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Synthesis and Applications of Nano-Catalytic Materials

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Message from the Guest Editors

Dear Colleagues,

Nanoscale materials have a nanometer size range (1–1000 nm), and have widespread applications in catalysis. Nanostructured metallic materials (supported or unsupported) exhibit different catalytic activities or selectivities in heterogeneous reactions, because of the variations of nanocrystal size and shape, which result in the changes of exposed metallic atoms and surface structures. Nanoscale metallic oxides can catalyze acidic/basic reactions, oxidation, dehydrogenation, and photocatalytic reactions (used for pollutant abatements or hydrogen generation from water) with an enhanced performance, because of the increasing surface area/volume ratio with the decreasing particle size. The aim of this Special Issue is to cover the recent advances in the preparation, characterization. and applications of nanoscale materials as catalysts, supports, photocatalysts, and electrocatalysts. Full papers, short communications, reviews, or mini-reviews in these areas are all welcome.