

1. Record Nr.	UNINA9910830046503321
Titolo	Polyolefin composites [[electronic resource] /] / edited by Domasius Nwabunma, Thein Kyu
Pubbl/distr/stampa	Hoboken, N.J., : Wiley-Interscience, c2008
ISBN	1-281-22168-6 9786611221683 0-470-19903-2 0-470-19902-4
Descrizione fisica	1 online resource (625 p.)
Collana	Wiley Series on Polymer Engineering and Technology
Altri autori (Persone)	NwabunmaDomasius KyuThein <1948->
Disciplina	668.4 668.4/234 668.4234
Soggetti	Polyolefins Polymeric composites
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	POLYOLEFIN COMPOSITES; Contents; Preface; Contributors; Part I Introduction; 1. Overview of Polyolefin Composites; 1.1 Introduction; 1.2 Olefinic Monomers; 1.3 Polyolefin Homopolymers, Copolymers, and Terpolymers; 1.4 Polyolefin Composites; 1.5 Trends in Polyolefin Composites; Nomenclature; References; Part II Polyolefin Micro Composites; 2. Polypropylene Natural Cellulosic Fiber Composites; 2.1 Introduction; 2.2 Applications of Polypropylene Composites; 2.3 Preparation Techniques for Polypropylene Composites; 2.4 Fiber Surface and Polypropylene Modifications 2.5 Forming of Polypropylene Composite 2.6 Composite Morphology and Polypropylene Crystallization; 2.7 Mechanical Properties; 2.8 Additives and Complementary Structures; 2.9 Conclusions; Nomenclature; References; 3. Polyolefin/Natural Fiber Composites; 3.1 Introduction; 3.2 Structure and Properties of Plant Fibers; 3.2.1 Chemical Structure and Applications; 3.2.2 Cellulose Microfibrils; 3.3 Surface Modification of Plant Fibers; 3.3.1 Physical Treatments; 3.3.2

Physicochemical Treatments; 3.3.3 Chemical Modification of Plant Fibers; 3.4 Polyolefin Composites  
3.4.1 Processing of Polyolefin/Natural Fiber Composites3.4.2 Mechanical Properties of Polyolefin/Natural Fiber Composites; 3.4.3 Dynamic Mechanical Properties of Polyolefin/Natural Fiber Composites; 3.4.4 Rheological Properties of Polyolefin/Natural Fiber Composites; 3.4.5 Thermoanalytical Properties of Polyolefin/Natural Fiber Composites; 3.4.6 Electrical Properties of Polyolefin/Natural Fiber Composites; 3.4.7 Water Absorption by Polyolefin/Natural Fiber Composites; 3.4.8 Nanocomposites; 3.5 Characterization of Polyolefin/Fiber Interfaces; 3.6 Applications of Polyolefin Composites 3.7 ConclusionsNomenclature; References; 4. Composites of Polyolefins and Some Polyolefin/Polyamide Blends as Matrices and Calcium Carbonate, Wood Flour, Sisal Fiber, Hydroxyapatite, and Montmorillonite as Fillers; 4.1 Introduction; 4.2 Composites of Polypropylene and High Density Polyethylene with Calcium Carbonate; 4.2.1 Mechanical Properties; 4.2.2 Influence of the Mixing Conditions on the Dispersion of the Filler; 4.2.3 Surface Modifiers for Calcium Carbonate; 4.2.4 Thermal Properties; 4.3 Composites of Polypropylene and High Density Polyethylene with Wood Flour and Sisal Fibers 4.3.1 Mechanical Properties4.3.2 Thermal Properties; 4.3.3 Influence of the Gamma Radiation on the Behavior of the Composites; 4.4 Composites of Polypropylene and High Density Polyethylene with Hydroxyapatite; 4.4.1 Influence of the Composite Preparation Methods on Its Mechanical Properties; 4.4.2 Modification of the HA Particles Surface and Its Influence on the Tensile Properties; 4.4.3 Influence of Gamma Radiation on the Composites; 4.5 Composites of Polyolefins/Polyamide 6 with Montmorillonite; 4.5.1 Mechanical Properties; 4.5.2 Influence of Different Compatibilizing Agents 4.5.3 Analysis of the Physical, Mechanical, Thermal, and Morphological Properties of Composites

---

## Sommario/riassunto

This guide to the properties and applications of polyolefin composites consolidates information to help the reader compare, select, and integrate a material solution as needed. It covers polyolefin microcomposites, polyolefin nanocomposites, and advanced polyolefin nano and molecular composites and discusses processing, morphological characterization, crystallization, structure and properties, and performance evaluation at micro and nano structural levels. It details modeling and simulation, engineering performance properties, and applications. This is a practical, hands-on reference for pract

---