

Digital Optical Technologies 2021

CALL FOR PAPERS

Submit abstracts by 6 January 2021

21-24 June 2021

Internationales Congress Center
Munich, Germany

spie.org/dot21call

JUNE 20-24, 2021, MESSE MÜNCHEN

25th International Congress on Photonics in Europe—
co-located with LASER World of PHOTONICS 2021

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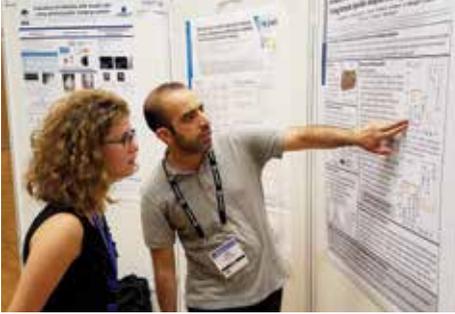
A conference focused on the components, systems design, and applications of emerging digital optical technologies in all social, academic, medical, and industrial areas.

TECHNOLOGIES

- Digital optics for display, imaging and sensing
- AI and computational display, imaging and sensing
- Immersive display technologies (AR, VR, MR)
- Novel sensors for self driving cars and IOTs

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6 JANUARY 2021

Plan to Participate



Take this opportunity to share your research at SPIE Digital Optical Technologies, a conference dedicated to emerging digital trends and perspectives in optics. Come to Munich to meet with users and researchers to discuss the latest developments in the field of digital optics.

The symposium will highlight all digital aspects from design, fabrication, to integration in systems and final functionality, such as:

IN DESIGN: numerical algorithms, Artificial Intelligence and Deep Neural Networks to help design novel optics from macroscopic (freeform optics) to nanoscopic scales (metamaterials, plasmonics, and more).

IN FABRICATION: novel digital lithography, freeform mold diamond turning and additive/subtractive manufacturing techniques and technologies.

IN FUNCTIONALITY: computational techniques to enhance functionality in imaging, display and sensing, including digital switching, tuning and reconfiguring to alter optical functionality dynamically.

Colocated with Laser 2021 in Munich, Germany, this new symposium aims at combining all three aspects of digital optics around the following topics:

- Novel displays, optics and optical architectures for smart glasses, Augmented, Mixed and Virtual Reality systems
- Novel optical sensing systems for self driving cars and IOTs
- Computation optics and AI algorithms for display, imaging, and sensing
- Switchable, tunable, and digitally reconfigurable optics

These are emerging today as very hot topics in academia, research institutions, industry and consumer devices. Researchers, engineers, managers, industry leaders as well as market analysts are welcome to share their knowledge and experience, and be part of the ongoing digital optics revolution.

Come and experience first-hand hot new consumer products demoed throughout the symposium, such as smart glasses, Mixed Reality and Virtual Reality headsets.

Learn about recent advance/s in using digital technologies to enhance the performance of optical imaging, display and sensing. Find out about new approaches that push digital principles at the macro-, micro-, and nanoscales to the forefront of optics. Exchange new ideas, address your shared concerns, and get access to information not yet published in the mentioned topical areas. Share your research with other engineers, scientists and researchers.

Presentations will be permanently archived in the SPIE Digital Library, and made available to others in the international scientific community, who seek to learn, make discoveries, and innovate. We invite you to join your colleagues and share the most recent developments and applications at SPIE Digital Optical Technologies.

DIGITAL OPTICAL TECHNOLOGIES III

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Digital Optical Technologies III

Optics and photonics, similarly to their electronics counterpart, have slowly but steadily migrated from an analog age to a digital age. The term 'digital' refers not only to the end functionality as it does in 'digital electronics,' but also to the way they are designed, fabricated and integrated within systems:

- Numerical algorithms allow design of nonconventional optics from macroscopic (freeform optics) to nanoscopic scales (metasurfaces, photonic crystals, plasmonics, and more).
- Novel wafer scale lithography techniques, freeform diamond turning and additive optical manufacturing processes allow for their mass production.
- Dynamic behavior is a key feature of digital optics, such as in switchable, tunable, and reconfigurable elements.
- Digital techniques enhance their functionality, as with computational imaging, display or sensing.

This conference aims at combining all aspects of digital optics around the five following topics. These topics are gaining today massive interest in academia, research institutions, defense, industry and consumer systems.

NOVEL OPTICS FOR AUGMENTED, MIXED AND VIRTUAL REALITY SYSTEMS (AR, MR, VR)

- novel optics for imaging, display and sensing in compact AR/VR/MR systems
- technologies and techniques to improve visual comfort in binocular near to eye displays
- optics, displays and optical architectures matched to the human visual perception system.

DIGITAL OPTICS FOR IMAGE FORMATION

- LCOS, Micro-OLED, DLP and micro i-LED display technologies for AR and VR
- novel holographic and lightfield display technologies
- novel laser and LED scanning display engines.

COMPUTATIONAL OPTICS FOR DISPLAY, IMAGING AND SENSING

- computational imaging and display techniques and technologies
- single pixel, lensless and integral flat imaging and sensing devices
- compression technologies for holographic and lightfield displays and standardization of such.

SWITCHABLE, TUNABLE AND DIGITALLY RECONFIGURABLE OPTICS

- dynamic vision impairment correction
- dynamic digital optics for varifocal, multifocal, light fields and holographic display
- tunable optics to enhance visual comfort (VAC mitigation, pupil steering, optical foveation, and more).

DIGITAL OPTICS FOR SENSING

- compact gaze, eye and pupil tracking, iris recognition systems and algorithms
- 3D depth cameras for spatial mapping
- novel sensors for head and hand tracking (optical and non-optical).

