Special Issue

Catalytic Transformation of Biomass: From Waste to Fuels, Chemicals and High-Value Products

Message from the Guest Editors

The rising global demand for energy and chemicals, along with limited fossil resources and environmental concerns, highlights the need for sustainable alternatives. Lignocellulosic biomass, an abundant renewable carbon source, offers a promising route to replace fossil fuels in producing fuels, chemicals, and high-value materials. This Special Issue, *"Catalytic Transformation of Biomass: From Waste to Fuels, Chemicals and High-Value Products"*, focuses on advances in catalytic technologies for biomass utilization. Contributions demonstrating the role of catalysis—from conventional heterogeneous solid catalysts to emerging single-atom, magnetic, and (photo)electrocatalytic systems—are welcome. We also encourage studies on converting complex biomass into platform molecules and end-products, along with innovations in catalyst design, process integration, and system optimization. Research addressing efficiency, sustainability, and resource management is particularly encouraged. This Special Issue aims to highlight research advancing sustainable and economically viable catalytic pathways, supporting the transition to a circular bioeconomy.

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