Special Issue

Anaerobic Digestion Process in Wastewater Treatment

Message from the Guest Editor

Anaerobic digestion (AD) has emerged as a cornerstone technology for sustainable wastewater treatment, transforming organic waste into renewable energy (e.g., biogas) and valuable byproducts (e.g., volatile fatty acids, biofertilizers) while also reducing greenhouse gas emissions. Despite its potential, challenges such as process instability, low methane yields, and sensitivity to toxic compounds persist, necessitating innovative solutions to optimize efficiency and scalability. This Special Issue invites cutting-edge research and reviews that address these challenges, focusing on mechanistic insights, technological advancements, and integrated systems to enhance the role of AD in achieving progress toward a circular economy.

This Special Issue aims to connect fundamental research and practical implementation by exploring novel strategies to improve AD performance, including microbial engineering, process optimization, and hybrid systems.

Topics of Interest:

(1) AD Process Optimization;
(2) Microbial Ecology and Metabolic Pathways;
(3) Integration with Advanced Technologies;
(4) Resource Recovery and Circular Economy;
(5) Case Studies and Scalability.

Guest Editor

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Message from the Editor-in-Chief

In the context of global changes, the sustainable management of water cycles, going from global and regional water cycles to urban, industrial and agricultural water cycles, plays a very important role on the water resources and on their relationships with food, energy, biodiversity, ecosystem functioning and human health. *Water* invites authors to provide innovative original full articles, critical reviews and timely short communications and to propose special issues devoted to new technological and scientific domains and to interdisciplinary approaches of the water cycles. We ensure a critical review process and a quick turnaround between submission and final decision.

Editor-in-Chief

Dr. Jean-Luc PROBST
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