



## Sustainable Metal Waste Management: Biological Approaches

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### Message from the Guest Editors

Plants growing on metal containing waste dumps showed their excellence in tolerating multiple metals by accumulating them into different organs, which provides one of the best sustainable approaches for metal waste management. Moreover, microbes dwelling in synergy with plants play a vital role in enhanced metal accumulation, thus providing a better option for final metal recovery from wastes. Prior to that, a detailed knowledge of metal bioavailability and bioaccessibility, as well as its transfer from soil and translocation in different organs of plant, are essential in order to assess the actual danger/risk posed by these contaminants to the plants. The study of plant physiology and biochemistry of these plants could provide the toxic effect of these contaminants, adaptability and its suitability in metal waste management and recovery. Investigating these aspects requires the use of analytical techniques, which could enable one to solve the soil-metal-microbe high complexity with a spatial resolution, down to the micrometer- or even nanometer-scale.





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## Message from the Editorial Board

Metallic materials play a vital role in the economic life of modern societies; contributions are sought on fresh developments that enhance our understanding of the fundamental aspects related to the relationships between processing, properties and microstructure – disciplines in the metallurgical field ranging from processing, mechanical behavior, phase transitions and microstructural evolution, nanostructures, as well as unique metallic properties – inspire general and scholarly interest among the scientific community.

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