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Call for Papers

Announcing an Issue of the IEEE

JOURNAL OF SELECTED TOPICS IN QUANTUM ELECTRONICS on

Machine Learning in Photonic Communication and Measurement Systems

Submission Deadline: October 1, 2021

Hard Copy Publication: July/August 2022

The IEEE Journal of Selected Topics in Quantum Electronics (JSTQE) invites manuscript submissions in **Machine Learning for Photonic Communication and Measurements Systems**. Introducing intelligence as well using machine learning to design the next generation of components and systems as well as measurement systems is an emerging line of research in the photonics community. The hope is that the machine learning will enable a new generation of transformative photonic components and systems that can outperform current solutions in terms of: performance, flexibility, reconfigurability and power consumption. The strength of machine learning is to find effective solutions for problems that are highly complex such as; realizing power efficient long-reach high-throughput optical communication systems, low-noise lasers, repetition rate and spectrally reconfigurable optical frequency combs, multi-purpose photonic integrated circuits, secure communication systems and performing measurements at the quantum limit. The purpose of this issue of JSTQE is to highlight the recent progress and trends in utilizing machine learning techniques for developing next-generation of photonic communication and measurements systems. Areas of interest include (but are not limited to):

Optical components
- Semiconductor and fibre based lasers devices
- Optical frequency combs
- Programmable multi-purpose photonic integrated circuits
- Fibers
- Optical amplifiers

Optical communication systems
- Flexible transmitters
- Constellation shaping
- Spectrum shaping
- Fiber-optic channel impairment mitigation
- Free-space optics

Classical and quantum measurement systems
- Biomedical imaging
- Characterization of lasers and frequency combs
- Quantum limited phase sensing
- Quantum key distribution
- State estimation in cavity opto-mechanics

Optical networks
- Performance monitoring
- Optimization
- Security

The Primary Guest Editor for this issue is **Darko Zibar**, Technical University of Denmark. The Guest Editors are: **Sergei Turitsyn**, Aston University, United Kingdom; **Bahram Jalali**, University of California Los Angeles (UCLA), USA; **Keisuke Kojima,** Mitsubishi Research Laboratory, (MERL), Boston, USA and **Marija Furdek**, Chalmers University of Technology.

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For inquiries, please contact:
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The following documents located at http://mc.manuscriptcentral.com/jstqe-pho are required during the mandatory online submission.

1) PDF or MS Word 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/transjnl/index.html.

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