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2.8 Inverse Electron Demand Diels-Alder2.9 Cycloadditions Involving Nitrile Oxides; 2.10 Oxime Formation; 2.11 Tetrazole-Ene Reaction; 2.12 Concluding Remarks; References; 3 Synthesis and Self-Assembly of Hydrogen-Bonded Supramolecular Polymers; 3.1 Introduction; 3.1.1 Dynamics of Hydrogen Bonds; 3.1.2 Other Experimental Methods in Supramolecular Polymer Science; 3.2 Synthetic Strategies Towards Hydrogen-Bonded Supramolecular Polymers; 3.2.1 Carbocationic Polymerization; 3.2.2 Anionic Polymerization; 3.2.3 Ring-Opening Metathesis Polymerization (ROMP)
3.2.4 Controlled Radical Polymerization (CRP)3.2.5 Polycondensation Methods; 3.2.6 Ring-Opening Polymerization (ROP); 3.2.7 Other Postmodification Methods; 3.3 Self-Assembly of Supramolecular Polymers via Hydrogen Bonds; 3.3.1 Microphase-Separated H-Bonded Polymers: Towards Pseudoblock Copolymers; 3.3.2 Ordering on Surfaces; 3.3.3 Small-Molecule Ordering into Polymers via H Bonds; 3.3.4 Applications of H-Bonded Supramolecular Polymers; 3.4 Conclusions and Outlook; Acknowledgment; References; 4 Recent Synthetic Developments in Miktoarm Star Polymers with More than Three Different Arms
4.1 Introduction4.2 Miktoarm Star-Branched Polymers up to 2000; 4.3 Novel and Versatile Methodology Based on an "Iterative Approach" for Miktoarm Star Polymer Syntheses; 4.3.1 Iterative Methodology with Regeneration of DPE Function; 4.3.2 Iterative Methodology with Regeneration of Two or More DPE Functions; 4.3.3 Iterative Methodology with Regeneration of 1,3-Butadiene Function; 4.3.4 Iterative Methodology with Regeneration of Benzyl Bromide Function; 4.3.5 Convergent Synthesis of Miktoarm Star-Branched Polymers Using Polymer Anions
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Sommario/riassunto

The field of CMA (complex macromolecular architecture) stands at the cutting edge of materials science, and has been a locus of intense research activity in recent years. This book gives an extensive description of the synthesis, characterization, and self-assembly of recently-developed advanced architectural materials with a number of potential applications. The architectural polymers, including bio-conjugated hybrid polymers with poly(amino acid)s and gluco-polymers, star-branched and dendrimer-like hyperbranched polymers, cyclic polymers, dendrigraft polymers, rod-coil and helix-coil b