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Disciplina	620.118
Soggetti	Polymers Biomaterials Forest products Ceramics Glass Composite materials Chemistry, Organic Polymer Sciences Wood Science & Technology Ceramics, Glass, Composites, Natural Materials Organic Chemistry
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references at the end of each chapters.
Nota di contenuto	Part I Introduction: Recent advances in lignocellulosic materials and composites -- Lignocellulosic materials - their characterization and applications in polymer composites.- Synthesis, properties and applications of lignocellulosic nanofibrils.- Part II Pretreatments of lignocellulosic materials: Pretreatments of lignocellulosics by physical, chemical, mechanical and green methods -- Retting process as a pre-treatment of natural fibers for the development of polymer composites. - Part III Fabrication and properties of lignocellulosic composite materials: Lignocellulosic materials as biofillers in polymer composites. - Natural fiber reinforced conductive polymer composites. - Lignocellulosics and nanocellulose for reinforcement of thermoplastic composites.- Wood fiber reinforced plastic composites.- Lignin

reinforcement in polymer composites.- Lignocellulosic fibres reinforced thermoset composites: preparation, characterisation, mechanical and rheological properties.- Pineapple leaf waste: A high potential reinforcement for greener polymer matrix composites.- Elaboration and properties of biodegradable composites based on polyesters with natural fibers.- Biodegradation of lignocellulosic polymer composites.- Part IV Application of lignocellulosic composite materials: Lignocellulosic materials for Geotextiles and Geocomposite for Engineering Applications.- Green composites from lignocellulosic wastes for building applications.- Lignocellulosic composite materials for food packaging.- Lignocellulosic composites as a potential adsorbent.
- Design and fabrication of kenaf fiber reinforced polymer composite household products.

Sommario/riassunto

This book comprehensively summarizes important aspects of research in the active field of lignocellulosic (polymer) composites, including polymer materials from or containing cellulose, hemicellulose and lignin. It describes how these materials can be produced from forest products and natural fibers from sources such as jute, flax, sisal, and many more, and even from agricultural residues (like wheat straw, corn stover, or sugarcane bagasse). In times of high demand for renewable green materials, lignocellulosic materials from organic matter produced by trees, shrubs and agricultural crops present a highly attractive feedstock. The international authors explain different treatment and fabrication methods for the production of lignocellulosic materials. Other chapters address the properties of these green materials or illustrate specific applications, ranging from food packaging and household products to adsorbents and even conductive polymer composites. In this way, this book offers a broad and comprehensive overview over the entire field of lignocellulosic composite materials.
