SPIE. DIGITAL OPTICAL TECHNOLOGIES

Digital Optical Technologies 2019

CALL FOR PAPERS

Submit abstracts by 9 January 2019

24–27 June 2019
Internationales Congress Center
Munich, Germany

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JUNE 23–27, 2019, MESSE MÜNCHEN

24th International Congress on Photonics in Europe—collocated with LASER World of PHOTONICS 2019

WORLD OF PHOTONICS CONGRESS

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Present your research in Munich

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 immersive displays (AR,VR,MR, smart glasses)
- Digital image formation devices (micro displays, scanners, ...)
- Digital optics for 3D display
- Computational imaging/sensing
- Digital optics for sensing and metrology
- Switchable, tunable and reconfigurable optics

Submit Abstracts by
9 JANUARY 2019

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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:

DESIGN: numerical algorithms to help design novel optics from macroscopic (freeform optics) to nanoscopic scales (metamaterials, plasmonics,...).

FABRICATION: novel digital lithography and freeform mold diamond turning techniques and technologies.

FUNCTIONALITY: computational techniques to enhance functionality in imaging and display. Digital switching, tuning, and reconfirguring to alter optics functionality dynamically.

Collocated with Laser 2019 in Munich, Germany, this symposium aims at combining all three aspects of digital optics around the following topics:

- **Novel optics for Augmented, Mixed and Virtual Reality systems**
- **Digital optics for image formation**
- **Computational optics for display and imaging**
- **Switchable, tunable, and digitally reconfigurable optics**
- **Digital optics for sensing**

These are emerging today as very hot topics in academia, research institutions, and industry, as well as in the venture capital community. 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 Mixed Reality (Microsoft Hololens) and Virtual Reality (Oculus and HTC Vive) headsets.

Learn about recent advances in using digital technologies to enhance the performance of optical imaging and display. 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, researchers, and managers.

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.

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CONFERENCE DOT101

Digital Optical Technologies

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 in systems:

a) Numerical algorithms help design non-conventional optics from macroscopic (freeform optics) to nanoscopic scales (metasurfaces, plasmonics...).

b) Binary or grey scale lithography techniques and freeform mold diamond turning allow for mass production.

c) Digital techniques enhance their functionality, as in computational imaging or display. Digital switching alter their functions, as in switchable, tunable and reconfigurable optics.

This conference aims at combining all three aspects of the **digital optics realm** around the four following topics. These topics are gaining today massive interest in academia, research institutions, industry (including consumer electronics), as well as in the Venture Capital investment field.

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

- novel optics for compact imaging, optical combining and eyebox generation
- technologies to mitigate Vergence/ Accomodation Conflict (VAC)
- foveated rendering technologies and algorithms
- dimming technologies and pixel occlusions.

DIGITAL OPTICS FOR IMAGE FORMATION

- LCOS, Micro-OLED, DLP and i-LED micro-display technologies
- technologies and algorithms for dynamic holographic projection
- MEMS and fiber scanner display engines.

COMPUTATIONAL OPTICS FOR DISPLAY AND IMAGING

- computational imaging and display
- single pixel, lensless and integral imaging cameras
- digital holography systems and algorithms.

SWITCHABLE, TUNABLE AND DIGITALLY RECONFIGURABLE OPTICS

- dynamic vision correction
- tunable optics for varifocal, multifocal, light fields, holographic display
- tunable optics to generate enhanced visual comfort (VAC mitigation)
- dynamic aberration control in imaging systems.

DIGITAL OPTICS FOR SENSING

- compact eye tracking systems and algorithms
- 3D depth cameras and 3D sensors systems
- optical gesture sensing and integrated motion sensors.
- optical biometric authentication systems.

Save the date

ABSTRACTS DUE:
9 January 2019

AUTHOR NOTIFICATION:
26 February 2019
The contact author will be notified of acceptance by email.

MANUSCRIPT DUE DATE*:
17 April 2019

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.

GENERAL INFORMATION

TECHNICAL PROGRAMME

Available March 2019

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 2019

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 2019.

HOTEL RESERVATIONS

Hotel Booking information will be available online at the Laser World of Photonics 2019 website.

VISA INFORMATION

Attendees from certain countries may not require a visa to enter Germany. For more details, please visit our information page: spie.org/dot-visa or 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 2019 acceptance notifications on 26 February 2019.

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.

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 organizations 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 Program 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 programs 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.

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http://www.spie.org/dot19call

- Have all contact information (full names, affiliations, addresses, phone numbers, and emails) for your coauthors ready.
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- 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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- 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 2019**.
- 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.

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- Authors must be authorized to transfer copyright of the manuscript to SPIE, or provide a suitable publication license.
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