Special Issue

Quantum Cascade Lasers: Recent Progress and Novel Applications

Message from the Guest Editors

Quantum cascade lasers (QCLs) are increasingly driving innovation across a broad scientific area ranging from gas sensing, spectroscopy, security, medical diagnostics, and imaging to fundamental research. This advancement continues to push the boundaries of QCL technology, making QCLs more versatile and applicable at both industrial and real-world applications.

The aim of this Special Issue is to highlight state-of-the-art studies which focus on the latest QCL research hot-topics and applications.

The Special Issue will welcome fundamental and applied cutting-edge research contributions, as both regular or review papers, on the following research areas (and not limited to):

- Quantum transport in QCLs;
- Fundamental properties of QCL operation;
- QCL-based frequency combs;
- Novel QCL systems and phenomena, including 2D materials and light-matter interactions;
- Advanced engineering of QCL emission and operation in new cavity configurations;
- Imaging and microscopy techniques;
- Development of terahertz (THz) QCLs towards room-temperature operation;
- High-power and high-efficiency QCL devices;
- Experiments and applications with mid-infrared and THz QCLs;

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Message from the Editor-in-Chief

You are invited to contribute a research article or a comprehensive review for consideration and publication in *Photonics* (ISSN 2304-6732). *Photonics* is an online open access journal covering both the fundamental and applications of optics and photonics. *Photonics* strives to provide an avenue to allow authors to disseminate their scientific findings—both theoretical/ simulations and experimental works—in highly accessible peer-reviewed journal publications. The manuscript in *Photonics* will be handled with quick turnaround production processing time. We welcome authors to submit their manuscripts for publications in *Photonics*. Our goal in *Photonics* is to enable fast dissemination of high impact works to the scientific community.

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