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## Call for Papers

Announcing an Issue of the IEEE

JOURNAL OF SELECTED TOPICS IN QUANTUM ELECTRONICS on  
**Nonlinear Integrated Photonics**

Submission Deadline: April 1, 2022

Hard Copy Publication: January/February 2023

The IEEE Journal of Selected Topics in Quantum Electronics (JSTQE) invites manuscript submissions in **Nonlinear Integrated Photonics**. The field of **Nonlinear Integrated Photonics** has opened up new horizons in optical signal processing, quantum technologies, and sensing by leveraging the strong light-matter interactions available at the nanoscale. The ample functionality enabled by nonlinear optical effects, combined with the potential for dense integration and high-speed low-power operation of nanophotonic devices, has turned this field in one of the most thriving scientific areas. The *IEEE Journal of Selected Topics in Quantum Electronics* invites manuscript submissions in the area of **Nonlinear Integrated Photonics**. Areas of interest include (but are not limited to):

#### **Progress on nonlinear integrated optical sources**

- Integrated frequency combs, mode-locked lasers, and supercontinuum sources and their applications in telecommunications, data centers, and sensing
- Microcavity Brillouin lasers and on-chip Raman lasers
- THz-sources on nonlinear integrated platforms

#### **Advances on nonlinear integrated photonics for quantum applications**

- Nonlinear integrated photonics for quantum sources such as heralded single-photon generation, entangled photon-pairs generation, and squeezed states of light.
- Spectral translation of quantum light in  $\chi^{(2)}$  media, periodically poled  $\chi^{(2)}$  media, and  $\chi^{(3)}$  media
- Quantum photon-photon interactions in integrated platforms towards quantum-by-quantum control, all-optical deterministic quantum logic, single-photon switches and transistors

#### **Nonlinear optical effects in novel material platforms and structured media**

- Progress in on-chip nonlinear novel material platforms: Titanium dioxide, (thin film) lithium niobate, (ultra)silicon rich nitride, silicon carbide, and others.
- Nonlinearity-enhancement using metasurfaces, plasmonics, graphene-loaded waveguides, and others.
- Nonlinearities in topological and PT-symmetric nanophotonic structures

#### **Nonlinear optics applications in telecommunications, data centers, and sensing**

The Primary Guest Editor for this issue is **Dr. Andrea Blanco-Redondo**, Nokia Bell-Labs, USA. The Guest Editors are: **Prof. Dawn Tan**, Singapore University of Technology and Design, Singapore; **Dr. Christian Grillet**, CNRS/École Centrale de Lyon, France; **Dr. Bryn Bell**, Imperial College London, U.K.

The deadline for submission of manuscripts is **April 1, 2022**. Hardcopy publication of the issue is scheduled for **January/February 2023**. Unedited preprints of accepted manuscripts are normally posted online on IEEE Xplore within 1 week of the final files being uploaded by the author(s) on ScholarOne Manuscripts. Posted preprints have digital object identifiers (DOIs) assigned to them and are fully citable. Once available, the preprints are replaced by final copy-edited and XML-tagged versions of manuscripts on IEEE Xplore. This usually occurs well before the hardcopy publication date. These final versions have article numbers assigned to them to accelerate the online publication; the same article numbers are used for the print versions of JSTQE.

#### **For inquiries, please contact:**

**IEEE Photonics Society JSTQE Editorial Office - Christine Shaughnessy (Email: [c.shaughnessy@ieee.org](mailto:c.shaughnessy@ieee.org))**

The following documents located at <http://mc.manuscriptcentral.com/jstqe-pho> are required during the mandatory online submission.

1) PDF manuscript (double column format, up to 12 pages for an invited paper, up to 8 pages for a contributed paper). Manuscripts over the standard page limit will have an overlength charge of \$220.00 per page imposed. Biographies of all authors are mandatory, photographs are optional. See the Tools for Authors link:

[www.ieee.org/web/publications/authors/transin/index.html](http://www.ieee.org/web/publications/authors/transin/index.html).

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