

Special Issue

Advances in Optical Fiber Transmission and Sensing Technologies

Message from the Guest Editor

With the continuous progress of photonic integration and sensing technologies, the transmission characteristics of optical fibers have become not only the foundation of modern communication systems but also the cornerstone for emerging high-performance sensing platforms.

This Special Issue aims to highlight the latest developments in both theoretical and applied research on optical fiber transmission and its integration with sensing functionalities. The topics covered in this Special Issue include, but are not limited to, the following:

- Novel optical fiber designs for enhanced signal integrity and transmission efficiency;
- Modeling and mitigation of dispersion and nonlinearity in sensing fibers;
- Light-matter interactions and transmission-based sensing mechanisms;
- Fiber transmission in harsh, dynamic, or lossy environments;
- Optical time/frequency domain reflectometry for distributed sensing;
- Multi-parameter sensing based on interference, diffraction, and scattering in fibers;
- Transmission-aware design of fiber gratings, interferometers, and resonant structures;
- Coherent and speckle-based fiber transmission methods for imaging and reconstruction.

Guest Editor

Dr. Han Gao

Institute of Modern Optics, Nankai University, Tianjin 300350, China

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Photonics
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
photonics@mdpi.com

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About the Journal

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.

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Prof. Dr. Nelson Tansu

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

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