

Special Issue

Metal Mobilization and Immobilization as Remediation Approaches for Soil Restoration

Message from the Guest Editors

Soil contamination with heavy metal(loid)s (HMs) is a widespread problem. Worldwide, more than 10 million sites are considered to have polluted soil, of which above 50% are contaminated with heavy metals (e.g., Cd, Cr, Pb) and/or metalloids (e.g., As). Due to HMs' persistence, bioaccumulation, and toxicity, remediation actions in contaminated areas are still urgent. Two main remediation practices, i.e., immobilization and mobilization, have been adopted to reduce the hazardous effects of HMs and restore contaminated soil ecosystems. Immobilization with stabilization/solidification or assisted phytostabilization techniques decreases the mobility of HMs in soil and their bioavailability to plants, animals, and humans and reduces HM leaching into groundwater. Mobilization of HMs can include phytoextraction, electrokinetics, or soil washing/soil flushing technologies and results in permanent HM removal from soil. Immobilization processes are generally preferred for treating heavy metal contaminated soils. Although soil remediation with mobilization and immobilization of HMs has attracted intense interest in recent years, many areas still need to be developed.

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Addressing the environmental and public health challenges requires engagement and collaboration among clinicians and public health researchers. Scientific discoveries and advances in this research field play a critical role in providing a rational basis for informed decision-making toward control and prevention of human diseases, especially the illnesses that are induced from environmental exposure to health hazards.

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Editor-in-Chief

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