



minerals



Special Issue Reprint

Novel and Emerging Strategies for Sustainable Mine Tailings and Acid Mine Drainage Management

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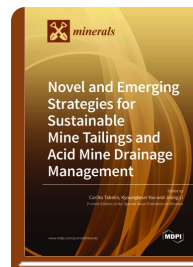
Carlito Tabelin

Kyoungkeun Yoo

Jining Li

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Renewable energy and clean storage technologies are at the forefront of the world's fight against climate change, including the UN-led move towards a carbon-neutral society. Because these complex technologies require more 'critical' metals and elements than fossil fuel-based technologies, the demands for raw materials in their manufacturing are skyrocketing and are projected to continue to increase into the foreseeable future.

With ore grades on a steep decline, huge amounts of low-grade ores will have to be mined and processed to satisfy the world's current and future demands for 'critical' metals and elements. Expansion of mining and mineral processing operations would mean more mining-related wastes—tailings, waste rocks and acid mine drainage (AMD)—notorious for their devastating and long-term destructive impacts on the environment.

This Special Issue explored repurposing/reprocessing of tailings and AMD treatment cost reduction as promising alternatives to manage mine wastes more sustainably. It also includes articles on the critical roles of redox conditions and galvanic interactions on mine waste stability, hydrogeochemical controls on waste rock weathering, and climate change impacts on AMD formation in closed mines.



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