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| Collana                 | Advances in science and technology, , 1661-819X ; ; volume 57  |
| Altri autori (Persone)  | VincenziniP. <1939-><br>De RossiDanilo E   |
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| 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, HAp 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 Polypyrrole 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

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### 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

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