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Nota di contenuto	Synthesis of Nano-Catalysts in Flow Conditions Using Millimixers / Changdong Li, Maoshuai Li, Andre C. van Veen -- Influence of Hydrodynamics on Wet Syntheses of Nanomaterials / Nicholas Jose, Alexei Lapkin -- Advanced Size-Selected Catalysts Prepared by Laser Electrodispersion / Tatiana N. Rostovshchikova, Ekaterina S. Lokteva, Elena V. Golubina, Konstantin I. Maslakov, Sergey A Gurevich, Denis A. Yavsin, Vladimir M. Kozhevin -- Ruthenium Nanomaterials: An Overview of Recent Developments in Colloidal Synthesis, Properties, and Potential Applications / Irina L. Simakova, Dmitry Yu. Murzin -- Ag-Containing Nanomaterials in Heterogeneous Catalysis: Advances and Recent Trends / Olga V. Vodyankina, Grigory V. Mamontov, Valery V. Dutov, Tamara S. Kharlamova, Mikhail A. Salaev -- How Does the Surface Structure of Ni-Fe Nanoalloys Control Carbon Formation During Methane Steam/Dry Reforming? / Stavros Alexandros Theofanidis, Hilde Poelman, Guy B. Marin, Vladimir V. Galvita -- Recent Applications of Nanometal Oxide Catalysts in Oxidation Reactions / V. Cortes Corberan, V. Rives, V. Stathopoulos -- Particle-Size Effect in Catalytic Oxidation Over Pt Nanoparticles / Alexandr Yu. Stakheev, Dmitry A. Bokarev, Igor P. Prosvirin, Valerii I. Bukhtiyarov -- Novel Zeolite Catalysts for Methanol to Hydrocarbon Transformation / Evgeny Rebrov, Guannan Hu -- Semiconductor Photocatalysts Based on Nanostructured Cd ₁₂ xZnxS Solid Solutions in the Reaction of Hydrogen Evolution From Aqueous Solutions of Inorganic Electron Donors Under

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Nanocomposite Alkali-Ion Solid Electrolytes / Nikolai F. Uvarov, Artem
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Conducting Perovskites as Nanostructured Ferroelastics / Irina V.
Belenkaya, Olga A. Bragina, Alexander P. Nemudry.

Sommario/riassunto

"Advanced Nanomaterials for Catalysis and Energy: Synthesis, Characterization and Applications outlines new approaches to the synthesis of nanomaterials (synthesis in flow conditions, laser electrodispersion of single metals or alloys on carbon or oxide supports, mechanochemistry, sol-gel routes, etc.) to provide systems with a narrow particle size distribution, controlled metal-support interaction and nanocomposites with uniform spatial distribution of domains of different phases, even in dense sintered materials. Methods for characterization of real structure and surface properties of nanomaterials are discussed, including synchrotron radiation diffraction and X-ray photoelectron spectroscopy studies, neutronography, transmission/scanning electron microscopy with elemental analysis, and more. The book covers the effect of nanosystems' composition, bulk and surface properties, metal-support interaction, particle size and morphology, deposition density, etc. on their functional properties (transport features, catalytic activity and reaction mechanism). Finally, it includes examples of various developed nanostructured solid electrolytes and mixed ionic-electronic conductors as materials in solid oxide fuel cells and asymmetric supported membranes for oxygen and hydrogen separation."--
