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Descrizione fisica	1 online resource (XI, 371 p. 122 illus., 44 illus. in color.)
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Soggetti	Polymers Biomaterials Ceramics Glass Composite materials Polymer Sciences Ceramics, Glass, Composites, Natural Materials
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Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references at the end of each chapters and index.
Nota di contenuto	Part I Introduction: Bio based functional materials: an introduction -- Part II Synthesis, Processing, and characterization: Thermoplastic processing and characterization of protein based functional materials: a review -- Synthesis and properties of functional biopolymeric composites -- Electroconductive modification of functional biopolymers -- Valorization of agricultural by-products to develop functional materials -- Free radical polymerization of regular and conjugated soybean oil for functional biocomposites -- Effect of nanotubes on properties of functional biopolymers -- Part III Cellulose-based functional polymers: Structure and properties of cellulose basesd functional polymers -- Functional biopolymer nanocomposites from nanocellulose -- Functional green cellulose nanocrystals for polymer nanocomposites -- Functional cellulose-based systems for biomedical applications -- Part IV Other types of functional biopolymers: Chitosan based functional nanocomposites: structure and chemistry.- Effect of

	boron nitride nanoparticles on properties of starch -- Bio-based and plant oil-based functional polyhydroxyalkanoates -- Soy protein based functional polymer blend materials.
Sommario/riassunto	This book presents the synthesis, processing and application of selected functional biopolymers as new advanced materials. It reviews theoretical advances as well as experimental results, opening new avenues for researchers in the field of polymers and sustainable materials. The book covers various aspects, including the structural analysis of functional biopolymers based materials; functional biopolymer blends; films, fibers, foams, composites and different advanced applications. A special emphasis is on cellulose-based functional polymers, but other types of functional biopolymers (e.g. from chitosan, starch, or plant oils) are also described.