

1. Record Nr.	UNINA9910786394903321
Titolo	Biomedical applications of smart materials, nanotechnology and micro/nano engineering // edited by Pietro Vincenzini, Danilo De Rossi
Pubbl/distr/stampa	Stafa-Zuerich, Switzerland ; ; Uk : , : Trans Tech Publications Ltd, , [2008] ©2008
ISBN	3-03813-228-4
Descrizione fisica	1 online resource (282 p.)
Collana	Advances in science and technology, , 1661-819X ; ; volume 57
Altri autori (Persone)	VincenziniP. <1939-> De RossiDanilo E
Disciplina	620.11
Soggetti	Smart materials Smart structures Nanotechnology
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Volume 4 of 8 volumes from the 3rd International Conference "Smart Materials, Structures and Systems". "Biomedical Applications of Smart Materials, Nanotechnology and Micro/Nano Engineering." Advances in science and technology, 57. Proceedings of symposium D "Biomedical Applications of Smart Materials, Nanotechnology and Micro/Nano Engineering" of CIMTEC 2008 - 3rd International Conference "Smart Materials, Structures and Systems", held in Acireale, Sicily, Italy, June 8-13 2008."
Nota di bibliografia	Includes bibliographical references and indexes.
Nota di contenuto	Biomedical Applications of Smart Materials; Committees; Preface; Table of Contents; CHAPTER 1: ADVANCES IN SMART MATERIALS SYNTHESIS AND FUNCTIONALITY; Self-Oscillating Gel as Smart Materials; Bioinspired Polymer Surfaces for Nanodevices and Nanomedicine; Smart Hydrogels that Respond to Target Biomolecules; Encouraging Nature with Ceramics: The Roles of Surface Roughness and Physio-Chemistry on Cell Response to Substituted Apatites; Synthesis of Bioactive Hydroxyapatite-Zirconia Toughened Composites for Bone Replacement Photoluminescence Response and Particle Size Control of CdSe Quantum Dots by Wet Chemical Synthesis for Biomedical Applications Purification, Dispersion and Biofunctionalization of Singlewall Carbon Nanotubes; CHAPTER 2: ENABLING TOOLS; Biomedical Applications of

Micro-Nano-Technologies; Microsystems for Blood Cell Counting; The Effect of Magnetic Field on Magnetotactic Bacteria Behaviors; Low Voltage Microgripper for Single Cell Manipulation; Simulation of Water Flow in a Coated Nano Pore by a Molecular Dynamics; CHAPTER 3: MEDICAL DIAGNOSTIC APPLICATIONS
Wearable Biosensors for Monitoring Wound Healing Intelligent Wearable Systems Achievements, Challenges and Perspectives; Artificial Control of the Bacterial Cell-to-Cell Communication with Autoinducer Recognition Gel; Ultrasonic Transducer Based on -PVDF for Fluidic Microagitation in a Lab-on-a-Chip Device; Fabrication of a Microfluidic Device for the Detection of a Specific Biomolecule; Thin Film Microsensor for Electrical and Optical Blood Diagnostics; CHAPTER 4: REGENERATIVE MEDICINE AND TISSUE ENGINEERING
Novel Nitrogen Rich Polymers and Chitosan for Tissue Engineering of Intervertebral Discs Electrospun Nanofibre Membranes as Wound Dressing Materials; Fabrication of Titanium Fiber Scaffold for Biomaterial Use; Fabrication of -TCP, HA Functionally Graded Porous Beads; Addition of Surface Function to Zirconia for Biomaterial Use; CHAPTER 5: NEW THERAPEUTICS AND INTELLIGENT DELIVER SYSTEMS; Supramolecular Approach to Gene Delivery; A New Drug Vehicle - Lipid Coated Biodegradable Nanoparticles; Base Invaders. Coupling Experiments and Multiscale Modeling of Dendrimer-Based siRNA Delivery Agents
Trastuzumab Decorated Nanoparticles for Targeted Chemotherapy of Breast Cancer Inhibition of Alzheimer Amyloid Aggregation with Sulfate Glycopolymers; Electrical Field Responsive Polypyrole in Poly(Acrylic Acid) Hydrogel for Transdermal Drug Delivery; Preparation and Characterization of Highly Water Soluble Drug Loaded PLA Microcapsules; Effect of Electric Field Strength on the Diffusion of Salicylic Acid through Polyacrylamide Hydrogels; New Antibacterial, Antiadhesive Films Based on Self Assemblies of Modified Tetraetherlipids; CHAPTER 6: MINI / MICRO IMPLANTABLE DEVICES Energy Efficient Biomedical Signal Processing in Implantable Devices

Sommario/riassunto

A collection of 42 peer-reviewed papers which, together, represent an authoritative survey of "Biomedical Applications of Smart Materials". The papers are grouped under the headings: chapter 1: Advances in smart materials synthesis and functionality; chapter 2: Enabling tools; chapter 3: Medical diagnostic applications; chapter 4: Regenerative medicine and tissue engineering; chapter 5: New therapeutics and intelligent delivery systems; chapter 6: Mini / micro implantable devices; chapter 7: Medical applications of shape memory materials and smart textiles. This special volume has also been
