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| Soggetti                | Conjugated polymers                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
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| Nota di contenuto       | Conjugated Polymer Synthesis: Methods and Reactions; Contents; Preface; List of Contributors; 1 Organometallic Polycondensation for Conjugated Polymers; 1.1 Basic Organometallic C-C Coupling; 1.2 Syntheses of -Conjugated Polymers; 1.3 Optical Properties; 1.3.1 UV-Vis Data; 1.3.2 Photoluminescence; 1.3.3 Other Optical Properties; 1.4 Redox Behavior and Electrical Conductivity; 1.5 Linear Structure and Alignment on the Surface of Substrates; 1.6 Stacking in the Solid and Colloid; 1.7 Chemical Reactivity and Catalysis; 1.7.1 Metal Complexes and Modification of Nitrogen<br>1.8 Electronic and Optical Devices (ECD, Battery, EL, Diode, Transistor, Nonlinear Optical Device, etc.)1.8.1 Redox Functions; 1.8.2 Electronic and Optical Devices; 1.9 Conclusions; References; 2 Catalyst-Transfer Condensation Polymerization for Precision Synthesis of -Conjugated Polymers; 2.1 Introduction; 2.2 Kumada-Tamao Coupling Polymerization with Ni Catalyst; 2.2.1 Polythiophene; 2.2.1.1 Discovery and Mechanism of Catalyst-Transfer Condensation Polymerization; 2.2.1.2 A Variety of Monomers; 2.2.1.3 Block Polythiophenes; 2.2.1.4 Block Copolymers of Polythiophene and Other Polymers<br>2.2.1.5 Graft Copolymers2.2.2 Polyphenylenes; 2.2.3 Polypyrroles; 2.2.4 Polyfluorenes and Polycarbazoles; 2.3 Suzuki-Miyaura Coupling Polymerization with Pd Catalyst; 2.3.1 Polyfluorenes; 2.3.2 Polyphenylenes; 2.4 Conclusion; References; 3 Regioregular and |

Regiosymmetric Polythiophenes; 3.1 Introduction; 3.2 Synthesis of Polythiophene and Regioirregular Polythiophenes; 3.3 Head-to-Tail Coupled Regioregular Poly(3-Alkylthiophene)s; 3.3.1 Design and Synthesis of rrP3ATs; 3.3.1.1 McCullough Method; 3.3.1.2 Rieke Method; 3.3.1.3 GRIM Method; 3.3.1.4 Palladium-Catalyzed Polymerization Methods  
 3.3.2 Mechanism of the Nickel-Catalyzed Polymerization  
 3.4 Side Chain Functionalized HT Regioregular Polythiophenes; 3.4.1 Heteroatom-Containing Groups; 3.4.2 Aromatic-Containing Group; 3.4.3 Chiral Groups; 3.4.4 -Functionalized Groups; 3.5 End Group Functionalized HT Regioregular Polythiophenes; 3.5.1 Postpolymerization End Group Functionalization; 3.5.2 In Situ End Group Functionalization; 3.6 Block Copolymers Derived from HT Regioregular Polythiophenes; 3.6.1 All-Conjugated Block Copolymers; 3.6.2 Conjugated-Non-Conjugated Block Copolymers; 3.7 Universal Use of the GRIM Method  
 3.8 Regiosymmetric Polythiophenes  
 3.9 Summary; References; 4 Functional Hyperbranched Polymers Constructed from Acetylenic An-Type Building Blocks; 4.1 Introduction; 4.2 Hyperbranched Polymers Constructed from Acetylenic An-Type Building Blocks; 4.2.1 Hyperbranched Poly(Alkylphenylene)s (hb-PAPs); 4.2.1.1 Synthesis; 4.2.1.2 Structures; 4.2.1.3 Properties; 4.2.2 Hyperbranched Poly(Arylenophenylene)s (hb-PAPs); 4.2.2.1 Synthesis; 4.2.2.2 Structures; 4.2.2.3 Properties; 4.2.3 Hyperbranched Poly(Aroylphenylene)s (hb-PAKPs) and Poly(Aroxycarbonylphenylene)s (hb-PAePs); 4.2.3.1 Synthesis  
 4.2.3.2 Structures

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## Sommario/riassunto

Edited and authored by top international experts, this first book on conjugated polymers with a focus on synthesis provides a detailed overview of all modern synthetic methods for these highly interesting compounds.

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