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" Claffin, 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.

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For inquiries, please contact:
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