Special Issue

Sustainable Environmental Management of Waste Plastic: Purification, Multi-Path Utilization, Contaminant Control, and Governance Policy

Message from the Guest Editors

The global accumulation of plastic waste has reached critical levels, and conventional waste management systems struggle to address the complexities of mixed plastic streams and the environmental persistence of microplastics. Emerging challenges include the adsorption of toxic pollutants on aged plastic surfaces, the release of hazardous byproducts during thermal recycling, and the lack of sector-specific regulations to drive circular economy transitions. While advancements in material recovery technologies show promise, significant gaps remain in scaling up purification processes, ensuring economic viability for diverse utilization pathways, and aligning policy frameworks with technological innovation.

This Special Issue seeks to bridge these gaps by fostering interdisciplinary dialog among researchers. We invite contributions that address the full lifecycle management of plastic waste, from advanced sorting systems to cross-sector valorization strategies, while integrating pollution mitigation and governance mechanisms. Particular emphasis will be placed on systemic approaches that harmonize technical feasibility, environmental sustainability, and regulatory enforceability.

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I encourage you to contribute a research or comprehensive review article for consideration for publication in *Sustainability*, an international Open Access journal which provides an advanced forum for research findings in areas related to sustainability and sustainable development. *Sustainability* publishes original research articles, review articles and communications. I am confident you will find the journal contributes to enhancing understanding of sustainability and fostering initiatives and applications of sustainability-based measures and activities.

Editor-in-Chief

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