Special Issue

Separation Technology in Mineral Processing

Message from the Guest Editors

Separation technology is crucial for efficient, sustainable, and economically viable resource recovery. Innovative separation methods are required in order address the challenges associated with fine particle processing, low-grade ore beneficiation, and tailings management. This Special Issue highlights cutting-edge research on the physical, chemical, and biological separation techniques for metallic/non-metallic ores, industrial minerals, and secondary resources. We welcome contributions that advance fundamental theories, present experimental/computational models, or propose industrial applications in the following areas:

Novel separation methods

- Gravity/magnetic/electrostatic separation advancements
- Flotation reagents and bubble-particle interactions
- Sensor-based sorting and AI-driven process optimization

Fine particle processing

- Selective aggregation
- Carrier/column flotation for ultrafine particles

Sustainable practices

- Water/reagent recycling
- Biobeneficiation/bioleaching
- Tailings dewatering and dry stacking innovations

Cross-disciplinary approaches

- Hybrid separation circuits
- Machine learning for separation performance prediction

Guest Editors

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About the Journal

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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