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Nota di contenuto	Part 1: Molecular Architectonics and Nanoarchitectonics -- Chapter 1: Molecular architectonics -- Chapter 2: Nanoarchitectonics -- Part 2: Architectonics of functional molecules -- Chapter 3: Topological Supramolecular Polymer -- Chapter 4: Molecular architectonics guide the fabrication of self-cleaning materials -- Chapter 5: Functional discotic liquid crystals through molecular self-assembly: Towards efficient charge transport systems -- Part 3: Architectonics of peptides -- Chapter 6: Dopamine-based materials: recent advances in synthesis methods and applications -- Chapter 7: Peptide-based nanoarchitectonics: Self-assembly and biological applications -- Chapter 8: Peptide cross-b nanoarchitectures: characterizing self-

Assembly mechanisms, structure and physicochemical properties -- Chapter 9: Function-inspired design of molecular hydrogels: Paradigm shifting biomaterials for biomedical applications -- Chapter 10: Smart peptide assembly architectures to mimic biology's adaptive properties and applications -- Part 4: Architectonics of nucleic acids -- Chapter 11: Bio-inspired functional DNA architectures -- Chapter 12: Functional molecule templated DNA molecular architectonics -- Chapter 13: Architectures of nucleolipid assemblies and their applications -- Chapter 14: Nucleobase and DNA functionalized hydrogels and their applications -- Chapter 15: RNA nanoarchitectures and their applications -- Part 5: Architectonics of complex systems and advanced objects -- Chapter 16: Covalent organic frameworks as tunable supports for HER, OER and ORR catalysts- a new addition to heterogeneous electrocatalysts -- Chapter 17: Ligand functionalised nanostructures and their biomedical applications -- Chapter 18: Biomimetic composite materials and their biological applications -- Chapter 19: Combining polymers, nanomaterials, and biomolecules: Nanostructured films with functional properties and applications -- Chapter 20: Responsive polymeric architectures and their biomaterial applications.

Sommario/riassunto

This book is the ultimate assembly of recent research activities on molecular architectonics and nanoarchitectonics by authors who are worldwide experts. The book proposes new ways of creating functional materials at the nano level using the concepts of molecular architectonics and nanoarchitectonics, which are expected to be the next-generation approaches beyond conventional nanotechnology. All the contents are categorized by types of materials, organic materials, biomaterials, and nanomaterials. For that reason, non-specialists including graduate and undergraduate students can start reading the book from any points they would like. Cutting-edge trends in nanotechnology and material sciences are easily visible in the contents of the book, which is highly useful for both students and experimental materials scientists. .