



Call for Papers

Announcing an Issue of the IEEE

JOURNAL OF SELECTED TOPICS IN QUANTUM ELECTRONICS on

SiGeSn Infrared Photonics and Quantum Electronics

Submission Deadline: April 1, 2024

Hard Copy Publication: January/February 2025

The IEEE Journal of Selected Topics in Quantum Electronics (JSTQE) invites manuscript submissions in **SiGeSn Infrared Photonics and Quantum Electronics**. The emerging field of **SiGeSn** semiconductors and topological quantum materials, including those with Pb or C alloying, has opened up new horizons for infrared photonics and quantum electronics devices monolithically integrated on Si platform. They have broad range of applications such as infrared imaging, bio/chemical sensing, light detection and ranging (LIDAR), as well as novel topological quantum devices. This platform will greatly enrich photonic-electronic integration on Si. The *IEEE Journal of Selected Topics in Quantum Electronics* invites manuscript submissions in the area of **SiGeSn Infrared Photonics and Quantum Electronics**. The purpose of this issue of JSTQE is to highlight the recent progress and trends in developing cutting-edge SiGeSn technologies, from fundamental studies on the electronic structures to demonstration of infrared photonic/quantum electronic devices. Areas of interest include (but are not limited to):

Fundamental Understanding of Metastable SiGeSn Alloys

- Theoretical/experimental investigations of SiGeSn electronic structure and optoelectronic properties, including quantum optical properties
- Theoretical/experimental investigations of SiGeSn thermal stability and processing.
- Novel epitaxy techniques for doped and undoped SiGeSn thin films and nanostructures, especially alloys with low defect densities and high Sn concentrations.

SiGeSn Infrared Photonic Materials and Devices

- Modeling, design and experimental demonstration of SiGeSn lasers, modulators, photodetectors, image sensors, etc.
- Photonic device processing and integration schemes

SiGeSn Quantum Electronic Materials and Devices

- Topological quantum materials based on α -Sn and Sn-rich SiGeSn alloys
- Quantum transport phenomena in SiGeSn system

The Primary Guest Editor for this issue is **Prof. Jifeng Liu**, Dartmouth College. The Guest Editors are: **Prof. Jose Menendez**, Arizona State University; **Dr. Bruce "Chip" Claflin**, Air Force Research Laboratory; **Prof. Jay Mathews**, University of North Carolina at Charlotte; **Prof. Wei Du**, University of Arkansas.

JSTQE will begin accepting submissions for this special issue on **October 23, 2023**. The deadline for submission of manuscripts is **April 1, 2024**. Hardcopy publication of the issue is scheduled for **January/February 2025**.

Unedited preprints of accepted manuscripts are normally posted online on IEEE Xplore within 1 week of the final files being uploaded by the author(s) on ScholarOne Manuscripts. Posted preprints have digital object identifiers (DOIs) assigned to them and are fully citable. Once available, the preprints are replaced by final copy-edited and XML-tagged versions of manuscripts on IEEE Xplore. This usually occurs well before the hardcopy publication date. These final versions have article numbers assigned to them to accelerate the online publication; the same article numbers are used for the print versions of JSTQE.

For inquiries, please contact:

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Paper submission via IEEE Author Portal: <https://ieee.atyponrex.com/journal/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. See the Tools for Authors link:

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