

1. Record Nr.	UNISA990001709640203316
Titolo	Der Kleine Brockhaus
Pubbl/distr/stampa	Wiesbaden : Brockhaus, 1951
Descrizione fisica	2 volumi (700; 700 p.) : ill. ; 25 cm
Disciplina	033.1
Collocazione	I.1.B. 033 1 1(033 1 1) I.1.B. 033 1 2(033 1 2)
Lingua di pubblicazione	Tedesco
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	1. Band: A bis K 2. Band: L bis Z
2. Record Nr.	UNINA9910825637803321
Titolo	Biodegradable polyesters / / edited by Stoyko Fakirov
Pubbl/distr/stampa	Weinheim, Germany : , : Wiley-VCH, , 2015 ©2015
ISBN	9783527656981 (ebook) 3-527-65697-9 3-527-65695-2 3-527-65698-7
Descrizione fisica	1 online resource (370 p.)
Disciplina	668.4225
Soggetti	Polyesters Biodegradable plastics
Lingua di pubblicazione	Tedesco
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references at the end of each chapters and index.

Nota di contenuto

Cover; Contents; List of Contributors; List of Abbreviations and Symbols; Preface; Chapter 1 Biodegradable Polyesters: Synthesis, Properties, Applications; 1.1 Historical Overview on the Origin of Polymer Science and Synthesis of Polyamides and Polyesters; 1.1.1 Synthesis of Polyamides; 1.1.2 Initial Knowledge about Polyesters; 1.2 Publication Trend of Representative Biodegradable and Nonbiodegradable Polyesters in the Past Century; 1.3 Biodegradable Polyesters; 1.3.1 Biodegradable Aliphatic Polyesters and Their Copolymers; 1.3.1.1 Poly(lactic acid)
1.3.1.2 Polyglycolide or Poly(glycolic acid)1.3.1.3 Poly(caprolactone); 1.4 Concluding Remarks; Acknowledgment; References; Chapter 2 Functional (Bio)degradable Polyesters by Radical Ring-Opening Polymerization; 2.1 Introduction; 2.2 Radical Ring-Opening Polymerization (RROP) of Cyclic Ketene Acetals; 2.2.1 Starting Monomers: Cyclic Ketene Acetals; 2.2.2 Radical Ring-Opening Polymerization Mechanism; 2.2.3 Functional Polyesters by Conventional and Controlled Radical Homopolymerization of CKAs; 2.2.4 Functional Polyesters by Copolymerization of CKAs and Vinyl Monomers; 2.3 Conclusions
References Chapter 3 Microbial Synthesis of Biodegradable Polyesters: Processes, Products, Applications; 3.1 Introduction; 3.2 Biogenesis of Microbial Polyhydroxyalkanoate Granules; 3.3 The Diversity of Biopolymers; 3.4 Polyester (PHA) Synthases are the Key Enzymes; 3.5 Catalytic Reaction Mechanism; 3.6 PHA Inclusions: Self-Assembly and Structure; 3.7 Industrial Production of Bacterial Polyhydroxyalkanoates: PHAs via Fermentation; 3.8 Application Opportunities of Bacterial Polyhydroxyalkanoates; 3.8.1 In Energy Industry: Biofuels Based on PHAs
3.8.2 In Material Industry: PHAs as Polymeric Materials 3.8.2.1 PHAs as Biodegradable Plastics and Fiber Materials; 3.8.2.2 PHAs as Medical Implant Materials; 3.8.2.3 PHAs as Drug Delivery Carrier; 3.8.3 Fine Chemical Industry: PHA Chiral Monomers; 3.8.4 Application of PHA Granule Surface Proteins; 3.8.5 Production of Tailor-Made Biopolyester Nanoparticles and Potential Applications; 3.8.6 Future Development of PHA-Based Industry; 3.8.6.1 The Development of Low-Cost PHA Production Technology; 3.8.6.2 Unusual PHAs with Special Properties; 3.8.6.3 High Value Added Applications
3.8.6.4 Other Future Applications 3.8.6.5 Microbial Synthesis of Poly (lactic acid) (PLA); 3.8.7 Applications of PHA Inclusions as Functionalized Biobeads; 3.8.7.1 Bioseparations; 3.8.7.2 Drug Delivery; 3.8.7.3 Protein Purification; 3.8.7.4 Enzyme Immobilization; 3.8.7.5 Diagnostics and Imaging; 3.8.7.6 Vaccine Delivery; 3.9 Conclusions and Outlook; Acknowledgments; References; Chapter 4 Synthesis, Properties, and Mathematical Modeling of Biodegradable Aliphatic Polyesters Based on 1,3-Propanediol and Dicarboxylic Acids; 4.1 Introduction; 4.1.1 Aliphatic Polyesters
4.1.2 Production of 1,3-Propanediol

Sommario/riassunto

Collating otherwise hard-to-get and recently acquired knowledge in one work, this is a comprehensive reference on the synthesis, properties, characterization, and applications of this eco-friendly class of plastics. A group of internationally renowned researchers offer their first-hand experience and knowledge, dealing exclusively with those biodegradable polyesters that have become increasingly important over the past two decades due to environmental concerns on the one hand and newly-devised applications in the biomedical field on the other. The result is an unparalleled overview for the