

Special Issue on  
**Transforming Local Waste into Sustainability: A Circular Economy Revolution**

# CALL FOR PAPERS

This current era is marked by burgeoning environmental concerns and a growing emphasis on sustainable practices. Research across many different fields of engineering has contributed to the evolving discourse on sustainability, resource efficiency, and circular economies, in particular work on resource recovery, waste-to-energy technologies, sustainable construction materials, and bio-based products. Cutting-edge research is advancing how the utilization of organic waste materials can be reimagined and repurposed for economic, environmental, and societal benefits.

In the field of waste utilization, researchers face several significant challenges that must be addressed to unlock the full potential of organic waste materials in sustainable applications. First and foremost is the need for comprehensive and standardized assessment methods for different types of organic waste materials to ensure consistent data collection and analysis. In addition, there is an urgent need for further research into the scalability and economic viability of waste-to-energy technologies and sustainable material production processes, as these are critical components of circular economy strategies. Innovative solutions such as anaerobic digestion, pyrolysis, and novel biodegradable materials have great potential as solutions to these challenges. Interdisciplinary collaboration between industry, academia, and policymakers is essential to create a conducive environment for the adoption of sustainable practices. Exploring the social and cultural aspects of waste management and resource utilization can help bridge the gap between research and real-world implementation, improving acceptance and participation in sustainable initiatives, and promoting the effective utilization of locally available organic waste materials for a more sustainable future.

The aim of this Special Issue is to comprehensively explore innovative approaches and practical solutions in the utilization of organic waste materials for sustainable development. We welcome both original research and review articles, as well as conceptual and interdisciplinary investigations. Of particular interest are submissions on novel waste-to-energy technologies, such as pyrolysis and anaerobic digestion, sustainable construction materials, including the bio-based creation, properties, and environmental impact of materials utilizing organic waste, and circular economy strategies, such as closed-loop systems or innovative supply chain models. We also welcome research into sustainable waste utilization that aligns with the Sustainable Development Goals (SDGs), in particular those relating to responsible consumption and production, climate action, and sustainable communities.

Potential topics include but are not limited to the following:

- ▶ Innovations in anaerobic digestion technology for the efficient conversion of organic waste to biogas and valuable byproducts
- ▶ Circular economy models that integrate organic waste materials into sustainable supply chains to minimize waste generation
- ▶ Development and performance of sustainable construction materials with organic waste components
- ▶ Life cycle assessment (LCA) of organic waste utilization
- ▶ Development of bio-based products from organic waste
- ▶ Community-based organic waste management initiatives
- ▶ The role of policy and regulatory frameworks in the adoption of organic waste utilization technologies and circular economy practices
- ▶ Waste-to-energy systems for remote areas
- ▶ Human behavior and waste separation
- ▶ Circular agriculture practices, including the integration of organic waste materials into farming processes
- ▶ Development and application of sustainable packaging materials derived from organic waste
- ▶ Economic viability of organic waste projects

Authors can submit their manuscripts through the Manuscript Tracking System at <https://review.wiley.com/submit?specialIssue=950549>.

Papers are published upon acceptance, regardless of the Special Issue publication date.

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