

Special Issue

Biomass Pyrolysis Characterization and Energy Utilization

Message from the Guest Editors

Biomass pyrolysis is a rapidly advancing field attracting growing attention from both academia and industry because this thermal process converts organic residues into valuable chemicals and fuels. This highlights the potential of biomass as an abundant and renewable source of carbon and hydrogen; it is estimated to provide up to 147 exajoules by 2030, which is equivalent to approximately 36% of current global energy consumption. This Special Issue aims to consolidate recent breakthroughs in biomass pyrolysis and energy utilization, advancing the current state-of-the-art by compiling pioneering theoretical insights and engineering applications. We warmly invite original research articles and reviews that explore advances across a wide range of disciplines, including but not limited to the following topics:

- Quantum and molecular mechanics approaches.
- Thermogravimetric analysis and pyrolysis kinetics.
- Mass spectrometry and product characterization.
- Machine learning frameworks for reaction prediction and modeling.

Guest Editors

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