

A NEW FEATURE ISSUE FROM JOSA B

Recent Advances in Integrated Photonics

Submission Deadline: 1 July 2025

The Journal of the Optical Society of America B (JOSA B), welcomes submissions to a feature issue on the latest advancements, challenges, and opportunities in integrated photonics, from fundamental academic science to practical industry-oriented applications.

Topics to be covered include but are not limited to:

- **Materials and processes:** Exploration of different material platforms (e.g., silicon-based semiconductors, III-V-based compounds, glasses or polymers) and fabrication technologies for enhanced monolithic and hybrid integration scenarios
- **Theory, modeling, and design:** Novel approaches, with a particular focus on inverse design based on machine learning and optimization
- **Device innovation:** Advances in the development of passive and active devices with improved performance and novel functionalities, including metamaterial-based devices, photonic crystals, plasmonic devices, and quantum sources and detectors
- **Nonlinear integrated optics:** Recent developments in devices to control optical pulse propagation and frequency conversion (e.g., solitons, supercontinuum generation, frequency combs, Raman and Brillouin scattering, etc.)
- **Photonic integrated circuits (PICs) and novel applications:** Design, fabrication, and testing of photonic circuits, including programmable architectures, for applications in communications, neuromorphic computing, quantum information processing, LiDAR, free-space optics and sensing, and on-chip optical interconnects
- **System-level integration:** Challenges and solutions for co-integration of photonics with electronics, packaging, thermal management, and reliability concerns

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