Biopolymers [reuse, recycling, and disposal /

Niaounakis, Michael

Elsevier Science,
c2013

Monografía

Biopolymers Reuse, Recycling and Disposal is the first book covering all aspects of biopolymer waste management and post-usage scenarios, embracing existing technologies, applications, and the behavior of biopolymers in various waste streams. The book investigates the benefits and weaknesses, social, economic and environmental impacts, and regulatory aspects of each technology. It covers different types of recycling and degradation, as well as life cycle analysis, all supported by case studies, literature references, and detailed information about global patents

Título: Biopolymers Recurso electrónico] reuse, recycling, and disposal Michael Niaounakis

Editorial: Amsterdam Boston Elsevier Science c2013

Descripción física: 1 online resource (433 pages)

Tipo Audiovisual: Biopolymers SCIENCE / Chemistry / Organic bisacsh Biopolymers. fast Electronic books

Mención de serie: Plastics Design Library

Bibliografía: Includes bibliographical references and index

Contenido: Front Cover; Series Page; Biopolymers: Reuse, Recycling, and Disposal; Copyright; Contents; Quote; Foreword; Abbreviations of Biopolymers; 1 -- Introduction to Biopolymers; 1.1Rationale for Use of Biopolymers; 1.2Types of Biopolymers; 1.3Polyesters; 1.4Poly(ether-ester)s; 1.5Aliphatic Polycarbonates; 1.6Polyamides; 1.7 Poly(ester amide)s; 1.8Poly(ether amide)s; 1.9Polyurethanes (Bio-Based PUs); 1.10Polysaccharides; 1.11Vinyl Polymers; 1.12Diene Polymers; 1.13Other Biodegradable Polymers; 1.14Biopolymer Compositions; 1.15 Biodegradable Biopolymer Additives; 1.16Sources of Biopolymers 1.17Applications and Parts1.18Sources of Scrap and Waste Biopolymers; References; 2 -- Definitions and Assessment of (Bio)degradation; 2.1 Define the Terms; 2.2 Classification of Biopolymers; 2.3 Biopolymers versus Oxodegradable Polymers; 2.4 Types and Mechanisms of (Bio)degradation; 2.5 (Bio)degradation Testing; References; 3 -- Reuse; 3.1 Recuperation; 3.2 Restabilization; 3.3 Blending Recycled Biopolymers with other Polymers; 3.4 Modification of the Chemical Structure; 3.5 Multiple Processing; References; 4 -- Disposal; 4.1 General; 4.2 Landfilling; 4.3 Biological Processes 4.4 (Bio)degradation in Water4.5 Other Waste Disposal Systems; 4.6 Destructive Thermal Processes; References; 5 -- Physical Recycling; 5.1 General; 5.2 Grinding; 5.3 Sorting; 5.4 Drying; References; 6 -- Chemical Recycling; 6.1 Dry-Heat Depolymerization (in the Melt); 6.2 Hydrolysis/Solvolysis (Alcoholysis); 6.3 Hydrothermal

Depolymerization; 6.4 Enzymatic Depolymerization; 6.5 Miscellaneous Processes; References; 7 -- Degradability on Demand; 7.1 Control of Degradation Rate; 7.2 Suppression of (Bio)-degradability; 7.3 Promotion of (Bio)-degradability; References 8 -- Developments and Trends in Patenting8.1 Biopolymers and Patents; 8.2 Patent Analysis; 8.3 Prospects and Limitations of the Waste Treatment Options of Biopolymers; 8.4 Conclusions; 8.5 Development of New Waste Treatment Processes/Materials; References; 9 -- Regulatory Aspects Framework; 9.1 Standards; 9.2 Certification; References; 10 -- Economic Evaluation and Environmental Impacts; 10.1 Economic Evaluation; 10.2 Life Cycle Assessment (LCA); 10.3 Environmental Impacts; 10.4 Health and Safety Impacts; References; Appendix I; Appendix II; Appendix III; Appendix IV -- Databases Consulted Appendix V -- Further Information SourcesInstitutions/Organizations; Information/Magazines/Blogs; Glossary; Patents; Applicants; Inventors; Author Index; Index

Restricciones de acceso: Acceso restringido a miembros de la Comunidad Universitaria

ISBN: 9781455731541 electronic bk.) 1455731544 electronic bk.)

Entidades: Ebrary, Inc

Enlace a formato físico adicional: Print version Niaounakis, Michael. Biopolymers: Reuse, Recycling, and Disposal. -- Burlington : Elsevier Science, 2013 9781455731459

Punto acceso adicional serie-Título: Plastics Design Library
