

Special Issue

Advances in Novel Beneficiation Technology of Critical Minerals

Message from the Guest Editor

Critical minerals such as copper, lithium, cobalt, nickel, and rare earth elements are the fundamental material base underpinning many of today's rapidly evolving clean energy technologies.

Beneficiation techniques such as sensor-based ore sorting, flotation, magnetic separation, gravity separation, and leaching are employed for recovering critical minerals economically from ores on a large scale in mineral processing. With the clean energy transition gathering pace, the demand for these minerals is growing rapidly. Technological breakthroughs in processing, equipment, reagents, etc., are needed to increase the efficiency and greenness beneficiation of critical minerals.

This Special Issue aims to publish high-quality papers on the recent process of critical minerals beneficiation technology. Topics of interest for this Special Issue include, but are not limited to, the following:

- Application of dry and wet pre-discarding technology in low-grade ore beneficiation;

- Refractory copper/cobalt oxide ore flotation technology; reagents and equipment;

- Development of high-efficiency leaching technology;

We are looking forward to receiving your contributions.

Guest Editor

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Deadline for manuscript submissions

closed (30 November 2025)



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Message from the Editor-in-Chief

Separations offers the scientific community a high-quality, open-access journal option with rapid time-to-publication without any sacrifice of a rigorous peer-review process. We invite contributions ranging from fundamental characterization and instrumentation development through application of techniques to shed light on a broad spectrum of separation science needs. Since inception, *Separations*, has become unique in its combination of rapid publication and thorough scientific content. We invite you to consider us for your next contribution.

Editor-in-Chief

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