

## 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.

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### Guest Editors

Dr. Longfei Liu  
Prof. Dr. Shengsen Wang  
Dr. Wan Yang

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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.

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### Editor-in-Chief

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indexed within Scopus, SCIE (Web of Science), PubMed, PMC, Embase, CAPlus / SciFinder, AGRIS, and other databases.

#### Journal Rank:

JCR - Q1 (Toxicology) / CiteScore - Q1 (Chemical Health and Safety)

#### Rapid Publication:

manuscripts are peer-reviewed and a first decision is provided to authors approximately 17.8 days after submission; acceptance to publication is undertaken in 2.4 days (median values for papers published in this journal in the second half of 2025).