



## Pyrolysis Applications in Plastic Waste and Biomass Valorization

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### Message from the Guest Editor

Plastic materials have been crucial to the development of science, technology, and almost all aspects of modern progress since the mid-twentieth century. However, the increasingly unsustainable culture of plastic consumption and the accumulation of plastics in landfills, oceans, and broader ecosystems have also caused negative and potentially irreversible environmental impacts. In recent decades, scientists and engineers have spent significant time and resources searching for more effective plastic waste management techniques based on thermochemical routes such as pyrolysis. On the other hand, biomass is a renewable source and potentially sustainable fossil fuel replacement due to its availability, lower processing cost, high conversion, and lower life cycle carbon emissions. Pyrolysis can also be used to convert biomass into high-quality liquid fuels and chemicals. Pyrolysis can be improved by the use of catalysts, which can reduce the temperature and reaction time and allow the production of chemicals with a higher added value.





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