Special Issue

Emerging Catalytic Technologies for Clean Chemical Synthesis and Efficient Biomass Conversion and Upgrading

Message from the Guest Editors

To address the issues associated with climate change, raw materials, energy resources, and environmental pollution, transitioning from the utilization of fossil carbon resources to a renewable and decarbonized energy system is a potential route. The selective catalytic conversion of lignocellulose (a class of inedible and abundant renewable carbon feedstocks) and bio-derived compounds into value-added fuels and chemicals serves as a promising carbon-neutral strategy to drive this transition. However, the efficient fractionation of biomass and selective conversion of bio-derived platform chemicals essentially depend upon catalytic technologies, including catalyst development, catalytic systems, and reaction processes. Therefore, catalysts based on, for example, zeolites, carbon materials, metal oxides, metal organic frameworks (MOFs), pincer complexes, Lewis acidic cations, metallic nanoparticles, and single-atom sites have attracted great attention.

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