catalysts

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Synthesis and In-Depth Characterization of Supported and Highly Dispersed Catalysts

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Message from the Guest Editors

Catalysts, especially metallic catalysts, constitute one of the most important components in the conversion of chemical raw materials and play a dominant role in industrial applications for the production of highly valuable chemicals. The development of new materials holds the key to fundamental advancements in catalysis, both of which are vital in order to meet the challenge of environmental and energy crises. The dispersion of metal is an important issue in the design of heterogeneous catalysts. Highly dispersed catalysts can realize the full exposure and maximum utilization of active sites. To obtain highly dispersed catalysts, many strategies have been developed, such as the modification of supports, the grafting of organic molecules on metal surfaces, the partial coverage of active metal surfaces by metal oxides, the confinement of active metal nanoparticles in the micro- or mesopores of supports, the formation of bimetallic alloys or intermetallics or core–shell structures, and the construction of single-atom catalysts.