

Special Issue

Recent Research on Biomass and Waste Pyrolysis for Sustainable Fuel Production

Message from the Guest Editors

The global transition toward sustainable energy solutions has intensified the need for alternative fuel sources derived from renewable and waste materials. Pyrolysis, a thermochemical conversion process, offers a promising pathway to transform biomass and various waste streams into valuable fuels, chemicals, and carbon materials. This Special Issue aims to compile cutting-edge studies that advance the understanding, optimization, and application of pyrolysis technologies for sustainable energy generation. Topics of interest include, but are not limited to, the following:

- Feedstock development: Novel biomass sources, waste-derived feedstocks, and their pretreatment methods.
- Process optimization: Advances in slow, fast, and catalytic pyrolysis for enhanced bio-oil, syngas, or biochar yields.
- Catalysis and upgrading: Catalytic pyrolysis and downstream refining techniques to improve fuel quality.
- Environmental and economic assessments: Life cycle analysis (LCA), techno-economic feasibility, and carbon footprint reduction.
- Emerging applications: Integration of pyrolysis products (e.g., bio-oil, biochar) in energy systems, carbon sequestration, or circular economy frameworks.

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About the Journal

Message from the Editor-in-Chief

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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