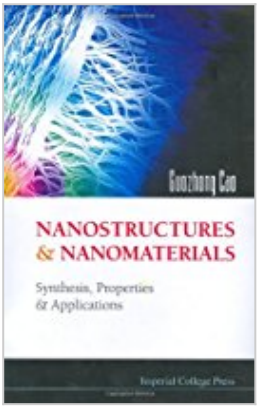

Nanostructures & Nanomaterials: Synthesis, Properties & Applications

By Guozhong Cao

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This important book focuses on the synthesis and fabrication of nanostructures and nanomaterials, but also includes properties and applications of nanostructures and nanomaterials, particularly inorganic nanomaterials. It provides balanced and comprehensive coverage of the fundamentals and processing techniques with regard to synthesis, characterization, properties, and applications of nanostructures and nanomaterials. Both chemical processing and lithographic techniques are presented in a systematic and coherent manner for the synthesis and fabrication of 0-D, 1-D, and 2-D nanostructures, as well as special nanomaterials such as carbon nanotubes and ordered mesoporous oxides. The book will serve as a general introduction to nanomaterials and nanotechnology for teaching and self-study purposes.

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Editorial Review

Review
"This book can be recommended to both students and researchers. It gives the basic information on fabrication and properties of nanostructures in a coherent way ... The relatively large number of figures makes the understanding of the subject easier. The reader has to appreciate also extended list of references for each chapter ..."

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From the Inside Flap
This is the 2nd edition of the original "Nanostructures and Nanomaterials" written by Guozhong Cao and published by Imperial College Press in 2004.

This important book focuses not only on the synthesis and fabrication of nanostructures and nanomaterials, but also includes properties and applications of nanostructures and nanomaterials, particularly inorganic nanomaterials. It provides balanced and comprehensive coverage of the fundamentals and processing techniques with regard to synthesis, characterization, properties, and applications of nanostructures and nanomaterials. Both chemical processing and lithographic techniques are presented in a systematic and coherent manner for the synthesis and fabrication of 0-D, 1-D, and 2-D nanostructures, as well as special nanomaterials such as carbon nanotubes and ordered mesoporous oxides. The book will serve as a general introduction to nanomaterials and nanotechnology for teaching and self-study purposes.

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Dr. Ying Wang is an Assistant Professor of Mechanical Engineering at Louisiana State University since Fall 2008. She has worked extensively on novel nanomaterials synthesis for solar cells and lithium-ion batteries. Her recent awards include the Nanotechnology Graduate Research Award from the University of Washington Initiative Fund (UIF, 2005), a Graduate Fellowship from the PNNL-UW Joint Institute for Nanoscience (JIN, 2005), and a Ford Motor Company Fellowship (2004). She has published 20 journal papers, 8 conference proceedings, 5 book chapters, and has given over 20 invited seminars worldwide. Her paper on "Developments of Nanostructured Cathode Materials for High-Performance Lithium-Ion Batteries" is the Top 5 most downloaded paper in Advanced Materials in 2008 and is selected in the Special Issue "the Best of Advanced Materials" in 2009. Her paper on "Nanostructures and Enhanced Intercalation Properties of Vanadium Oxides" is the Top 5 most accessed paper in Chemistry of Materials in 2006. Dr Wang teaches the materials science classes (ME 3701: Materials Science Laboratory; ME 2733: Materials of Engineering).

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