRONT AND FINISH

- applied interferometry, holography, and speckle
- applications: phase-measuring, spatial heterodyne, and static fringe analysis
- absolute calibration: flats, spheres, windows, etc.
- measurement of aspheres and freeforms
- metrology for renewable energy optics
- diffractive null correctors
- geometric-ray tests
- wavefront sensors
- MTF and encircled energy
- figure, ripple, and roughness - power spectral density
- mid-spatial-frequency errors on surfaces: detection, characterization, effects, and mitigation
- high spatial resolution methods
- testing in adverse environments: vibration, atmosphere, cryogenic, vacuum, etc.
- subsurface damage: detection, characterization, effects, and mitigation
- surface profilometry: optical and scanning probe
- scatter and BRDF (bidirectional reflectance distribution function)
- metrology for digital optics for applications such as AR/VR/MR
- AI and machine learning for optical metrology.

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.

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/op322call
- 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

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- 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
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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

Ruyan Guo, The Univ. of Texas at San Antonio (USA)

Remote Sensing and Atmospheric Propagation

Stephen Hammel, Naval Information Warfare Ctr. Pacific (USA)

Alexander M. J. van Eijk, TNO Defence, Security, and Safety (Netherlands)

X-Ray, Gamma-Ray, and Particle Technologies

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