



sensors



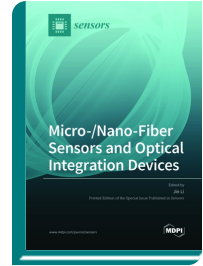
Special Issue Reprint

Micro-/Nano-Fiber Sensors and Optical Integration Devices

www.mdpi.com/books/reprint/6295

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ISBN 978-3-0365-5630-7 (Hardback)
ISBN 978-3-0365-5629-1 (PDF)



The development of micro/nanofiber sensors and associated integrated systems is a major project spanning photonics, engineering, and materials science, and has become a key academic research trend. During the development of miniature optical sensors, different materials and micro/nanostructures have been reasonably designed and functionalized on the ordinary single-mode optical fibers. The combination of various special optical fibers and new micro/nanomaterials has greatly improved the performance of the sensors. In terms of optical integration, micro/nanofibers play roles in independent and movable optical waveguide devices, and can be conveniently integrated into two-dimensional chips to realize the efficient transmission and information exchange of optical signals based on optical evanescent field coupling technology. In terms of systematic integration, the unique optical transmission mode of optical fiber has shown great potential in the array and networking of multiple sensor units.

In this book, more than ten research papers were collected and studied, presenting research on optical micro/nanofiber devices and related integrated systems, covering high-performance optical micro/nanofiber sensors, fine characterization technologies for optical micro/nanostructures, weak signal detection technologies in photonic structures, as well as fiber-assisted highly integrated optical detection systems.



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