Biodegradable Waste Management in the Circular Economy: Challenges and Opportunities
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DESCRIPTION

Biodegradable Waste Management in the Circular Economy

Presents the major developments in new technologies and strategies for more effective recovery of matter, resources, and energy from biodegradable waste

The volume of biodegradable waste produced worldwide is progressively increasing—a trend that is predicted to continue well into the foreseeable future. Developing sustainable, cost-effective, and eco-friendly approaches for processing food waste, agricultural and organic industrial waste, cardboard, biodegradable plastics, sewage sludge, and other types of biodegradable waste is one of the most significant challenges of the coming decades.

Biodegradable Waste Management in the Circular Economy provides a detailed overview of the latest advances in the management of biomass for economic development. Featuring contributions from an interdisciplinary team of experts, this comprehensive resource addresses various technologies and strategies for recycling organic matter and many other renewable compounds. In-depth chapters describe the concept of circular economy, identify new sources of biodegradable waste, explore technologies for the production of biodegradable waste end-products, discuss the positive and negative effects of end-products on soil and the environment, and more. Throughout the text, the authors explore systematic approaches for secure biodegradable management in various countries and regions around the world.

• Explores the social, governance, and economic aspects of “waste as a resource”
• Addresses metal recovery, biofuel and fertilizer production, and biosorbents and biochar derived from biomass waste

• Discusses nutrient recovery and energy and bio-methane production from biodegradable waste

• Covers use cases, collection systems, and regulation of agricultural, industrial, and municipal biodegradable waste streams

• Presents various technologies for the production of biodegradable waste end-products, including biorefineries, anaerobic digestion, and hybrid methods

Reflecting the latest trends in the rapidly changing field, Biodegradable Waste Management in the Circular Economy is essential reading for researchers, engineers, scientists, and consultants working in waste engineering and management, resource recovery, renewable resources, environmental science, agricultural and environmental engineering, soil science, and bioenergy.

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**ABOUT THE AUTHOR**

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Prof. Ma³gorzata Kacprzak is the head of Division of Land Protection at the Institute of Environmental Engineering, Czestochowa University of Technology, Poland. Her main scientific interests are in soil mycology, biological quality of degraded soils, soil remediation, sewage sludge management, biowaste in the circular economy, and process intensification using new molecular methods for detection of pathogens in wastewater, sewage sludge and soils.

She has participated in and coordinated several large international projects including BIOTENMARE “Innovation in recycling technologies of sewage sludge and other biowaste, energy and matter recovery (2013-2016)” within Polish-Norwegian Research Programme. She is currently coordinating the project “Environmental safety of bio-waste in the circular economy (2018-2020)” within Programme International Academic Partnerships (Operator Polish National Agency for Academic Exchange).

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