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2.4.2 Boron-Based Ate Complexes; 2.4.3 Halo and Related Monomers; 2.4.4 Catalysts; 2.4.5 Chain Growth SPC
2.4.6 Microwave and Technical Scale Microreactor Applications2.5 Selected Classes of Polyarylenes and Related Polymers; 2.5.1 Poly(para-phenylene)s; 2.5.2 Polyfluorenes; 2.5.3 Poly(para-meta-phenylene)s; 2.5.4 Shielded Polyarylenes; 2.5.5 Miscellaneous; 2.6 Conclusions and Outlook; Acknowledgments; References; 3 Advanced Functional Regioregular Polythiophenes; 3.1 Introduction; 3.2 Unsubstituted Polythiophene; 3.3 Poly(3-alkylthiophene)s; 3.4 Head-to-Tail Regioregular Poly(3-alkylthiophene)s (rrP3ATs); 3.4.1 Design and Synthesis of rrP3ATs; 3.4.1.1 McCullough Method; 3.4.1.2 Rieke Method
3.4.1.3 GRIM Method3.4.1.4 Other Methods; 3.4.2 Mechanism of the Nickel-Catalyzed Polymerization; 3.4.3 End Group Functionalization; 3.4.3.1 Postpolymerization End Group Functionalization; 3.4.3.2 In situ End Group Functionalization; 3.4.4 Fundamental Properties of rrP3ATs; 3.4.4.1 UV-vis Absorption; 3.4.4.2 Microstructure and Morphology in Thin Films; 3.4.4.3 Electrical Conductivity; 3.4.5 rrP3ATs in Electronic Devices; 3.4.5.1 rrP3ATs in PLEDs; 3.4.5.2 rrP3ATs in OFETs; 3.4.5.3 rrP3ATs in OPVs; 3.5 Regiosymmetric Poly(alkylthiophene)s
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Sommario/riassunto

This first systematic compilation of synthesis methods for different classes of polymers describes well-tested and reproducible procedures, thus saving time, money and chemicals.Each chapter presents the latest method for a specific class of conjugated polymers with a particular emphasis on the design aspects for organo-electronic applications. In this concise and practically oriented manner, readers are introduced to the strategies of influencing and controlling the polymer properties with respect to their use in the desired device.This style of presentation quickly helps researchers