

Special Issue

New Insights into Nanoparticles in Sustainable Catalysis

Message from the Guest Editors

Research on catalysis, namely on the fundamental properties of heterogeneous catalysts as well as on the nature of catalytically active sites, have remained largely understudied. Nanostructured materials play an important role in today's chemical processes, acting as catalysts in heterogeneous, photo, thermal, and electrocatalytic processes for the production of cost-effective feedstock chemicals, smart/sensing surfaces or fuel cells, just to mention a few. New insights are necessary to understand the rate-determining processes and steps of many heterogeneous reactions and identify important structure-activity/selectivity synergies, enabling a knowledge-driven improvement of catalysts. Furthermore, the traditional need for efficient and selective catalytic reactions that also strives for waste reduction, atomic efficiency, high reaction rates, and catalyst recovery are topics that still need more input. This Special Issue aims to highlight key examples of advanced designed nanomaterials with applications in catalytic and sustainable processes.

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As the premier open access journal dedicated to molecular chemistry, now in its 29th year of publication, the papers published in *Molecules* span from classical synthetic methodology to natural product isolation and characterization, as well as physicochemical studies and the applications of these molecules as pharmaceuticals, catalysts, and novel materials. Pushing the boundaries of the discipline, we invite papers on all major fields of molecular chemistry and multidisciplinary topics bridging chemistry with biology, physics, and materials science, as well as timely reviews and topical issues on cutting-edge fields in all of these areas.

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