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Sommario/riassunto

This handbook presents recent advances and offers a comprehensive reference resource covering the developments in and applications of macrocyclic supramolecular assembly, with a focus on their construction, structural characters and biological functions. The main topics addressed include: Construction and structure of macrocyclic supramolecular assembly – key building blocks, construction methods, structural motifs, and stimuli responsive control Approach and technology – controllable synthesis, molecular recognition, spectral and thermodynamic study, supramolecular assembly at interfaces, orthogonal self-assembly, the supramolecular organic framwork (SOF), molecular induced aggregation, supramolecule assisted 3D printing, theoretical calculation and molecular simulation Biological applications – chemical and biological sensing, theranostic tools, molecule/ion channels, drug/gene delivery, supramolecule assisted biomolecule production, supramolecule assisted transmembrane transport, supramolecule assisted immunity regulation, supramolecule-based medicinal drug, etc. This handbook appeals to graduate and undergraduate students as well as scientists with interests in supramolecular chemistry, biochemistry, functional material and nanotechnology.