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| Nota di contenuto | Front Cover; Series Page; Biopolymers: Reuse, Recycling, and Disposal; Copyright; Contents; Quote; Foreword; Abbreviations of Biopolymers; 1 - Introduction to Biopolymers; 1.1 Rationale for Use of Biopolymers; 1.2 Types of Biopolymers; 1.3 Polyesters; 1.4 Poly(ether-ester)s; 1.5 Aliphatic Polycarbonates; 1.6 Polyamides; 1.7 Poly(ester amide)s; 1.8 Poly(ether amide)s; 1.9 Polyurethanes (Bio-Based PUs); 1.10 Polysaccharides; 1.11 Vinyl Polymers; 1.12 Diene Polymers; 1.13 Other Biodegradable Polymers; 1.14 Biopolymer Compositions; 1.15 Biodegradable Biopolymer Additives; 1.16 Sources of Biopolymers 1.17 Applications and Parts1.18 Sources 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 Patenting 8.1 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

Sommario/riassunto

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. Patents in