Special Issue

New Frontiers in Metal Nanoparticles for Heterogeneous Catalysis

Message from the Guest Editor

Metal nanoparticles have attracted great interest in the field of hetereogeneous catalysis due to their size and shape-dependent chemical and physical properties that strongly influence their catalytic activity. The main challenges in the field of nano-catalysis are the control of their synthesis, comprehensive knowledge of active sites enabling a rational design of efficient catalysts, and their characterization under reaction conditions. Despite the tremendous progress in the field, several tasks concerning the dynamic behaviour of metal nanoparticles under reaction conditions, the in situ formation of active sites, and their link with its chemical reactivity remain unresolved, limiting our capability to achieve the rational design of efficient catalysts. Therefore, new strategies aimed at the identification of active sites, reaction mechanisms, and the controlled synthesis of disruptive novel catalysts are strongly required... For further reading, please follow the link to the Special Issue website at: https://www.mdpi.com/si/32612

Guest Editor

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Deadline for manuscript submissions

closed (30 November 2021)

Nanomaterials

an Open Access Journal by MDPI

Impact Factor 4.3
CiteScore 9.2
Indexed in PubMed

mdpi.com/si/32612

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Nanoscience and nanotechnology are exciting fields of research and development, with wide applications to electronic, optical, and magnetic devices, biology, medicine, energy, and defense. At the heart of these fields are the synthesis, characterization, modeling, and applications of new materials with lower nanometer-scale dimensions, which we call “nanomaterials”. These materials can exhibit unusual mesoscopic properties and include nanoparticles, coatings and thin films, metal–organic frameworks, membranes, nano-alloys, quantum dots, self-assemblies, 2D materials such as graphene, and nanotubes. Our journal, *Nanomaterials*, has the goal of publishing the highest quality papers on all aspects of nanomaterial science to an interdisciplinary scientific audience. All of our articles are published with rigorous refereeing and open access.

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