



The Integration of Quantum Communication and Quantum Sensors

Guest Editors:

Dr. Satyendra Kumar Mishra

Centre Tecnològic de
Telecomunicacions de
Catalunya, Barcelona, Spain

Dr. Miguel Ángel Vázquez

Centre Tecnològic de
Telecomunicacions de
Catalunya, Barcelona, Spain

Dr. Joan Bas

Centre Tecnològic de
Telecomunicacions de
Catalunya, Barcelona, Spain

Deadline for manuscript
submissions:
closed (31 August 2024)

Message from the Guest Editors

Secure communication and precision sensing can be enhanced by integrating quantum communication and quantum sensors. With quantum communication and quantum sensing, functionalities that go beyond classical limits can be achieved through the principles of quantum mechanics.

Communication using quantum bits, or qubits, differs from classical communication, which uses classical bits to transmit information. Superposition and entanglement are fundamental principles of quantum mechanics that are crucial to quantum communication security.

Quantum sensors measure physical quantities with high precision using the principles of quantum mechanics. To achieve levels of sensitivity and accuracy that are beyond what classical sensors can achieve, they exploit quantum properties, like superposition and entanglement. Quantum sensors have a wide range of applications.

This interdisciplinary field of research combining quantum communication with quantum sensors is on the verge of revolutionizing secure communication and precision sensing. For this integration to be fully realized in different practical scenarios, ongoing research and technological advancements are essential.





photonics



an Open Access Journal by MDPI

Editor-in-Chief

Prof. Dr. Nelson Tansu

School of Electrical and
Electronic Engineering (EEE), The
University of Adelaide, Adelaide,
SA 5005, Australia

Message from the Editor-in-Chief

You are invited to contribute a research article or a comprehensive review for consideration and publication in *Photonics* (ISSN 2304-6732). *Photonics* is an online open access journal covering both the fundamental and applications of optics and photonics. *Photonics* strives to provide an avenue to allow authors to disseminate their scientific findings—both theoretical/ simulations and experimental works—in highly accessible peer-reviewed journal publications. The manuscript in *Photonics* will be handled with quick turnaround production processing time. We welcome authors to submit their manuscripts for publications in *Photonics*. Our goal in *Photonics* is to enable fast dissemination of high impact works to the scientific community.

Author Benefits

Open Access: free for readers, with article processing charges (APC) paid by authors or their institutions.

High Visibility: indexed within Scopus, SCIE (Web of Science), Inspec, Ei Compendex, CAPlus / SciFinder, and other databases.

Journal Rank: CiteScore - Q2 (Instrumentation)

Contact Us

Photonics Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland

Tel: +41 61 683 77 34
www.mdpi.com

mdpi.com/journal/photonics
photonics@mdpi.com
X@Photonics_MDPI