Special Issue

Fission Track Analysis and Its Application in Mineralogy

Message from the Guest Editor

Apatite and zircon are common accessory minerals in igneous, metamorphic, and sedimentary rocks. Recently, there have significant advances in the understanding of the temperature dependence of fission track annealing and fission track length distributions. Fission track analysis provides detailed information on the low-temperature thermal histories of rocks and may be applied below ~120 oC for tracks in apatite and below ~350 oC for zircon. Both fission track and U-Pb, which are obtained from the same zircon and/or apatite grains, are widely used to study the thermochronology of different areas of geological interest. With these methodologies, it is possible to determine in-depth information for temperatures below ~800 oC for U-Pb in zircon and ~500 oC for U-Pb in apatite. Furthermore, fission track and U-Pb methodologies show excellent potential in elucidating solutions to a variety of geological problems, including sedimentary provenance, thermal history modeling of sedimentary basins, structural evolution of orogenic belts, and long-term continental denudation.

Guest Editor

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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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