

Special Issue

Design and Fabrication of Advanced Optical Fibers: Latest Advances and Prospects

Message from the Guest Editors

The optical fiber has remained at the forefront of technological progress, powering the Internet and cloud computing, and seamlessly connecting people around the globe, extending its reach even into space. At the core of the evolution of optical fibers is the persistent pursuit of materials for the next generation, surpassing the intrinsic limitations of conventional silica glass that have hindered further progress. This pursuit holds the key to unlocking a plethora of opportunities, from fibers tailored for visible wavelengths to those catering to the mid-infrared spectrum, driving advancements in chemical sensing, spectroscopy, biomedicine, space exploration, and materials processing. We invite submissions covering the design and fabrication of specialty optical fibers, focusing on materials innovation, modeling methodologies, multicore and multimode configurations, AI-driven approaches, and advancements in loss mitigation, nonlinearity management, sensitivity enhancement, and performance scaling. Contributions in the form of research articles, communications, and review papers are equally encouraged and welcomed.

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As the world of science becomes ever more specialized, researchers may lose themselves in the deep forest of the ever increasing number of subfields being created. This open access journal *Applied Sciences* has been started to link these subfields, so researchers can cut through the forest and see the surrounding, or quite distant fields and subfields to help develop his/her own research even further with the aid of this multi-dimensional network.

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