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Nanoparticles in the Catalysis

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Message from the Guest Editors

The present Special Issue aims to combine a group of articles devoted to one of the most important areas in the field of catalysis, namely, catalysis by nanoparticles. Nanoparticles are the most common form of modern catalytic materials. Nanoparticles of very different chemical compositions and shapes (grains, rods, wires), supported by various carriers or unsupported, find their applications in organic synthesis, the photodegradation and chemical degradation of pollutants, the capture of carbon dioxide emissions, in the electrodes of fuel cells, and in other electrochemical power sources. The Special Issue will especially target synthetic catalysts, i.e., catalysts which are devised for the synthesis of organic compounds. Some specific reactions where nanoparticle catalysts are used include epoxidation, selective oxidation, selective reduction, hydrogenation, oxygen reduction, alcohol oxidation, and coupling reactions. Particular attention will be paid to the development of new, promising ways to synthesize active, stable, and selective nanocomposite catalysts. Articles devoted to applications of nanoparticle catalysts in various fields are welcome.