Call for Papers

IEEE Journal of Selected Topics in Quantum Electronics

Special issue on Advanced Biophotonics in Emerging Biomedical Technologies and Devices

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Scope and Topics

The *IEEE Journal of Selected Topics in Quantum Electronics* (JSTQE) invites manuscript submissions in Biophotonics. The field of Biophotonics is developing rapidly and benefits from state-of-the-art technologies coming from the areas of quantum electronics, lasers and electro-optics as well as advances in the life sciences and medicine. Innovative biophotonics technologies make significant contributions to biomedical research, clinical practices, and public health. Photonics-based technologies offer unique advantages based on molecular level contrast, nanometer resolution, non-contact or minimally invasive access, rapid and cost-effective assays for point-of-care, etc. The purpose of this issue of JSTQE is to highlight recent progress and trends in developing leading-edge biophotonics technologies. Areas of interest include (but are not limited to):

Advanced biophotonics imaging, sensing and diagnostic methods and systems

- Emerging biophotonics imaging techniques including cellular/intracellular, molecular, in-vivo and intravital bioimaging, multi-modal diagnostics, novel biophotonics sensing, neurophotonics, high content and high throughput analysis, digital holographic, endoscopic, translational clinical, photoacoustic, photothermal, diffuse, phase-sensitive, polarization-sensitive, OCT, confocal, and terahertz
- Spectroscopy-based diagnostics including fluorescence, Raman, elastic scattering, evanescence-wave, near-/mid-IR spectroscopy
- Advanced data analysis techniques including artificial intelligence and machine learning based approaches
- New instruments and methods for point-of-care testing as well as diagnostics in resource-constrained settings

Progress in minimally-invasive biophotonic therapeutic techniques

- Laser-tissue interactions in ophthalmology, dentistry, dermatology, cardiology, neurosurgery, photodynamic cancer therapy
- Robotic and imaging-guided targeted laser surgery
- Photobiomodulation therapeutic techniques and light-tissue-interaction mechanisms at cellular and tissue level ,including photodynamic therapy and ultra-short pulse laser tissue therapeutics
- Light-assisted nerve and neuron-growth stimulation, cellular/tissue repair, optogenetics, photoimmunotherapy

Submission Guidelines

Submissions will be reviewed in accordance with the normal procedures of the Journal and papers

must be formatted according to the Information for Authors found at: https://ieeephotonics.org/publications/journal-of-selected-topics-in-quantum-electronics/

- Manuscript and Graphical Abstract Submissions should be made online at https://ieee.atyponrex.com/journal/jstqe-pho**.** Graphical abstracts are strongly suggested.
- Select the paper type "**Special Issue on Advanced Biophotonics in Emerging Biomedical Technologies and Devices".**

Important Dates
Open for Submissions: April 1, 2025
Submission Deadline: March 1, 2026
Tentative Publication: July/August 2026
EARLY ACCESS: *DOI-citable articles will be published online after acceptance upon submission of final files and rights selection – sometimes well in advance of issue publication*.

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