Special Issue

Challenges and Future Trends in K–Ar ($^{40}Ar/^{39}Ar$) Geochronology, 2nd Edition

Message from the Guest Editors

Radiogenic 40Ar was discovered from natural minerals in 1948, and the K–Ar dating method has been developed since the 1950s. Subsequently, in the 1960s, the 40Ar/39Ar dating method was established, and further developments in its applications led to improvements in the in situ dating technique. Thus far, this K–Ar (40Ar/39Ar) method has been applied to many varieties of geological materials as the most approachable radiometric dating method. Understanding the behavior of argon also enables more accurate K–Ar (40Ar/39Ar) dating for young volcanic rocks which have experienced Ar isotope mass fractionation and for fluid-induced gold mineralization with excess argon. This Special Issue invites submissions on K–Ar (40Ar/39Ar) geochronology and geochemistry with a multidisciplinary scope, including field observations, petrology, mineralogy, structural geology, and numerical modeling. Studies that help to better understand argon's behavior in nature are particularly encouraged. Challenging studies on the in situ dating of planetary surfaces will be also welcome.

Guest Editors

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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.

Editor-in-Chief

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