Special Issue

Sustainable Energetic Valorization of Waste and Transformation of Biomass for Improved Energy Efficiency

Message from the Guest Editors

The conversion of waste into energy serves not only as a means to address environmental challenges but also as a pivotal step in a successful energy transition and, through technological innovation, policy support, and optimised business models, energy efficiency can be significantly enhanced, propelling society towards the goals of zero waste and net-zero carbon emissions. Future efforts must prioritise balancing technical viability, environmental sustainability, and societal acceptance to establish a collaborative, sustainable energy ecosystem. Consequently, this Special Issue will focus on the following sustainable research areas and their associated developments:

- Waste-to-energy technologies, encompassing biomass conversion techniques (anaerobic digestion, thermochemical conversion, and biochemical conversion), thermochemical conversion (gasification and pyrolysis), and biochemical conversion (fermentation for ethanol production and biohydrogenation), along with related extension work.
- Energy efficiency enhancement strategies, including the exploration of circular economy models, cascading energy utilisation, carbon capture and storage, and associated extension work.

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Deadline for manuscript submissions

30 September 2026

Sustainability

an Open Access Journal by MDPI

Impact Factor 3.3
CiteScore 7.7

mdpi.com/si/254227

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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. The journal publishes original research articles, reviews, conference proceedings (peer reviewed full 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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