Special Issue

Novel Biological Processes for Wastewater Treatment Applications

Message from the Guest Editors

Advances in microbial ecology, biotechnology, multi-omics, metabolic engineering, nanobiotechnology, and process intensification now enable novel biological processes with greater stability, resilience, and pollutant-removal efficiency. This Special Issue aims to highlight cutting-edge research and reviews on emerging biological processes for treating domestic, industrial, agricultural, and municipal wastewater. Topics of Interest

- Novel microbial processes (microalgae–bacteria consortia, aerobic granular sludge, extremophilic processes);
- Engineered microbial communities and targeted biodegradation;
- Anaerobic membrane bioreactors and high-rate anaerobic systems;
- Bioelectrochemical systems for treatment and energy recovery;
- Metabolic engineering, CRISPR tools, and omics-driven insights;
- Enzyme engineering and advanced biocatalysts;
- Resource recovery: nutrients, bioenergy, bioplastics (PHA), and biochar;
- Nature-based systems (constructed wetlands, algal ponds, hybrid reactors);
- Nanotechnology-enabled biological processes;
- Biodegradation of pharmaceuticals, PPCPs, microplastics, and xenobiotics;
- Bioprecipitation, biosorption, and bioleaching of heavy metals;

Guest Editors

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Deadline for manuscript submissions

30 August 2026

Applied Sciences

an Open Access Journal by MDPI

Impact Factor 2.9
CiteScore 6.1

mdpi.com/si/266580

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Message from the Editor-in-Chief

As the world of science becomes ever more specialized, researchers may lose themselves in the deep forest of the ever increasing number of subfields being created. This open access journal *Applied Sciences* has been started to link these subfields, so researchers can cut through the forest and see the surrounding, or quite distant fields and subfields to help develop his/her own research even further with the aid of this multi-dimensional network.

Editor-in-Chief

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