

## Special Issue

# Minerals Impact on CO<sub>2</sub> Geo-sequestration in Deep Reservoirs

### Message from the Guest Editors

CO<sub>2</sub> geo-sequestration is one potential method to dispose of excess CO<sub>2</sub> in the atmosphere. Deeply buried reservoirs such as saline aquifers, unmineable coal seams, tight shale reservoirs, and depleted oil reservoirs are often studied. When CO<sub>2</sub> is injected into these reservoirs, it interferes with the initial equilibrium, and chemical interactions occur between the injected CO<sub>2</sub> and reservoir rocks, specifically, the minerals in the reservoirs or in the nearby strata (caprock). The dissolution of CO<sub>2</sub> into strata brine generates an acidic environment, and the original carbonate minerals, such as quartz, biotite, etc. dissolve into the acid fluid. The concentration of chemical elements Ca, Mg, and K in the brine increases with the injection of CO<sub>2</sub>. The enhancement of reservoir porosity due to the dissolution of the minerals is dependent on the geochemical properties of the reservoir rocks. Reservoir permeability is improved due to the increase in porosity. On the other hand, the precipitation of these minerals during transportation blocks the fluid migration channels and reduces permeability.

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### Guest Editors

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### Deadline for manuscript submissions

closed (20 January 2022)



## Minerals

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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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### Editor-in-Chief

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