

Special Issue

Pegmatites as Hosts of Critical Metals: From Petrogenesis to Mineral Exploration

Message from the Guest Editors

The increasing demand for critical metals has recently renewed the interest of the scientific community in pegmatites, as their rising economic importance requires improved petrogenetic and exploration models. Pegmatites are crustal igneous rocks with unique textural and geochemical characteristics, such as extreme crystal sizes and pronounced mineral zoning. This Special Issue aims to gather studies that examine the unique characteristics of pegmatites and address the conditions of their formation. We welcome studies that include, but are not limited to, the following topics:

- The origin of pegmatite-forming melts;
- The petrophysical and geophysical properties of pegmatites;
- Extreme crystal sizes and characteristic pegmatite textures;
- Rare-metal enrichment and depletion processes;
- Crystal nucleation and growth rates;
- Thermal modeling;
- Fluid and melt inclusions;
- Gemstones in pegmatites;
- Critical metals in pegmatites;
- Mineral chemistry;
- Geochemical diffusion halos;
- Pegmatite geochronology;
- New exploration methods.

We thank you and look forward to receiving your contributions.

Guest Editors

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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).