Special Issue

Biodegradation Strategies for Sustainable Removal of Persistent Pollutants and Xenobiotics in Wastewater Treatment

Message from the Guest Editor

This Special Issue is dedicated to exploring and advancing innovative approaches for effectively removing xenobiotics from wastewater, emphasizing sustainable, efficient, and environmentally friendly solutions. A central theme is the ap-plication of biodegradation and biotransformation processes to break down these recalcitrant compounds. It also examines mi-crobial degradation pathways, optimal treatment conditions, and biochemical mechanisms that govern xenobiotic transformation, offering a comprehensive understanding of pollutant removal dynamics. The contributions aim to pro-vide insights into integrating these biological processes within existing and novel treatment frameworks.

This Special Issue seeks to advance the scientific understanding and practical implementation of wastewater treatment strategies by uniting research on bioremediation, enzyme technologies, biofilm science, and bioreactor innovations. It addresses critical challenges in the field by showcasing biotechnological advancements that enhance treatment efficacy, mitigate environmental risks, and ensure safe water production for ecological reintegration and reuse.

Guest Editor

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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

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