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Nota di contenuto	Advances in Nanomaterials and Nanostructures; Contents; Preface; CONTROLLED PROCESSING OF NANOPARTICLE-BASED MATERIALS AND NANOSTRUCTURED FILMS; Effect of Focused Ion Beam Patterning on Enlarging Anodization Window and Interpore Distance for Ordered Porous Anodic Alumina; Thin Films of TiO <sub>2</sub> with Au Nanoparticles for Photocatalytic Degradation of Methylene Blue; New Entropic Routes for Nano-Bands and Nano-Particles; Photoinduced Shape Evolution of Silver Nanoparticles: From Nanospheres to Hexagonal and Triangular Nanoprisms; Synthesis of CdS Nanocrystals Stabilized with Sodium Citrate Freezing Behavior and Properties of Freeze Cast Kaolinite-Silica Porous NanocompositeControlling the Size of Magnetic Nanoparticles for Drug

Applications; Chemical Growth and Optoelectronic Characteristics of TiO<sub>2</sub> Thin Film; Synthesis of Manganese Oxides Nanocompounds for Electrodes in Electrochemical Capacitors; NANOTECHNOLOGY FOR ENERGY, HEALTHCARE AND INDUSTRY; Finite Element Modeling of Sapphire Photonic Crystal Fibers; Magnetically-Driven Release Media Comprising of Carbon Nanotube-Nickel/Nickel Oxide Core/Shell Nanoparticle Heterostructures Incorporated in Polyvinyl Alcohol Single-Walled Carbon Nanotube Dispersion Structures for Improved Energy Density in Supercapacitors; The Mechanochemical Formation of Functionalized Semiconductor Nanoparticles for Biological, Electronic and Superhydrophobic Surface Applications; Synthesis of ZnO Nanostructures and Their Influence on Photoelectrochemical Response for Solar Driven Water Splitting to Produce Hydrogen; Capped CoFe<sub>2</sub>O<sub>4</sub> Nanoparticles: Non-Hydrolytic Synthesis, Characterization, and Potential Applications as Magnetic Extractants and in Ferrofluids Nanomaterial Fiber Optic Sensors in Healthcare and Industry Applications; Plasmonic Silver Nanoparticles for Energy and Optoelectronic Applications; NANOLAMINATED TERNARY CARBIDES; Tribofilm Formation using Ti<sub>2</sub>AlC Material; Author Index

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#### Sommario/riassunto

This book contains 17 papers from the Controlled Processing of Nanoparticle-based Materials and Nanostructured Films; Nanotechnology for Energy, Healthcare, and Industry; and Nanolaminated Ternary Carbides and Nitrides (MAX Phases) symposia held during the 2010 Materials Science and Technology (MS&T'10) meeting, October 17-21, 2010, Houston, Texas. Topics include: Direct Manufacturing; Low Dimension Nanomaterials; Processing and Sintering; Thin Films; Nanolaminated Ternary Carbides and Nitrides (MAX Phases); and Novel Nanomaterial Approaches.

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