Special Issue

Heterogeneous Catalysis for CO_2 and C_2H_6 Conversion

Message from the Guest Editor

This Special Issue focuses on recent advancements in heterogeneous catalysis, emphasizing the design and application of single-atom catalysts (SACs) and nano-catalysts for sustainable chemical transformations. A key theme is their role in CO2 conversion, where these catalysts drive the reduction of CO2 into value-added fuels (e.g., methane, methanol) or platform chemicals, addressing global carbon neutrality challenges. Equally critical is their application in C2H6 conversion, enabling efficient C2H6 dehydrogenation to ethylene or oxidative coupling to higher hydrocarbons, which are crucial for industrial petrochemical processes. This Issue highlights mechanistic insights, innovative synthesis strategies, and in situ/operando characterization techniques that bridge atomic-scale catalyst design with macroscopic performance. this collection aims to accelerate the development of next-generation catalysts for a sustainable future. Researchers are invited to submit original articles, reviews, and perspectives that explore these transformative topics in catalysis science.

Guest Editor

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Message from the Editor-in-Chief

As the premier open access journal dedicated to experimental organic chemistry, and now in its 25th 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 multidisciplinary topics bridging biochemistry, biophysics and materials science, as well as timely reviews and topical issues on cutting edge fields in all these areas.

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