Submit your abstract today: spie.org/dot21call

GENERAL INFORMATION

TECHNICAL PROGRAMME

Available March 2021

The comprehensive Advance Technical Programme for this symposium will list conferences, paper titles, and authors in order of presentation; an outline of all planned special events; and hotel and registration information.

REGISTRATION

Available Online March 2021

All participants, including invited speakers, contributed speakers, session chairs, co-chairs, and committee members, must pay a registration fee.

Fee information for conferences, courses, a registration form, and technical and general information will be available on the SPIE website in March 2021.

HOTEL RESERVATIONS

Hotel Booking information will be available online at the Laser World of Photonics 2021 website.

VISA INFORMATION

Attendees from certain countries may not require a visa to enter Germany. For more details, please visit the website of the German Foreign Office, which will list the point of information within your country.

LETTERS OF INVITATION

FOR CONFERENCE CHAIRS, TECHNICAL COMMITTEE MEMBERS, AND AUTHORS: If you are listed as an author on a paper, or as a participant in the programme, and you require an Official Invitation Letter for visa application purposes, please look for the instructions published at the Digital Optical Technologies website www.spie.org/dot following the Digital Optical Technologies 2021 acceptance notifications on 26 February 2021.

NOTE: We recommend that you secure your travel visa before registering for the conference as cancellations after the preregistration cutoff may result in a cancellation fee.

Save the date

ABSTRACTS DUE:

6 January 2021

AUTHOR NOTIFICATION:

26 February 2021

The contact author will be notified of acceptance by email.

MANUSCRIPT DUE DATE*:

14 April 2021

PLEASE NOTE: Submissions imply the intent of at least one author to register, attend the conference, present the paper as scheduled, and submit a manuscript for publication in the conference proceedings.

Submit your abstract today: spie.org/dot21call

ABSTRACT SUBMISSION

By submitting an abstract, I agree to the following conditions:

AN AUTHOR OR COAUTHOR (INCLUDING KEYNOTE, INVITED, ORAL, AND POSTER PRESENTERS) WILL:

- An author or coauthor (including keynote, invited, and solicited speakers) will register at the reduced author registration rate, attend the meeting, and make the presentation as scheduled (Current SPIE Members receive an additional discount on the registration fee).
- Authors and coauthors attending the meeting will obtain funding for their registration fees, travel, and accommodations, independent of SPIE, through their sponsoring organisations before submitting abstracts.
- All clearances, including government and company clearance, have been obtained to present and publish. If you are a DoD contractor, allow at least 60 days for clearance.
- Please submit a **500-word text abstract** for technical review purposes that is suitable for publication. Accepted abstracts may be published with the printed Technical Programme for distribution at the meeting.
- Please also submit a **300-word text abstract** suitable for early release. If accepted, this abstract text will be published prior to the meeting in the online or printed programmes promoting the conference.
- A manuscript (6 pages minimum; 20 pages maximum) for any accepted oral or poster presentation will be submitted for publication in the Proceedings of SPIE in the SPIE Digital Library.

SUBMIT AN ABSTRACT AND SUMMARY ONLINE AT:

<http://www.spie.org/dot21call>

- Have all contact information (full names, affiliations, addresses, phone numbers, and emails) for your coauthors ready.
- To provide the research community with enhanced access to information presented at SPIE conferences, SPIE will record the audio plus screen content of oral presentations and, with author permission only, will publish the recordings on the SPIE Digital Library. When submitting an abstract, you will be asked to respond to the permission request.
- Only original material should be submitted.
- Abstracts should contain enough detail to clearly convey the approach and the results of the research.
- Commercial papers, papers with no new research/development content, and papers where supporting data or a technical description cannot be given for proprietary reasons will not be accepted for presentation in this conference.
- Please do not submit the same, or similar, abstracts to multiple conferences.

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- If you have already chosen a conference to submit to, return to the previous page and click the “Submit an abstract” link.
- If you haven’t yet chosen a conference to submit to, browse to locate a conference from the link at: <http://spie.org/dot>. Once you choose a conference, click “submit an abstract” from the conference call for papers.
- You will be prompted to sign in to the spie.org system and follow the submission wizard. If you have a spie.org account, sign in using your username and password. First-time users of spie.org can create a new account by clicking on the “create new account link.”

REVIEW, NOTIFICATION, PROGRAMME PLACEMENT

- To ensure a high-quality conference, all abstracts and Proceedings manuscripts will be reviewed by the Conference Chair/Editor for technical merit and suitability of content. Conference Chair/Editors may require manuscript revision before approving publication, and reserve the right to reject for presentation or publication any paper that does not meet content or presentation expectations. SPIE’s decision on whether to accept a presentation or publish a manuscript is final.
- The contact author will be notified of abstract acceptance and sent manuscript instructions by e-mail no later than **26 February 2021**.
- Final placement in an oral or poster session is subject to the Chairs’ discretion. Instructions for oral and poster presentations may be found from the “For Authors/Presenters” link on the event page, spie.org/dot21call.

INFORMATION ON THE PROCEEDINGS OF SPIE IN THE SPIE DIGITAL LIBRARY

- Full-manuscripts will be Chair/Editor-reviewed and published in the Proceedings of SPIE in the SPIE Digital Library.
- Manuscript instructions will be emailed to the contact author and are also available from the “For Authors/ Presenters” link on the conference website.
- Authors must be authorized to transfer copyright of the manuscript to SPIE, or provide a suitable publication license.
- Only papers presented at the conference and received according to publication guidelines and timelines will be published in the conference Proceedings in 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 Conference Proceedings Citation Index. Inspec, Scopus, and Web of Science Conference Proceedings Citation Index.

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