

Call for Papers

Announcing an Issue of the IEEE
JOURNAL OF SELECTED TOPICS IN QUANTUM ELECTRONICS on
Terahertz Photonics

Submission Deadline: October 1, 2016
Hard Copy Publication: July/August 2017

The **IEEE Journal of Selected Topics in Quantum Electronics** invites manuscripts that document the current state-of-the-art in **Terahertz Photonics**. Terahertz radiation, as generally defined in the frequency range of 0.3–10 THz, has attracted tremendous interest owing to potential applications in imaging and spectroscopy for medical diagnostics and biology, broadband communications, security, defense, and non-destructive testing. Terahertz radiation falls between microwaves and light and shares some characteristics of both regimes. This intermediate nature of terahertz radiation that bridges electronics and photonics has made it an important area of research with a broad range of applications giving it an advantage over electromagnetic radiation in other frequency regimes. Terahertz radiation is sensitive to charged quasiparticles and has distinct spectral signatures that have enabled an accurate study of phonon resonances and intraband transitions in two-dimensional materials such as graphene. The properties of graphene in the terahertz domain have facilitated active terahertz photonic devices including metamaterial and plasmonic resonators. Recent developments have also demonstrated terahertz radiation-based spin manipulation and superconductivity in materials. Better performing terahertz sources have enabled either higher output powers, narrower pulses, or broader frequency ranges. Several measurement techniques based on terahertz spectroscopy are now employed for fundamental materials research giving rise to many interesting findings.

Our special issue aims at highlighting all developments in the broad area of THz photonics. We will consider theoretical, numerical, and experimental papers that cover but are not limited to these topics:

- (A1) Advances in THz sources and detectors
- (A2) Unique spectroscopic techniques and systems
- (A3) Progress in THz imaging, sensing, and communications
- (A4) New phenomena in THz metamaterials, plasmonics, waveguides, photonic crystals, phonons, and nonlinearities
- (A5) Novel THz materials, such as ferroelectrics, superconductors, nanostructures, and low- and two-dimensional materials
- (A6) THz interactions with matter
- (A7) Development of THz devices, components, and systems
- (A8) Applications of THz radiation in physical and life sciences and industries

The Primary Guest Editor for this issue is **Weili Zhang**, Oklahoma State University, USA and the Guest Editors are **Seongsin M. Kim**, University of Alabama, USA; **Ranjan Singh**, Nanyang Technological University, Singapore; **Masayoshi Tonouchi**, Osaka University, Japan; **Chao Zhang**, University of Wollongong, Australia.

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For inquiries, please contact:

IEEE Photonics Society JSTQE Editorial Office - Chin Tan Lutz (Phone: 732-465-5813, Email: c.tanlutz@ieee.org)

The following documents are required during the mandatory online submission at: <http://mc.manuscriptcentral.com/jstqe-pho>.

1) PDF or MS Word manuscript (double column format, up to 12 pages for an invited paper, up to 8 pages for a contributed paper). Manuscripts over the standard page limit will have an overlength charge of \$220.00 per page imposed. Biographies of all authors are mandatory, photographs are optional. Figures and tables should be embedded in print ready format. See the Tools for Authors link: www.ieee.org/web/publications/authors/transjnl/index.html.

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