



## Optical System Alignment, Tolerancing, and Verification XV (OP321)

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The topics of tolerancing, alignment, and verification are crucial in the development of successful optical systems. The effective assembly of optical systems requires alignment of different system components. The precision level of the alignment depends on the assigned tolerance error budget, and so alignment and tolerances are interrelated. Verification involves validating optical system performance, including assurance of performance under a variety of operating conditions.

This conference seeks to further the state-of-the-art in alignment and tolerancing, including verification of subsystems and at the system level, by providing a forum where these essential topics can be discussed. The conference also seeks to provide the audience with past and current useful insights in these topics. Climate change optical instrumentation requires alignment; this conference pursues sustainability in related alignment topics. We expect the 2024 conference to continue offering substantial valuable technical information and networking to both authors and audience. Prospective authors and attendees are invited to gauge the breadth and depth of the conference by perusing the fourteen previous volumes of the conference proceedings available through SPIE.

### 1. ALIGNMENT OF SYSTEMS AND COMPONENTS

- Theories of alignment and tolerancing
- Pupil alignment in concatenated systems
- Alignment techniques, equipment, and tools
- Development of algorithms for alignment
- Alignment in traditional lens systems and telescopes
- Alignment of coherent and high-power optical systems
- Optical alignment of fiber optics, micro-optics and nanostructures
- Optomechanical alignment
- Alignment and tolerancing of aspheres and freeforms
- Active optical system alignment
- Optical tooling.

### 2. TOLERANCING OF SYSTEMS

- Approaches to tolerancing and error budgets
- Lens desensitization
- Manufacturing error distributions.

### 3. VERIFICATION OF SYSTEMS

- Algorithms for alignment and system verification
- System verification approaches
- Tools and techniques for verification.

### 4. MODELING AND CASE STUDIES

- Tutorials on alignment, tolerancing, and/or verification
- Case studies
- Alignment pitfalls.

## 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/op321call](http://www.spie.org/op321call)
- 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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