

## Special Issue

# Quantum and Integrated Photonic Technologies for Advanced Optical Sensing

### Message from the Guest Editor

The convergence of quantum and integrated photonic technologies is ushering in a new era of optical sensing, enabling enhanced sensitivity, miniaturization, and scalable manufacturing. Quantum photonics exploits nonclassical light states, such as entanglement and squeezing, to overcome classical limits in measurement precision. When combined with silicon and heterogeneous photonic integration, these advantages can be realized in compact, stable, and energy-efficient devices suitable for real-world applications. Integrated photonics provides scalable platforms for on-chip light generation, manipulation, and detection, enabling sensing modalities such as interferometric, thermal, and biochemical sensing with improved signal-to-noise ratios and faster processing. Advances in nanofabrication, low-loss waveguides, and on-chip quantum light sources are accelerating the development of room-temperature, chip-scale quantum sensors with mass-production potential. These technologies promise broad impact across environmental monitoring, healthcare, industry, and defense, while ongoing efforts continue to address challenges in system integration, noise control, and standardization.

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### Guest Editor

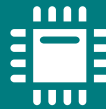
Dr. Yuan Li

Department of Electrical and Electronics Engineering, The Hong Kong Polytechnic University, Hung Hom, Kowloon, Hong Kong, China

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### Deadline for manuscript submissions

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## Sensors

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Editorial Office  
MDPI, Grosspeteranlage 5  
4052 Basel, Switzerland  
Tel: +41 61 683 77 34  
[sensors@mdpi.com](mailto:sensors@mdpi.com)

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### Editor-in-Chief

Prof. Dr. Vittorio M. N. Passaro  
Department of Electrical and Information Engineering, Politecnico di  
Bari, Via Orabona 4, 70126 Bari, Italy

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