Special Issue

Removal of Heavy Metals From the Environment: Advances and Applications

Message from the Guest Editor

- The escalating global burden of a heavy-metal-contaminated environment, driven by industrialization, poses a critical threat to ecosystems and public health due to the toxic and carcinogenic nature of these pollutants. Among various methods, sorption has emerged as the most popular and highly promising physicochemical process for effective heavy metal removal, even at low concentrations. Recent advancements in this area are focused on developing high-performance nanosorbents (MOFs, graphene oxides, etc.) and cost-effective, waste-derived sorbents (modified clays, zeolites, geopolymers, bio(char), etc.). Beyond sorption, key emerging techniques include electrocoagulation (EC), which offers a greener alternative with less sludge, and bioremediation, utilizing living organisms for cost-effective detoxification.
- The hope is that this Special Issue will contribute to a better understanding of the sorption process, as well as the synthesis pathways of new sorbent materials, explore innovative heavy metal removal techniques, and publish studies on reaction kinetics, equilibrium, and data modelling, with a strong focus on practical application.

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I encourage you to contribute a research or comprehensive review article for consideration for publication in Sustainability, an international open access journal which provides an advanced forum for research findings in areas related to sustainability and sustainable development. The journal publishes original research articles, reviews, conference proceedings (peer reviewed full articles) and communications. I am confident you will find the journal contributes to enhancing understanding of sustainability and fostering initiatives and applications of sustainability-based measures and activities.

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