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| Nota di bibliografia    | Includes bibliographical references at the end of each chapter and index.  |
| Nota di contenuto       | Multimaterial Fibers -- Optical Micro/Nanofiber as Valuable Technological Platform for Lab on Fiber -- SOI Microring Resonator Sensor Integrated on a Fiber Facet -- Monolithic Silicon Photonic Crystal Fiber Tip Sensors -- Hybrid Nanoimprint-Soft Lithography for Highly Curved Surface with Sub-15 nm Resolution -- Functional Metamaterials for Lab on Fiber -- Multifunctional Fiber Optic Plasmonic Nanoprobes -- Miniaturized Optical Tweezers Through Fiber-End Microfabrication -- Hydrogen Detection Using a Single Palladium Nano-aperture on a Fiber Tip -- Lab-in-a-Microfibre -- Lab on Fiber by Using the Breath Figure Technique -- Electrohydrodynamic Dispenser for Delivering Multiphase Samples at Nanoscale -- Optical Fiber Sensors Based on Nanostructured Materials -- Sensitive and Selective Lab-on-a-Fiber Sensor for Bacteria Detection in Water -- Photonic Crystal Fiber as a Lab-in-Fiber Optofluidic Platform -- Overview of |

Sommario/riassunto

This book focuses on a research field that is rapidly emerging as one of the most promising ones for the global optics and photonics community: the “lab-on-fiber” technology. Inspired by the well-established “lab on-a-chip” concept, this new technology essentially envisages novel and highly functionalized devices completely integrated into a single optical fiber for both communication and sensing applications. Based on the R&D experience of some of the world's leading authorities in the fields of optics, photonics, nanotechnology, and material science, this book provides a broad and accurate description of the main developments and achievements in the lab-on-fiber technology roadmap, also highlighting the new perspectives and challenges to be faced. This book is essential for scientists interested in the cutting-edge fiber optic technology, but also for graduate students.