Hybrid Catalysis

Guest Editor:

Prof. Dr. Kang Hyun Park
Department of Chemistry, Pusan National University, Busan 46241, Republic of Korea
chemistry@pusan.ac.kr

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Message from the Guest Editor

Hybrid catalysis is offer cost effective and is highly competitive catalysis. Among the various hybrid catalyst materials, metal NPs, in particular, are gaining increasing attention. Integrating multiple functionalities into a single nanoparticle (NP) is an important strategy to design hybrid materials for advanced applications.

Recently, there has been a growing interest in the synthesis of heterodimeric metal–metal oxide NPs comprising nonprecious metal oxides owing to their unique magnetic, optical, and catalytic properties. The material properties of these NPs change at the heterojunction between a metal and metal oxide, resulting in surface reconstruction around the junction and electron transfer across the interface. Therefore, it is crucial to understand the interfacial interactions at the nanoscale level for designing advanced composite nanomaterials. The fabrication of hierarchical micro-/nanoarchitectures with controlled morphology, orientation and dimensionality, is a significant challenge for nanoscience.

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