Special Issue

Advanced Technologies in Biomass Pyrolysis and Gasification into Bioenergy

Message from the Guest Editors

This Special Issue on "Advanced Technologies in Biomass Pyrolysis and Gasification into Bioenergy" explores innovative approaches to converting biomass into energy and valuable bio-based products. Biomass pyrolysis and gasification are pivotal processes that decompose organic materials into bio-oil, syngas, and biochar under controlled thermal conditions, while the combustion process is characterized by the production of heat. The issue also emphasizes the integration of Life Cycle Assessment (LCA) methods to quantify the environmental impacts of these technologies, providing a comprehensive understanding of their sustainability and carbon footprint. Topics covered include advancements in reactor design, catalytic enhancements, and the optimization of fluidized bed systems for superior energy output and reduced environmental impact. Additionally, the integration of artificial intelligence (AI) and machine learning (ML) tools in process monitoring and control, as well as the development of hybrid processes combining pyrolysis, gasification, combustion, and other biochemical methods, are explored.

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Energies is an international, open access journal in energy engineering and research. The journal publishes original papers, review articles, technical notes, and letters. Authors are encouraged to submit manuscripts which bridge the gaps between research, development and implementation. The journal provides a forum for information on research, innovation, and demonstration in the areas of energy conversion and conservation, the optimal use of energy resources, optimization of energy processes, mitigation of environmental pollutants, and sustainable energy systems.

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