



Ultrafast Phenomena and Nanophotonics XXVI (OE105)

Conference Chairs: **Markus Betz**, Technische Univ. Dortmund (Germany); **Abdulkhem Y. Elezzabi**, Univ. of Alberta (Canada)

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This conference covers ultrafast phenomena in bulk semiconductors, semiconducting and metallic nanostructures and devices with emphasis on ultrafast optical and/or coherent phenomena. Manuscripts are solicited in the following topics but not restricted to:

ULTRAFAST DYNAMICS IN SEMICONDUCTORS AND HETEROSTRUCTURES

- carrier-carrier, carrier-phonon interactions
- polariton dynamics in microcavities
- ultrafast acoustic phenomena.

COHERENT DYNAMICS OF OPTICAL EXCITATIONS

- excitonic coherences and exciton dynamics
- quantum interference effects
- four-wave mixing, two-dimensional spectroscopy.

NON-LINEAR OPTICAL EFFECTS

- optical frequency conversion
- multi-photon processes, high-field physics
- high harmonic generation, attosecond physics
- nonlinear and ultrafast processes at surfaces and interfaces.

NON-EQUILIBRIUM CARRIER TRANSPORT

- ballistic carrier transport
- tunneling phenomena
- Bloch oscillations.

ULTRAFAST PHENOMENA CARBON NANOMATERIALS

- dynamics in graphene and carbon nanotubes
- graphene plasmonics
- carbon-based quantum dots.

ULTRAFAST PHENOMENA IN MONOLAYER SEMICONDUCTORS

- nonlinear and dynamical processes in transition metal dichalcogenides (TMDs)

- optics in silicene, germanene and black phosphorus
- novel emerging 2D materials.

SPIN DYNAMICS AND SPIN MANIPULATION

- ultrafast optical spin manipulation
- spin coherence and relaxation
- ultrafast magnetism
- spin injection and transport.

ULTRAFAST PLASMONICS

- active plasmonics
- THz plasmonics
- ultrafast dynamics in metallic nanostructures.

THZ SPECTROSCOPY

- THz wave generation
- field-resolved techniques
- THz time-domain spectroscopy
- strong-field THz physics.

ULTRAFAST PROCESSES IN DEVICES AND LASERS

- ultrafast optical switching
- wavelength conversions
- gain dynamics in lasers and amplifiers.

ULTRAFAST NANO-OPTICS

- nanoemitters, nanoantennae
- nanolocalization of optical fields
- coherent control in nanostructures
- semiconductor quantum dots and wires
- single-photon sources
- applications for quantum information processing.

ULTRAFAST OPTICAL PROPERTIES OF METAMATERIALS

- photonic and phononic crystals
- metal-semiconductor hybrid structures
- negative-index materials
- epsilon-near-zero materials
- metatronics.

ULTRAFAST QUANTUM ELECTRONICS

- quantum dots in resonators
- quantum entanglement
- color centers in wide bandgap materials
- single photon sources.

ULTRAFAST PHOTOCURRENTS

- bulk material ultrafast phenomena
- ultrafast microscopy.

BEST STUDENT PAPER AWARDS

All contributed papers of conference OE105 given by a young scientist (PhD student or postdoc within the first two years after graduation) are eligible for the award. Note that this award is for contributed papers only. Invited papers and contributions to other symposia do not qualify. To facilitate handing out the award during the meeting, applications will be collected prior to the meeting. To qualify for the award, applicants must:

- be a young scientist (PhD student or postdoc within the first two years after graduation)
- be listed as a contributing author (not invited) on an accepted paper within conference OE105
- have conducted the majority of the work to be presented
- submit your manuscript online by 29 December 2021
- present your paper as scheduled
- be present at the Awards Ceremony.

To Apply, qualified applicants must submit:

- slides of presentation (Powerpoint or PDF document)
- additional information about the scientific content of the presentation
- date of graduation if you have already completed your PhD.

The presentation and the supplementary material should be sent via email to Prof. Markus Betz (please include your SPIE paper number) by **3 January 2022**.

Present your research at SPIE Photonics West

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

Abstract submission deadline	11 August 2021
Author notification	11 October 2021
Submission system opens for presentations and manuscripts*	29 November 2021
Manuscript due date	29 December 2021
Oral presentation videos due	29 December 2021
Poster PDF and preview videos due	29 December 2021
Oral presentation slide deadline	20 January 2022

*Authors must register prior to uploading.

What you will need to submit

- Title
- Author(s) information
- 250-word abstract for technical review
- 100-word summary for the program
- Keywords used in search for your paper (optional)
- Check the individual conference Call for Papers for additional requirements (for example, some conferences require 2- to 3-page extended summary for technical review, or have 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/oe105call
- 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.
- If your submission is related to an application track below, indicate the appropriate track when prompted during the submission process.

Application track

- **Brain:** Papers that describe the development of innovative technologies that will increase our understanding of brain function.
- **Translational Research:** Papers that showcase the latest photonics technologies, tools, and techniques with high potential to impact healthcare.
- **3D Printing:** Papers that showcase innovative ways to apply this multidimensional/multidisciplinary technology.
- **COVID-19 Research:** Papers that illustrate the creativity and breadth of the optics and photonics community's response to the COVID-19 pandemic.

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: Submit a presentation video by the advertised due date, or agree to the presentation capture of your presentation on site, for online conference viewing during the event and publication in the Proceedings of SPIE on the SPIE Digital Library.
- Poster Presenters: Submit a Poster PDF and optional preview video by the advertised due date, for online conference viewing during the event and publication in the Proceedings of SPIE on the SPIE Digital Library.
- Submit a 4-page-minimum manuscript by the advertised due date, for online conference viewing during the event and publication in the Proceedings of SPIE on the SPIE Digital Library.
- Obtain funding for registration fees, travel, and accommodations, independent of SPIE, through their sponsoring organizations.
- Ensure that all clearances, including government and company clearance, have been obtained to present and publish. If you are a DoD contractor in the USA, allow at least 60 days for clearance.
- 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

- SPIE will publish all presentations for viewing during the conference, as well as permanently archive all presentations in the conference proceedings on the SPIE Digital Library.
- SPIE retains rights to distribute and market the official SPIE recording of the presentation, presentation video, and/or poster.
- Most SPIE conferences follow an onsite publication model, meaning that manuscripts received by the advertised due date will be published for online viewing during the event, as well as archived in the SPIE Digital Library.
- A select few of SPIE conferences may elect to follow a Post-Meeting model of publication in order to conduct a more thorough review of manuscripts. In this model, manuscripts will be published 2-4 weeks after the event in the SPIE Digital Library, and may not be published for online viewing during the event.
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- Conference Chairs/Editors may require manuscript revision before approving publication and reserve the right to reject for publication any paper that does not meet acceptable standards for a scientific publication.
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