Special Issue

Geochemistry and Geochronology of High-Grade Metamorphic Rocks

Message from the Guest Editors

There exist many well-preserved upper amphibolite–granulite facies metamorphic rocks in the Phanerozoic orogens worldwide, implying a range in the spatio-temporal distribution of the high-grade metamorphism. At higher temperatures, rocks tend to melt, and dealing with silicate melts is the subject of igneous petrology. However, partial melting has always been both a metamorphic and an igneous aspect. Crustal rocks that are characteristically produced via partial melting are made up of a residual metamorphic rock and an igneous rock component, which serves as a key for linking metamorphism and magmatism. Nevertheless, the melting temperatures of rocks define the high-temperature limit of metamorphism. Melting temperatures are strongly dependent on pressure, rock composition, and the amount of water present. Geochemistry and geochronology of the high-grade metamorphic rocks in the middle and lower crust can reconstruct the scenery of structure and composition of the lower crust and crust–mantle interaction, let alone the benefits from deciphering high-temperature processes, including migmatite and granulite formation, crustal anatexis, and melt extraction.

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Deadline for manuscript submissions

closed (31 December 2024)

Minerals

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Impact Factor 2.2
CiteScore 4.4

mdpi.com/si/189860

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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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