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Call for Papers

Announcing an Issue of the IEEE

JOURNAL OF SELECTED TOPICS IN QUANTUM ELECTRONICS on SiGeSn Infrared Photonics and Quantum Electronics

New Submission Deadline: May 15, 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: **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**.

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For inquiries, please contact:

IEEE Photonics Society JSTQE Editorial Office – Alexandra Johnson (Email: johnson.a@ieee.org)

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: www.ieee.org/web/publications/authors/transjnl/index.html.

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