

Special Issue

Biochar-Enhanced Remediation of Heavy Metal-Induced Soil and Water Environmental Degradation: Microbial and Functional Material Perspectives

Message from the Guest Editors

Heavy metal pollution poses escalating threats to global ecosystems and human health. This Special Issue focuses on cutting-edge strategies to address the migration, transformation, and fate of heavy metals in complex environmental matrices, emphasizing innovation in remediation technologies.

We invite contributions that explore:

1. Carbon-based remediation materials (e.g., biochar, graphene oxide) engineered for enhanced heavy metal adsorption and stabilization.
2. Multi-media synergistic remediation integrating soil–water–air interfaces, such as phytoremediation combined with electrokinetics or microbial fuel cells.
3. Microplastic–heavy metal interactive contamination mechanisms, including aging microplastics as vectors for metal mobility and toxicity in aquatic–terrestrial systems.
4. Microinterface modulation technology using electrochemical/ultrasonic fields to control metal redox behavior and bioavailability at mineral–water interfaces to investigate synergistic toxicity and joint remediation approaches.
5. Advanced migration modeling via machine learning and isotopic tracing to predict metal transport in heterogeneous environments.

Guest Editors

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Deadline for manuscript submissions



Toxics

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About the Journal

Message from the Editor-in-Chief

Toxics (ISSN 2305-6304) is an international, peer-reviewed, open access journal which provides an advanced forum for studies related to all aspects of toxic chemicals and materials. We aim to publish high quality work that furthers our understanding of the exposure, effects, and risks of chemicals and materials in humans and the natural environment as well as approaches to assess and/or manage the toxicological and ecotoxicological risks of chemicals and materials. Please consider publishing in *Toxics* when preparing your next paper.

Editor-in-Chief

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