



# Bimetallic Nanostructures: Shape-Controlled Synthesis for Catalysis, Plasmonics, and Sensing Applications

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## DESCRIPTION

**Systematically summarizes the current status and recent advances in bimetallic structures, their shape-controlled synthesis, properties, and applications**

Intensive researches are currently being carried out on bimetallic nanostructures, focusing on a number of fundamental, physical, and chemical questions regarding their synthesis and properties. This book presents a systematic and comprehensive summary of the current status and recent advances in this field, supporting readers in the synthesis of model bimetallic nanoparticles, and the exploration and interpretation of their properties.

*Bimetallic Nanostructures: Shape-Controlled Synthesis for Catalysis, Plasmonics and Sensing Applications* is divided into three parts. Part 1 introduces basic chemical and physical knowledge of bimetallic structures, including fundamentals, computational models, and in situ characterization techniques. Part 2 summarizes recent developments in synthetic methods, characterization, and properties of bimetallic structures from the perspective of morphology effect, including zero-dimensional nanomaterials, one-dimensional nanomaterials, and two-dimensional nanomaterials. Part 3 discusses applications in electrocatalysis, heterogeneous catalysis, plasmonics and sensing.

- Comprehensive reference for an important multidisciplinary research field
- Thoroughly summarizes the present state and latest developments in bimetallic structures

- Helps researchers find optimal synthetic methods and explore new phenomena in surface science and synthetic chemistry of bimetallic nanostructures

*Bimetallic Nanostructures: Shape-Controlled Synthesis for Catalysis, Plasmonics and Sensing Applications* is an excellent source or reference for researchers and advanced students. Academic researchers in nanoscience, nanocatalysis, and surface plasmonics, and those working in industry in areas involving nanotechnology, catalysis and optoelectronics, will find this book of interest.

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## ABOUT THE AUTHOR

**Ya-Wen Zhang, PhD**, is Professor and principle investigator at the College of Chemistry and Molecular Engineering, Peking University. His research interests are focused on the rational design, controllable synthesis, ordered assembly, catalytic properties and structure#function relationships of rare earth and noble metal nanostructures. He has published more than 100 papers in peer-reviewed journals and won the National Science Fund for Distinguished Young Scholars in 2010.

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