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Titolo	Handbook of Nanoelectrochemistry : Electrochemical Synthesis Methods, Properties, and Characterization Techniques // edited by Mahmood Aliofkhazraei, Abdel Salam Hamdy Makhlouf
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Nota di contenuto	Anodically Grown TiO ₂ Nanotube Membranes: Synthesis, Characterization and Application in Dye-Sensitized Solar Cells -- Application of Two-Dimensional Heisenberg Model to Electrochemical Nucleation Theory -- Bio-composite Nanomaterials for Electrochemical Biosensors -- Characterization of Metallic Micro(nano)cluster-Based Contacts for High-Effective Photovoltaic Devices -- Development of Nanostructures by Electrochemical Method for Chemical Sensors -- Electrochemical Control of the Core-Shell Cobalt-Platinum Nanoparticles -- Electrochemical Fabrication of Graphene-Based Nanomaterials -- Electrochemical Fabrication of Multi-Nano-Layers -- Electrochemical Fabrication of Nanostructures -- Electrochemical Preparation of Nanoresonators -- Electrochemical Sensors Based on Nanostructured Materials -- Electrochemical Synthesis of Metal Chalcogenide Nanorods, Nanotubes, Segmented Nanorods and Co-axial Nanorods -- Electrochemically Fabricated Nanostructures in Energy Storage and Conversion Applications -- Electrodeposited Zn-Nanoparticles Composite Coatings for Corrosion Protection of Steel -- Electrodeposition of ZnO: Growth, Doping, and Physical Properties --

Electrodeposition to Produce Advanced Nanostructures for Electrochemical Capacitors -- Electroforming and Electrodeposition on Complex 3D Geometries: Special Requirements and New Methods -- Electroless Nanocomposite Coatings: Synthesis, Characteristics and Applications -- Electron Transfer and Charge Storage in Thin Films of Nanoparticles -- Electrophoretic Deposition (EPD): Fundamentals and Applications from Nano- to Micro-Scale Structures -- Formation and Characterization of Bimetallic Nanoparticles in Electrochemistry -- Formation and Characterization of Nanomaterials in Electrochemistry -- Frontiers of Nanoelectrochemistry and Application of Nanotechnology: A Vision for the Future -- Implementation of Nanostructured Catalysts in the Electrochemical Promotion of Catalysis -- Metal Oxide Nanoparticle Engineering for Printed Electrochemical Applications -- Microstructural Aspects of Ionic Conductivity in Nanocrystalline Zirconia -- Modelling of Metal Electrodeposition at the Nanoscale -- Nanomaterials in Analytical Bioelectrochemistry -- Nanomaterials Produced by Electrocrystallization Method -- Nanomaterials in Solar Cells -- Nanoporous Anodic Aluminum Oxide: Fabrication, Characterization and Applications -- Nanoscale Electrodeposition of Metals and Semiconductors from Ionic Liquids Probed by Scanning Tunneling Microscopy -- Nanostructured Hybrid Graphene-Conducting Polymers for Electrochemical Supercapacitor Electrodes -- Nanostructured Transition Metal Oxides Produced by Electrodeposition for Application as Redox Electrodes for Supercapacitors -- New Approaches to the Study of Spinel Ferrite Nanoparticles for Biomedical Applications -- New Insights in Nano-electrodeposition: An Electrochemical Aggregative Growth Mechanism -- Plasmonic Nanostructured Supports for Spectro-Electrochemistry of Enzymes on Electrodes -- Porous Indium Phosphide: Preparation and Properties -- Recent Advances in Synthesis, Modification and Applications of TiO₂ Nanotube Arrays by Electrochemical Anodization -- Recent Approaches for Designing Nanomaterials-Based Coatings for Corrosion Protection -- Scanning Electrochemical Microscopy: A Multiplexing Tool for Electrochemical DNA Biosensing -- Self-Assembled Functionalized Metallic Nanoparticles Template Toward Tailoring the Properties of Electrochemically Deposited Metallic Nanostructure -- Self-Assembled Monolayers on Nano-structured Composites for Electrochemical Sensing Applications -- Self-Assembled Peptide Nanostructures for the Development of Electrochemical Biosensors -- Self-Organized Nano- and Micro-structure of Electrochemical Materials by Design of Fabrication Approaches -- Self-Organized Nanostructures -- Synthesis, Modification and Characterization of Nanocarbon Electrodes for Determination of Nucleic Acids -- The Electrochemistry of Peptide Self-Assembled Monolayers -- Wet Chemical Approaches for Chemical Functionalization of Silicon and Titanium Nanomaterials.

Sommario/riassunto

This edited book is devoted to different electrochemical aspects of nano materials. This comprehensive reference text is basically divided in 3 parts: electrochemical synthesis routes for nanosized materials, electrochemical properties of nano materials and electrochemical characterization methods for nanostructures. The Handbook is a reference work to chemists and materials scientists interested in the nano aspects of electrochemistry. The chapters are written by a number of international experts in the field and the content will assist members of both electrochemical and materials communities to keep abreast of developments in the field.
