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Titolo	Eco-friendly Polymer Nanocomposites [[electronic resource]] : Processing and Properties / / edited by Vijay Kumar Thakur, Manju Kumari Thakur
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Descrizione fisica	1 online resource (578 p.)
Collana	Advanced Structured Materials, , 1869-8433 ; ; 75
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Soggetti	Polymers Nanotechnology Engineering—Materials Renewable energy resources Environmental engineering Biotechnology Biomaterials Polymer Sciences Materials Engineering Renewable and Green Energy Environmental Engineering/Biotechnology
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Nota di contenuto	Eco-Friendly Polymer Nanocomposite-Properties and Processing -- Biodegradable Starch Nanocomposites -- Nanocomposites of Polyhydroxyalkanoates Reinforced With Carbon Nanotubes: Chemical and Biological Properties -- Biodegradable Polymer/Clay Nanocomposites -- Static and Dynamic Mechanical Analysis of Coir Fiber / Montmorillonite Nanoclay Filled Novolac / Epoxy Hybrid Nanocomposites -- Multi-Functionalized Carbon Nanotubes Polymer Composites: Properties and Applications -- Metallic Nano-Composites: Bacterial-Based Ecologically Benign Biofabrication and Optimization Studies -- Bio Based Wood Polymer Nanocomposites: A Sustainable High Performance Material for Future -- Water Soluble Polymer Based

Nanocomposites Containing Cellulose Nanocrystals -- Bio-Nanocomposites of Regenerated Cellulose Reinforced with Halloysite Nanoclay and Graphene Nanoplatelets: Characterizations and Properties -- Cellulose Nanofiber for Eco-Friendly Polymer Nano-Composites -- Cellulose Acetate Nanocomposites with Antimicrobial Properties -- Eco-Friendly Electrospun Polymeric Nanofibers-Based Nanocomposites for Wound Healing and Tissue Engineering -- Soy Protein and Starch Based Green Composites/ Nanocomposites: Preparation, Properties and Applications -- Multi-Component Polymer Composite/ Nanocomposites Systems using Polymer Matrices from Sustainable Renewable Sources -- Green Synthesis of Polymer Composites/ Nanocomposites using Vegetable Oil -- Hierarchically Fabrication of Amylosic Supramolecular Nanocomposites by means of Inclusion Complexation in Phosphorylase-Catalyzed Enzymatic Polymerization Field -- Mechanical Properties of Eco-Friendly Polymer Nanocomposites -- Nanoclay/ Polymer Composites: Recent Developments and Future Prospects.

Sommario/riassunto

This book contains precisely referenced chapters, emphasizing environment-friendly polymer nanocomposites with basic fundamentals, practicality and alternatives to traditional nanocomposites through detailed reviews of different environmental friendly materials procured from different resources, their synthesis and applications using alternative green approaches. The book aims at explaining basics of eco-friendly polymer nanocomposites from different natural resources and their chemistry along with practical applications which present a future direction in the biomedical, pharmaceutical and automotive industry. The book attempts to present emerging economic and environmentally friendly polymer nanocomposites that are free from side effects studied in the traditional nanocomposites. This book is the outcome of contributions by many experts in the field from different disciplines, with various backgrounds and expertises. This book will appeal to researchers as well as students from different disciplines. The content includes industrial applications and will fill the gap between the research works in laboratory to practical applications in related industries.