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Chemistry: State of the Art, Trends, and Future Developments1. Introduction; 2. Preparation of block copolymers by polycondensation. A critical review; 2.1. General considerations; 2.2. Direct polycondensation of ω , ω -difunctional oligomers; 2.3. Polycondensation of an ω , ω -difunctional oligomer with the precursors of another block; 2.4. Oligomer-coupling reactions; 2.5. Characterization techniques. Side reactions; 3. New structures; 3.1. Block copolymers containing liquid crystalline structures 3.2. Liquid crystalline sequences as part of the backbone3.3. Liquid crystalline sequences as side chains; 3.4. Metallo-supramolecular block copolymers; 3.5. Block copolymers prepared from metal-containing macrocycles; 3.6. The use of microorganisms; 4. Conclusions; References; PART II POLYESTER-BASED THERMOPLASTIC ELASTOMERS; Chapter 3 Polyester Thermoplastic Elastomers: Synthesis, Properties, and Some Applications; 1. Introduction; 2. Chemical structure of polyester elastomers; 3. Poly(alkylene oxide) flexible segment-based polyester elastomers 4. Modified poly(butylene terephthalate) rigid segment-based polyester elastomers5. Branched polyester elastomers; 6. Synthesis of poly(ether ester) block copolymers; 7. Other multiblock polyester elastomers; 8. Polyester thermoplastic elastomers from blends; 9. A new processing aspect: weldability of polyester elastomers; 10. Polyester elastomers for biomedical application; 11. Conclusions and outlook; References; Chapter 4 Terpoly(Ester-b-Ether-b-Amide) Thermoplastic Elastomers: Synthesis, Structure, and Properties; 1. Introduction; 2. Chemical structure of terpoly(ester-b-ether-b-amide)s 3. Synthesis of triblock -(GT-b-PO4-b-PA)(n)- polymers

Sommario/riassunto

Reporting on the work of an international team of scientists actively involved in the study of thermoplastic elastomers (TPE) based on polyesters, polyamides, and polyurethanes, this book is the first to provide a detailed description of condensation TPE with close attention paid to polyamide-based systems. Reflecting the increasing importance of TPE as engineering plastics, the authors discuss the widened application opportunities by preparing systems with various chemical compositions and molecular structures as (semi-) interpenetrating networks. The contents also cover the chemical aspects,
