Topical Collection

Advanced Catalysts for Wastewater Remediation Technologies

Message from the Collection Editors

This Special Issue highlights breakthroughs in catalyst/photocatalyst design, mechanistic studies, and scalable applications across pollutant removal, electrochemical reduction, and hybrid processes. We welcome research on novel materials (e.g., transition metal-based frameworks), advanced characterization techniques, and techno-economic analyses to bridge laboratory innovation and industrial deployment. Contributions addressing membrane separation selectivity, capacitive deionization efficiency, or interdisciplinary approaches are particularly encouraged. By fostering dialogue among chemists, engineers, and environmental scientists, this issue aims to accelerate the development of sustainable, next-generation remediation technologies.

- heavy metal removal
- electrochemical removal
- adsorption
- capacitive deionization
- bioelectrochemical technology
- electrochemical reduction
- membrane separation
- photocatalysis

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