



Energy Conversion and Efficient Utilization of Woody Biomass

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Message from the Guest Editors

Dear Colleagues,

The utilization of woody biomass for energy conversion involves employing advanced technologies to extract energy efficiently from organic materials such as forestry residues and agricultural waste. This process, driven by the need for sustainable energy sources, includes various thermochemical and biochemical pathways. Novel thermochemical and biochemical conversion processes to enhance the efficiency and versatility of woody biomass utilization are needed. The concept of integrated biorefineries is gaining traction. These biorefineries aim to valorize multiple biomass feedstocks and produce a spectrum of bio-based products. They optimize resource utilization by integrating various conversion pathways and diversifying product portfolios, thereby enhancing economic viability and sustainability. Beyond energy conversion, the efficient utilization of woody biomass extends to diverse applications such as sustainable materials, biochemicals, and soil amendments. This involves valorizing forestry residues and agricultural by-products for the production of bioplastics, biochar, and bio-based chemicals, contributing to circular economy initiatives.





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