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Nota di contenuto	Chapter 1. Nanozymes: Biomedical Applications of Enzymatic Fe ₃ O ₄ Nanoparticles From In Vitro to In Vivo -- Chapter 2. DNA Nanotechnology for Building Sensors, Nanopores and Ion-Channels -- Chapter 3. Bio Mimicking of Extracellular Matrix -- Chapter 4. Self-Assembly of Ferritin: Structure, Biological Function and Potential Applications in Nanotechnology -- Chapter 5. Dynamics and Control of Peptide Self-Assembly and Aggregation -- Chapter 6. Peptide Self-Assembly and its Modulation: Imaging on the Nanoscale -- Chapter 7. The Kinetics, Thermodynamics and Mechanisms of Short Aromatic Peptide Self-Assembly -- Chapter 8. Bacterial Amyloids: Biogenesis and Biomaterials -- Chapter 9. Fungal Hydrophobins and Their Self-Assembly into Functional Nanomaterials -- Chapter 10. Nanostructured, Self-Assembled Spider Silk Materials for Biomedical Applications -- Chapter 11. Protein Microgels from Amyloid Fibril Networks -- Chapter 12. Protein Nanofibrils as Storage Forms of Peptide Drugs and Hormones -- Chapter 13. Bioinspired Engineering of

Organ-on-Chip Devices.

Sommario/riassunto

This book summarizes naturally occurring and designed bio-inspired molecular building blocks assembled into nanoscale structures. It covers a fascinating array of biomimetic and bioinspired materials, including inorganic nanozymes, structures formed by DNA origami, a wide range of peptide and protein-based nanomaterials, as well as their applications in diagnostics and therapeutics. The book elucidates the mechanism of assembly of these materials and characterisation of their mechanical and physico-chemical properties which inspires readers not only to exploit the potential applications of nanomaterials, but also to understand their potential risks and benefits. It will be of interest to a broad audience of students and researchers spanning the disciplines of biology, chemistry, engineering, materials science, and physics.
