

Biomimetic Nanomaterials

Inorganic and Macromolecular structures, Catalytic Processes

An accurate and authoritative discussion of the structure, fabrication, and applications of biomimetic materials

In "Biomimetic Nanomaterials: Inorganic and Macromolecular Structures, Catalytic Processes", a team of distinguished researchers delivers an up-to-date discussion of select emerging topics in nature-inspired approaches to biomimetic nanomaterials. The authors focus on two core subjects: mimicking biological structures and replicating biological functions.

The book begins with an exploration of bio-inorganic structures and biomineralization processes, including biominerals and bio-inspired architectures like aerogels and chiral nanoparticles. It continues on to discuss biomacromolecule-based materials and synthetic mimics, as well as their structural and functional attributes. Finally, it covers bio-inspired functional materials, including nanozymes and catalytic systems for applications, like artificial photosynthesis, CO₂ conversion, and N₂ fixation.

Readers will also find:

- * A thorough introduction to the foundational concepts and the latest developments in biomimetic nanomaterials
- * Comprehensive explorations of the latest applications of biomimetic nanomaterials, including artificial muscles, protective coatings, and catalytic processes
- * Practical discussions of the structures of biomimetic inorganic nanomaterials, like biominerals, biomorphs, artificial plastic materials, and chiral nanoparticles
- * Complete treatments of particularly remarkable uses of biomimetic materials, including water splitting catalysis nanozymes

Perfect for materials scientists, bioinorganic chemists, and biotechnologists, Biomimetic Nanomaterials will also benefit bioengineers, polymer chemists, and biochemists.

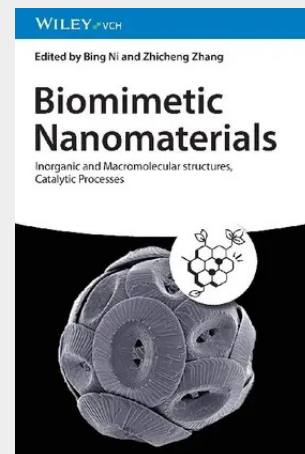
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