

Special Issue

Quantum and Optical Communications and Sensing: Fundamentals, Applications, Challenges and Future Aspects

Message from the Guest Editors

Quantum and optical technologies are rapidly transforming the fields of communication, sensing, networking, and information processing. Recent advances in photonic technologies, quantum communication, free-space optical (FSO) systems, optical wireless communication, quantum key distribution (QKD), optical and fiber-optic sensing, and integrated photonic platforms are opening new opportunities for high-capacity, secure, precise, and energy-efficient systems.

This Special Issue aims to provide a comprehensive overview of recent developments in quantum and optical communications and sensing, with particular emphasis on fundamental principles, emerging applications, experimental demonstrations, system-level challenges, and future research directions. The Special Issue welcomes contributions addressing both theoretical and experimental aspects of quantum and optical technologies. Particular attention will be given to research that bridges fundamental photonic and quantum phenomena with practical communication, sensing, networking, and information-processing applications.

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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.

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