



Terahertz Photonics III (PE105)

Conference Chairs: **Mona Jarrahi**, Univ. of California, Los Angeles (United States); **Sascha Preu**, Technische Univ. Darmstadt (Germany); **Dmitry Turchinovich**, Univ. Bielefeld (Germany)

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Terahertz technology deals with the radiation that belongs to the spectral range confined between the millimeter-wave and far-infrared parts of the electromagnetic spectrum. In this regime, materials exhibit properties that can be exploited to advantage for use over a broad range of important technologies and applications. This conference brings together a broad range of scientists and engineers to share their views on the state of current terahertz photonics devices and systems and their future prospects. The research area of terahertz photonics provides novel photonic technologies and tools for terahertz generation, detection, and manipulation as well as terahertz imaging, spectroscopy, and communication systems. Furthermore, terahertz photonics research aims to provide deeper understanding of the dynamics of electronic materials and biological processes.

Papers on advances in photonic-driven and -inspired terahertz radiation sources including parametric oscillators, photoconductive antennas, photomixers, quantum cascade lasers, and gas lasers are encouraged. Papers on photonic-driven and -inspired terahertz radiation detectors including photoconductive antennas, photomixers, quantum devices, bolometers and other thermal detectors are also encouraged. Papers on novel approaches in efficient generation, detection and manipulation of terahertz radiation using novel physical mechanisms are welcome. Moreover, advances on hybrid/monolithic integration of photonic terahertz sources and detectors with optical sources and components are of special interest to this conference. In addition, papers on the use of new nonlinear crystals, semiconductors, semiconductor and metallic heterostructures, and two-dimensional material in photonic terahertz sources and detectors are welcome. In addition to active terahertz photonic devices, novel passive components for manipulating the spatial, spectral, and polarization of terahertz waves are of interest to this conference. Specifically, papers on terahertz metamaterials and metasurfaces enabling unprecedented functionalities at terahertz frequencies are encouraged.

This conference welcomes papers on application of terahertz photonic systems for chemical sensing, material characterization, biological studies, medical imaging, high-data-rate and secure communication, astronomy, atmospheric studies, security screening, and non-destructive industrial evaluation. In this regard, papers on various time-domain and frequency domain terahertz imaging and spectroscopy systems, heterodyne spectrometry systems, near-field imaging and spectroscopy systems, and communication systems are encouraged.

Contributed papers are solicited concerning, but not limited to, the following areas:

PHOTONIC TERAHERTZ SOURCE

- parametric oscillators
- photoconductive antennas
- photomixers
- quantum cascade lasers
- gas lasers
- plasmonic devices
- monolithic and hybrid integration
- novel materials.

PHOTONIC TERAHERTZ DETECTORS

- photoconductive antennas
- photomixers
- quantum devices
- bolometers and other thermal detectors
- plasmonic devices
- monolithic and hybrid integration
- novel materials.

PASSIVE TERAHERTZ COMPONENTS

- waveguides, lenses, couplers, beam splitters, gratings
- intensity modulators, phase modulators
- metamaterials and metasurfaces
- photonic crystals
- near-field optics.

PHOTONIC TERAHERTZ SYSTEMS

- time-domain spectroscopy systems
- heterodyne spectrometry systems
- time-domain imaging systems
- continuous-wave and multi-color imaging systems
- near-field imaging and spectroscopy systems
- communication systems.

APPLICATIONS

- material characterization
- nonlinear terahertz effects
- chemical detection
- biological studies
- medical imaging
- high-data-rate and secure communication
- astronomy and atmospheric studies
- security screening
- nondestructive industrial evaluation.

Present your research at SPIE Photonics Europe

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	30 November 2023
Authors notified and programme posts online	25 January 2024
Registration opens	8 January 2024
Submission system opens for manuscripts and poster videos/PDFs*	5 February 2024
Manuscripts due	20 March 2024

*Contact author or speaker must register prior to uploading

What you will need to submit

- Presentation 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 programme (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/pe105call
- You may submit more than one abstract, but submit each abstract only once
- Submit by clicking 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

Submission agreement

All presenting authors, including keynote, invited, oral, and poster presenters, agree to the following conditions by submitting an abstract:

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- 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 programme 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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