

Topical Collection

Nanotechnology in Catalysis

Message from the Collection Editor

Dear Colleagues, The evolution of catalysis is associated to the development of nanoscience and nanotechnology, which has the potential to design, synthesize and control the catalysts at nanometer and sub-nanometer length scale. The enormous efficiency of these nanocatalysts has to do with (a) the increasing surface-to-volume ratio with decreasing particle size, as well as (b) with quantum confinement effects, which can influence the chemical features of sufficiently small particles. Other atomic characteristics such as the chemical composition will be also critical to achieve a benefit at the level of catalytic activity and selectivity. This collection will collect fundamental research in heterogeneous catalysis. In particular, design, preparation and characterization of nanocatalysts (nanoparticles and nanoclusters) for clean energy research (ranging from hydrogen and liquid fuel production from fossil and renewable resources to clean combustion technologies), nanocatalysis for environmental chemistry and nanocatalysis for clean processes (i.e., fine chemistry and large-scale industrial applications).

Collection Editor

Dr. Maria J. Sabater

Instituto de Tecnología Química, Universitat Politècnica de València,
Consejo Superior de Investigaciones Científicas, Av. Los Naranjos s/n,
E-46022 Valencia, Spain



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Catalysts
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
catalysts@mdpi.com

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Prof. Dr. Keith Hohn
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