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Recent Developments in Thermal and Catalytic Recycling of Plastic Waste

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Message from the Guest Editors

Contemporary methods of thermo-chemical recycling plastic waste, such as pyrolysis, lead to the production of a series of secondary valuable products. The use of suitable catalysts is necessary for the synthesis of targeted products, such as hydrocarbons in common liquid fuels, or specific phenols. Furthermore, it is helpful to have a clear picture of the products obtained after the pyrolysis of real plastic waste, rather than model polymers/blends, since the existence of several additives in small quantities often leads to the formation of potentially harmful compounds.

Is a pre-treatment step for plastic waste necessary before thermo-chemical recycling? Do contaminants affect the quality of the final product, i.e., pyrolytic oil? If so, to what extent, and what are the possibilities of its further usage? What are the possibilities of mixing pyrolytic oil and commercial transport fuels? These are just some of the issues that are of particular interest in the further commercialization of plastic waste pyrolysis technologies.

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