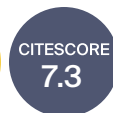




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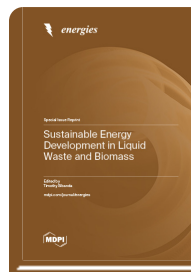
## **Sustainable Energy Development in Liquid Waste and Biomass**

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Timothy Sibanda

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The Special Issue, entitled “Sustainable Energy Development in Liquid Waste and Biomass”, presents a cutting-edge exploration of the transformative potential of organic waste streams and biomass in addressing global energy and environmental challenges. Bridging microbiology, environmental engineering, and renewable energy science, this Special Issue reprint examines how liquid waste and lignocellulosic or biomass can be converted into clean, sustainable energy. Rooted in circular economy principles and environmental stewardship, it explores both the scientific foundations and technological innovations of waste-to-energy strategies. Core themes include anaerobic digestion, thermochemical conversion, bioenergy systems, and the use of advanced biocatalysts for improved energy yields. Emphasis is placed on emissions control and byproduct valorisation, promoting a holistic sustainability model. Authored by leading experts, each chapter guides readers from theory to application, supported by real-world case studies. The Special Issue reprint also critically reviews policy frameworks, economic drivers, and life cycle impacts, offering insights into aligning innovation with environmental governance. Designed for researchers, graduate students, practitioners, and policymakers in this field, this volume serves as both a foundational reference and a forward-looking guide. As the world confronts climate change, energy insecurity, and resource depletion, this work stands as a timely and authoritative contribution to the pursuit of resilient and inclusive energy systems.



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