

Call for Papers

IEEE Journal of Selected Topics in Quantum Electronics Special issue on Photonic Thermal Devices

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Scope and Topics

Photonic thermal devices represent a rapidly advancing field focused on controlling and manipulating heat flow through photonic approaches. By engineering the spectral, directional, and temporal properties of thermal radiation, researchers are unlocking new capabilities for energy harvesting, thermal management, and sensing. This special issue aims to highlight recent breakthroughs in photonic thermal devices, ranging from fundamental physics to practical applications in energy, sustainability, and advanced thermal technologies.

We invite researchers to submit original papers and review articles that advance the state-of-the-art in this interdisciplinary domain. The scope of this issue covers the design, fabrication, characterization, and application of photonic structures for thermal control.

Topics of interest include, but are not limited to:

- **Tailored Thermal Emission:** Metamaterials, metasurfaces, and photonic crystals for thermal emission control.
- **Radiative Cooling:** Passive daytime radiative cooling materials, devices, and systems for thermal management.
- **Photonic Energy Conversion:** Photonic components and system design for energy conversion.
- **Photonic Refrigeration:** Photonic materials, components, and systems for refrigeration.
- **Near-Field Thermal Radiation:** Enhancing heat transfer beyond the blackbody limit.
- **2D Thermal Radiation:** Heat transfer driven by dimensional confinement and new modes.
- **Dynamic Thermal Control:** Tunable and switchable thermal devices, including diodes, transistors, and memristors.
- **Nonreciprocal Thermal Radiation:** Breaking the conventional Kirchhoff's law of thermal radiation with photonic devices.
- **Thermal Management of Photonic Devices:** Innovative cooling strategies for high-power lasers, LEDs, and PV cells.
- **Thermal Imaging and Sensing:** Novel infrared sources and detectors for sensing applications.
- **Computational Modeling:** Numerical methods and computer programs for simulating photonic thermal devices.

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://iee.atyponrex.com/journal/jstqe-pho>. Graphical abstracts are strongly suggested.

- Select the paper type “**Special Issue on Photonic Thermal Devices.**”

Important Dates

Open for Submissions: April 1, 2026

Submission Deadline: October 1, 2026

Tentative Publication: July/August 2027

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.*

For further information, contact the JSTQE Editorial Office:

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