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Mineral Processes for Climate Change Mitigation

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Deadline for manuscript submissions:

closed (10 April 2023)

Message from the Guest Editors

Carbonate minerals play a crucial role in carbon capture, utilization and storage technologies (CCUS) as these provide a safe storage capacity for carbon dioxide (CO₂) on a geological time scale. CO₂ is fixed as solid carbonate through the reaction with Ca and Mg bearing materials (e.g.: ultramafic rocks and/or alkaline industrial wastes) at low- and high-temperature and pressure, in a process designated as mineral carbonation.

In this Special Issue, we welcome studies (laboratory, modelling, and field-studies) that describe recent advances in the synthesis of carbonate minerals in mineral carbonation settings and contribute to further understanding the factors that inhibit or enhance CO₂ sequestration. Topics of interest include studies on kinetics and mechanisms of nucleation and crystal growth, crystallization and dissolution pathways, the effect of impurities in crystal properties, characterization of amorphous and hydrated carbonate phases, synthesis of marketable high-purity carbonate products, mineral stability, microbial carbonates and organomineralization. Original research papers, state-of-the-art reviews, and short communications are very welcome.



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Special Issue



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Message from the Editor-in-Chief

Welcome to *Crystals*, the journal dedicated to the fascinating world of crystallographic research! Crystals are more than mere decorative elements; they hold the key to understanding the fundamental structure of matter. Our mission is to explore the crucial significance of this research across various fields. From medicine to technology, chemistry to geology, crystals play a vital role. Their structure provides insights into new advanced materials, innovative drugs, and groundbreaking technologies. Through *Crystals*, we delve into the microscopic world to discover solutions that will shape the future. Join us on a journey through the *Crystals*, where science merges with beauty and innovation.

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