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.

### ABOUT THE AUTHOR

KENNETH J. KLABUNDE, PhD, is the University Distinguished Professor at Kansas State University. His research focuses on materials science, nanoscale particles, magnetic properties of nanoscale iron particles, adsorption properties of nanoscale metal oxide properties, and organometallic chemistry. He is the editor of the first edition of *Nanoscale Materials in Chemistry*, also published by Wiley.

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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)

For additional product details, please visit https://www.wiley.com/en-us