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Descrizione fisica	1 online resource (X, 318 p. 162 illus., 62 illus. in color.)
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Disciplina	621.38152
Soggetti	Optical materials Electronic materials Lasers Photonics Polymers Optical data processing Signal processing Image processing Speech processing systems Optical and Electronic Materials Optics, Lasers, Photonics, Optical Devices Polymer Sciences Computer Imaging, Vision, Pattern Recognition and Graphics Signal, Image and Speech Processing
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
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Nota di bibliografia	Includes bibliographical references at the end of each chapters and index.
Nota di contenuto	Chapter 1: Introduction to the Photorefractive Effect in Polymers -- Chapter 2: Charge Transport and Photogeneration in Organic Semiconductors: Photorefractives and Beyond -- Chapter 3: Photorefractive Response: An Approach from the Photoconductive Properties -- Chapter 4: Photorefractive Properties of Polymer Composites Based on Carbon Nanotubes -- Chapter 5: Photorefractive Smectic Mesophases -- Chapter 6: Inorganic-organic Photorefractive

Hybrids -- Chapter 7: Wave Mixing in Photorefractive Polymers: Modeling and Selected Applications -- Chapter 8: Photorefractives for Holographic Interferometry and Nondestructive Testing.

Sommario/riassunto

This book provides comprehensive, state-of-the art coverage of photorefractive organic compounds, a class of material with the ability to change their index of refraction upon illumination. The change is both dynamic and reversible. Dynamic because no external processing is required for the index modulation to be revealed, and reversible because the index change can be modified or suppressed by altering the illumination pattern. These properties make photorefractive materials very attractive candidates for many applications such as image restoration, correlation, beam conjugation, non-destructive testing, data storage, imaging through scattering media, holographic imaging, and display. The field of photorefractive organic materials is also closely related to organic photovoltaic and light emitting diode (OLED), which makes new discoveries in one field applicable to others. Covers both fundamentals and applications Presents exciting new developments in PR organic materials from new molecular chromophores and quantum dots through nanoparticle dopants Discusses applications of photorefractive polymers for nondestructive testing Represents essential reading for graduate students through academic and industry researchers.