DESCRIPTION

A comprehensive reference on nanoscale materials chemistry—now revised and updated.

This extensive text provides twenty-two revised chapters on the preparations, applications, and characterization as well as the environmental and toxicological aspects of nanoscale materials, with an emphasis on the chemistry component. This *Second Edition* contains core topics including:

- New synthetic methods for nanomaterials
- Nanostructured solids
- Organized two- and three-dimensional nanocrystals
- Nanotubes, ribbons, and sheets
- Nanocatalysts, sorbents, and energy applications
- Unique physical properties of nanomaterials
- Photochemistry of nanomaterials
• Biological and environmental aspects of nanomaterials

With input from top experts in the field, such as Bruce Dunn, Vicki Grassian, Warren Ford, and Chris Sorensen, among others, *Nanoscale Materials in Chemistry* presents a balanced survey of different topics in basic nanoparticle science, and includes helpful end-of-chapter questions and answers. Significantly expanded, the *Second Edition* remains a key text for understanding the fundamentals of nanoscale materials chemistry and a reliable resource for scientists and researchers.

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**ABOUT THE AUTHOR**

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**NEW TO EDITION**

Contains up-to-date treatment of such topics as:

• new synthetic methodologies for preparation of nanomaterials (including sonochemistry, microwaves, metal nitrides, nanorods, etc)

• expanded coverage to include nanostructured porous solids, such as mesporous and microporous materials

• organized two- and three- dimensional nanocrystals, such as inorganic-organic composites, bionanostructures, DNA chips, organized nanofilms and organized nanostructures.

• nanotubes, ribbons, and sheets

• nanocatalysts and sorbents, such as reactive nanomaterials, colloidal metal catalysts, and reactive metal oxide catalysts

• unique physical properties of nanomaterials including optical, magnetic, electronic, and use in batteries

• photochemistry of nanometerials, including photofunctional zeolites
• and the important environmental aspects of nanomaterials (e.g., for remediation, toxicity of)

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