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Soggetti	Lasers Photonics Nanoscale science Nanoscience Nanostructures Optical materials Electronic materials Technology Optics, Lasers, Photonics, Optical Devices Nanoscale Science and Technology Optical and Electronic Materials Applied Science, multidisciplinary
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Note generali	Includes index.
Nota di contenuto	Fundamentals of Waveguides and Nanoparticle Systems -- Overview of Ion Beam Produced Dielectric Waveguides -- Photonic Structures Produced by Ion Beams -- Synthesis of Nanoparticles by Ion Implantation -- Elongation for Nanorods and Optical Effects -- Electrooptic Properties of Dielectric Waveguides -- Photoluminescence of Dielectric Waveguides -- Nonlinear Optical Dielectric Waveguides -- Lasing Based Dielectric Waveguides -- Tailoring of Optical Properties by Nanoparticles -- Summary and Outlook.
Sommario/riassunto	This book focuses on the fundamentals, technologies and properties of ion irradiation of dielectric materials (e.g. glasses, crystals) with regard to various photonic applications. It introduces readers to diverse ion-

beam techniques for the fabrication and modification of micron- or nanoscale photonic structures, including optical waveguides, photonic crystals, and nanoparticle (nano-spheres and nano-rods) systems, and presents state-of-the-art advances in this multi-disciplinary research field, demonstrating the unique capabilities of ion-beam technologies in optical dielectric materials processing. The book discusses in detail the properties of ion-beam processed waveguides, as well as the modification of dielectrics for photonic applications, such as electro-optic modulation, nonlinear frequency conversion, waveguide amplification and lasing. It also explores synthesis and the correlated optical effects of nanoparticles by ion beams, and features examples of successful micro- and nano-photonic devices. Given its breadth of coverage, the book will particularly appeal to readers interested in ion-beam technology, materials science, and integrated optics.
