

Special Issue

Recent Advances in Carbonate Clumped Isotope Thermometry

Message from the Guest Editor

We invite you to contribute to a special issue focused on recent breakthroughs in carbonate clumped isotope thermometry, a key tool for reconstructing past environmental conditions and the thermal history of minerals and fluids. This method, which measures heavy isotope bond ordering in carbonates (Δ_{47} , Δ_{48}), provides precise formation temperatures of carbonate rocks, independent of the $\delta^{18}\text{O}$ value of the water from which they formed. It has applications in paleoclimatology, sedimentology, sedimentary basin analysis, and tectonics. We are particularly interested in novel methodological improvements, enhanced calibration techniques, and innovative applications across various geological settings. Contributions addressing the new measurement of Δ_{48} composition, which opens fresh avenues for more precise temperature reconstructions or equilibrium/disequilibrium/kinetic processes, are especially welcome. We also seek studies on the impacts of solid-state reordering on isotope distributions, providing insights into diagenetic alterations and the long-term mineral stability of this paleothermometer.

Guest Editor

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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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