Call for Papers

Announcing an Issue of the IEEE

JOURNAL OF SELECTED TOPICS IN QUANTUM ELECTRONICS on

Power and Efficiency Scaling in Semiconductor Lasers

Submission Deadline: June 1, 2024

Hard Copy Publication: March/April 2025

The IEEE Journal of Selected Topics in Quantum Electronics (JSTQE) invites manuscript submissions in **Power and Efficiency Scaling in Semiconductor Lasers.**

After initial proof-of-concept demonstrations, power- and efficiency-scaling are a central goal of semiconductor laser development, for broad societal benefits, reducing energy consumption and enabling new applications, and rapid progress is currently seen in a broad range of semiconductor lasers, enabled by new insights from studies in device physics and material science and by innovation in device design, materials and technology. The *IEEE Journal of Selected Topics in Quantum Electronics* therefore invites manuscript submissions in the area of **Power and Efficiency Scaling in Semiconductor Lasers.** The purpose of this issue of JSTQE is to summarize current trends, analyze critical limits and present anticipated next steps in research. Areas of interest include all forms of semiconductor lasers across the span of achievable wavelengths, with examples listed below:

High power lasers

Nano-scale, sub-wavelength plasmonic lasers, polariton lasers

Topological lasers

Surface emitting lasers (vertical cavity: VCSEL and photonic crystal: PCSEL)

Quantum Cascade lasers (inter-subband and inter-band)

Lasers with novel gain materials (e.g., deep UV emitting, MIR, transition-metal dichalcogenides)

Heterogenous and other integrated (e.g., Si-based) lasers

Tunable and/or single-mode lasers

Ultra-Low-Noise, -narrow-linewidth, dynamically modulated lasers for pulse-generation, modulation, locking

Lasers with innovative resonators (e.g. VECSELS, MIXELs)

The Primary Guest Editor for this issue is **Dr. Paul Crump**, Ferdinand-Braun-Institut, Berlin. The Guest Editors are: **Prof. Luke Mawst**, University of Wisconsin-Madison, USA; **Dr. Stewart McDougall**, Trumpf GmbH, Germany; **Prof. Susumu Noda**, Kyoto University, Japan; **Prof. Stefan Reitzenstein**, Technische Universität Berlin, Germany; **Prof. Stephen Sweeney**, University of Glasgow, UK; **Prof. Eric Tournie**, University of Montpellier, France; **Prof. Yating Wan**, King Abdullah University of Science and Technology, Saudia Arabia.

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

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For inquiries, please contact:
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