Special Issue

Unlocking Mineral Resource Potential: Biotechnological Approaches to Recover Critical Minerals from Waste

Message from the Guest Editors

According to the market research and consulting firm Credence Research (2023), biohydrometallurgical approaches generated a total revenue of USD 1.5 billion for mining companies in 2020, and this value is expected to reach a market valuation of USD 3.6 billion by 2027. Although often designed for primary ores, the use of microbial technologies for the recovery of metals is now attracting attention for the extraction and recovery of strategic and critical minerals from secondary resources, in support of the global energy transition and the steady decline in discoveries of new mineral deposits with economic ore grades. Submissions are invited for a Special Issue of Minerals, Unlocking Mineral Resource Potential: Biotechnological Approaches to Recover Critical Minerals from Waste, to highlight the great potential of microbial technologies to provide a cost-effective and sustainable approach for the selective extraction and recovery of critical minerals from resources such as mine tailings, metallurgical slag, e-waste, EV lithium-ion batteries and other unconventional resources.

Guest Editors

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Deadline for manuscript submissions

closed (24 January 2025)

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About the Journal

Message from the Editor-in-Chief

Minerals welcomes submissions that report basic and applied research in mineralogy. Research areas of traditional interest are mineral deposits, mining, mineral processing and environmental mineralogy. The journal footprint also includes novel uses of elemental and isotopic analyses of minerals for petrology, geochronology and thermochronology, thermobarometry, ore genesis and sedimentary provenance. Contributions are encouraged in emerging research areas such as applications of quantitative mineralogy to the oil and gas, manufacturing, forensic science, climate change, geohazard and health sectors.

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manuscripts are peer-reviewed and a first decision is provided to authors approximately 18.2 days after submission; acceptance to publication is undertaken in 2.6 days (median values for papers published in this journal in the first half of 2025).

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