

1. Record Nr.	UNINA9910298643003321
Titolo	Handbook of polymernanocomposites : processing, performance and application. Volume A, Layered silicates / / Jitendra K. Pandey [and three others], editors
Pubbl/distr/stampa	Heidelberg [Germany] : , : Springer, , 2014
ISBN	3-642-38649-0
Edizione	[1st ed. 2014.]
Descrizione fisica	1 online resource (xii, 538 pages) : illustrations (some color)
Collana	Gale eBooks
Disciplina	530 54 541.2254 620.1
Soggetti	Polymeric composites Nanostructured materials
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	"With 209 figures and 32 tables".
Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	""Contents""; ""Contributors""; ""1 Polyhydroxyalkanoates-Based Nanocomposites: An Efficient and Promising Way of Finely Controlling Functional Material Propertie""; ""1 Introduction""; ""2 Preparative Techniques of PHA-Based Nanocomposites""; ""3 PHA-Based Nanocomposite Properties""; ""3.1 Mechanical Properties""; ""3.2 Thermal Stability""; ""3.3 Gas Barrier Properties""; ""3.4 Biodegradability""; ""4 Conclusion""; ""Acknowledgments""; ""References""; ""2 New Developments in Polycaprolactone-Layered Silicate Nano-biocomposites: Fabrication and Properties""; ""1 Polycaprolactone"" ""2 Polymer/Silicate Layered Nanocomposites""""2.1 Preparation Methods""; ""2.1.1 Intercalation of Polymer and Prepolymer from Solution""; ""2.1.2 In Situ Polymerization""; ""2.1.3 Melt Intercalation""; ""3 PCL/Silicate Layers Nanocomposites""; ""3.1 Preparation Methods""; ""3.1.1 Solution Route""; ""Supercritical CO2 Intercalation PCL""; ""3.1.2 Melt Intercalation Route""; ""Masterbatch Process""; ""3.1.3 In Situ Polymerization Route""; ""3.2 Characterization and Properties""; ""3.2.1 Crystallinity Behavior""; ""3.2.2 Permeability Behavior""; ""3.2.3

Viscoelastic Behavior""

""3.2.4 Morphological Studies""""3.2.5 Mechanical Properties""; ""3.2.6 Thermal Behavior""; ""3.2.7 Biodegradability""; ""3.2.8 NMR Analyses""; ""4 Nanocomposites Based on PCL/Polymer/Clay""; ""5 PCL Nanocomposites Based on Other Nanofillers""; ""References""; ""3 Polylactic Acid (PLA) Layered Silicate Nanocomposites""; ""1 Introduction""; ""2 Biopolymer""; ""3 Poly(Lactic Acid) (PLA)""; ""4 PLA Nanocomposites""; ""5 PLA/Layered Silicate Nanocomposite""; ""6 Future Direction""; ""References""; ""4 Recent Progress in the Development of Starch-Layered Silicate Nanocomposites"" ""1 Introduction""""2 Starch Fundamentals""; ""3 Nanostructure and Surface Chemistry of Modified Layered Silicates""; ""4 Plasticizers and Compatibilizers for Starch-Layered Silicate Nanocomposites""; ""5 Engineering Methods and Performance of Starch-Layered Silicate Nanocomposites""; ""6 Conclusions""; ""7 Future Prospective""; ""References""; ""5 Structure-Property Correlations of Poly(ethylene oxide) Nanohybrids with Layered Silicates and Silica Nanoparticles""; ""1 Introduction""; ""2 Structural Characteristics of PEO Nanohybrids""; ""2.1 Dispersion Medium and Casting Process"" ""2.2 Morphological Behavior""""3 Performance Characteristics of PEO Nanohybrids""; ""3.1 Mechanical Properties""; ""3.2 Thermal Properties""; ""4 Conclusions""; ""Acknowledgments""; ""References""; ""6 Recent Developments in Cellulose and Cellulose Derivatives/Clay Nanocomposites""; ""1 Introduction""; ""2 Cellulose and Cellulose Derivative Structures""; ""2.1 Cellulose""; ""2.2 Cellulose Derivatives""; ""3 Layered Silicate Nanocomposites""; ""3.1 Cellulose/Layered Silicate Nanocomposites""; ""3.2 Cellulose Derivative/Layered Silicate Nanocomposites""; ""4 Final Remarks""; ""References"" "" 7 Thermal and Rheological Properties of Poly(ethylene-co-vinyl acetate) (EVA) Nanoclay""

Sommario/riassunto

Volume A of Handbook of Polymer Nanocomposites deals with Layered Silicates. In some 20 chapters the preparation, architecture, characterisation, properties and application of polymer nanocomposites are discussed by experts in their respective fields.