

Special Issue

Advances in the Catalytic Conversion of Renewable Materials and Biomass to Sustainable Products and Energy

Message from the Guest Editors

The growing demand for sustainable energy and materials has driven research in the catalytic conversion of biomass and renewable feedstocks into sustainable products and energy. This Special Issue focuses on innovative catalytic strategies, including heterogeneous, homogeneous, and biocatalytic processes, as well as hybrid systems, for transforming lignocellulosic biomass, agricultural residues, and other renewable resources into fuels, chemicals, and functional materials. Contributions highlighting catalyst design, reaction mechanisms, process intensification, energy efficiency, and green chemistry approaches are particularly welcome. Studies addressing techno-economic analysis, life-cycle assessment, and scale-up challenges are also encouraged. This Special Issue provides a platform for researchers and practitioners to share recent advances and emerging trends, ultimately promoting the development of sustainable catalytic technologies that support a circular bioeconomy and the production of environmentally friendly energy and high-value products.

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Deadline for manuscript submissions

30 June 2026



Catalysts

an Open Access Journal
by MDPI

Impact Factor 4.0
CiteScore 7.6



mdpi.com/si/254908

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