Complex macromolecular architectures : synthesis, characterization, and self-assembly

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Abstrak

Despite very active research activities in the field of CMA, there lacks a simple-to-read book for researchers and students interested in these new developments. In each chapter, current progress in the area of the synthesis, characterization, and self-assemblies of well-defined complex macromolecular architectures is reviewed by each contributor with relevant emphasis on their research topics. The architectural polymers include 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 block copolymers are introduced chapter by chapter in the book. In particular, the book also emphasizes the topic of synthetic breakthroughs by living/controlled polymerization since 2000. Newly developed concepts and procedures, such as "Click" chemistry, chain walking, polyhomologation and ADMET are also highlighted. Furthermore, renowned authors contribute on such special topics as helical polyisocyanates, metallopolymers, stereospecific polymers, hydrogen-bonded supramolecular polymers, conjugated polymers, and polyrotaxanes, which have attracted considerable interest as novel polymer materials with potential future applications. In addition, recent advances in reactive blending achieved with well-defined end-functionalized polymers is discussed from an industrial point of view. Moreover, topics on polymer-based nanotechnologies, including self-assembled architectures and suprastructures, nano-structured materials and devices, nanofabrication, surface nanostructures, and their AFM imaging analysis of hetero-phased polymers are included"--
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