1. Record Nr. UNINA990004046790403321

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Titolo	Scritti di storia : movimento socialista e democrazia / Leo Valiani ; a cura di Franco Marcoaldi
Pubbl/distr/stampa	Milano : Sugarco, c1983
Descrizione fisica	637 p. ; 21 cm
Collana	Argomenti ; 96
Disciplina	324.24074
Locazione	FLFBC
Collocazione	324.24 VAL 2
Lingua di pubblicazione	Italiano
Formato	Materiale a stampa
Livello bibliografico	Monografia

2. Record Nr. UNINA9910144377803321

Titolo	Bio-inorganic hybrid nanomaterials : strategies, syntheses, characterization and applications / / edited by Eduardo Ruiz-Hitzky, Katsuhiko Ariga and Yuri M. Lvov
Pubbl/distr/stampa	Weinheim, Germany : , : Wiley-VCH Verlag GmbH & Co. KGaA, , 2008 ©2008
ISBN	1-282-78429-3 9786612784293 3-527-62144-X 3-527-62145-8
Descrizione fisica	1 online resource (523 p.)
Disciplina	620.5
Soggetti	Nanostructured materials Inorganic compounds Bioinorganic chemistry Electronic books.
Lingua di pubblicazione	Inglese

Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references at the end of each chaptes and index.
Nota di contenuto	Bio-inorganic Hybrid Nanomaterials; Contents; Preface; Contributors; 1 An Introduction to Bio-nanohybrid Materials; 1.1 Introduction: The Assembly of Biological Species to Inorganic Solids; 1.2 Bio-nanohybrids Based on Silica Particles and Siloxane Networks; 1.3 Calcium Phosphates and Carbonates in Bioinspired and Biomimetic Materials; 1.4 Clay Minerals and Organoclay Bio-nanocomposites; 1.5 Bio-Nanohybrids Based on Metal and Metal Oxide Nanoparticles; 1.6 Carbon-based Bio-nanohybrids; 1.7 Bio-nanohybrids Based on Layered Transition Metal Solids; 1.8 Trends and Perspectives; References 2 Biomimetic Nanohybrids Based on Organosiloxane Units2.1 Introduction; 2.2 Monolayer on Solid Support; 2.3 Layered Alkylsiloxane; 2.4 Organic-Inorganic Hybrid Vesicle "Cerasome"; 2.5 Mesoporous Silica Prepared by the Lizard Template Method; 2.6 Future Perspectives; References; 3 Entrapment of Biopolymers into Sol-Gel-derived Silica Nanonocomposites; 3.1 Introduction; 3.2 Sol-Gel Processes; 3.2.1 Chemistry; 3.2.1.1 Hydrolysis; 3.2.1.2 Condensation; 3.2.1.3 Sol-Gel Transition; 3.2.2 Silica Precursors; 3.2.2.1 Orthosilicic Acid; 3.2.2.2 Sodium Metasilicate; 3.2.2.3 Alkoxides 3.2.3 Two-Stage Approach to Biopolymer Entrapment3.3 Biocompatible Approaches; 3.3.1 Modified Sol-Gel Processing; 3.3.1.1 Method of Gill and Ballesteros; 3.3.1.2 Low-Molecular and Polymeric Organic Additives; 3.3.2 Organically-modified Precursors; 3.3.3 Biocompatible Precursors by Brennan et al.; 3.4 One-Stage Approach Based on a Silica Precursor with Ethylene Glycol Residues; 3.4.1 Precursor; 3.4.2 Role of Biopolymers in Sol-Gel Processing; 3.4.3 Advantages of One-Stage Processes; 3.4.4 Hybrid Biopolymer-Silica Nanocomposite Materials; 3.4.5 Enzyme Immobilization; 3.5 Perspectives References4 Immobilization of Biomolecules on Mesoporous Structured Materials; 4.1 Introduction; 4.2 Immobilization of Protein on Mesoporous Silica; 4.3 Immobilization of Protein on Mesoporous Carbon and Related Materials; 4.4 Immobilization of Other Biopolymers on Mesoporous Materials; 4.5 Immobilization of Small Biomolecules on Mesoporous Materials; 4.6 Advanced Functions of Nanohybrids of Biomolecules and Mesoporous Materials; 4.7 Future Perspectives; References; 5 Bio-controlled Growth of Oxides and Metallic Nanoparticles; 5.1 Introduction; 5.2 Biomimetic Approaches 5.3 In vitro Synthesis of Hybrid Nanomaterials5.3.1 Polysaccharides; 5.3.1.1 Alginates; 5.3.1.2 Carrageenans; 5.3.1.3 Chitosan; 5.3.2 Proteins; 5.3.2.1 Gelatin; 5.3.2.2 Collagen; 5.3.2.3 Protein Cages and Viral Capsids; 5.3.3 Lipids; 5.3.4 DNA Scaffolds; 5.4 Perspectives: Towards a "Green Nanochemistry"; References; 6 Biomineralization of Hydrogels Based on Bioinspired Assemblies for Injectable Biomaterials; 6.1 Introduction; 6.1.1 Biominerals as Nanomaterials; 6.1.2 Nanomaterials for Biofunctions; 6.2 Fundamental Concept of Bioinspired Approach; 6.2.1 Bioinspired Approach to Materials 6.2.2 Concrete Examples of the Bioinspired Approach
Sommario/riassunto	This ready reference is the first to collate the interdisciplinary knowledge from materials science, bioengineering and nanotechnology to give an in-depth overview of the topic. As such, it provides broad coverage of combinations between inorganic materials and such key biological structures as proteins, enzymes, DNA, or biopolymers. With its treatment of various application directions, including bioelectronic

interfacing, tissue repair, porous membranes, sensors, nanocontainers, and DNA engineering, this is essential reading for materials engineers, medical researchers, catalytic chemists, bi