DESCRIPTION

Current oxide nanomaterials knowledge to draw from and build on

Synthesis, Properties, and Applications of Oxide Nanomaterials summarizes the existing knowledge in oxide-based materials research. It gives researchers one comprehensive resource that consolidates general theoretical knowledge alongside practical applications. Organized by topic for easy access, this reference:

* Covers the fundamental science, synthesis, characterization, physicochemical properties, and applications of oxide nanomaterials

* Explains the fundamental aspects (quantum-mechanical and thermodynamic) that determine the behavior and growth mode of nanostructured oxides

* Examines synthetic procedures using top-down and bottom-up fabrication technologies involving liquid-solid or gas-solid transformations

* Discusses the sophisticated experimental techniques and state-of-the-art theory used to characterize the structural and electronic properties of nanostructured oxides

* Describes applications such as sorbents, sensors, ceramic materials, electrochemical and photochemical devices, and catalysts for reducing environmental pollution, transforming hydrocarbons, and producing hydrogen
With its combination of theory and real-world applications plus extensive bibliographic references, Synthesis, Properties, and Applications of Oxide Nanomaterials consolidates a wealth of current, complex information in one volume for practicing chemists, physicists, and materials scientists, and for engineers and researchers in government, industry, and academia. It's also an outstanding reference for graduate students in chemistry, chemical engineering, physics, and materials science.

ABOUT THE AUTHOR

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