

CO₂ 貯留層を模した条件下におけるドーソナイトの合成・溶解実験 Dawsonite synthesis/dissolution experiment under the relevant condition of CO₂ under- ground storage

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Geochemical trapping is a mechanism for defining the longer-term security of CO₂ underground storage. Especially, mineral trapping improves the storage security by the transformation reaction of injected CO₂ (liquid or supercritical phase) to carbonate minerals.

Recently, several studies based on the computer simulation predicted the formations of dawsonite (NaAlCO₃(OH)₂) as an initial phase of mineral trapping and that dawsonite may play important role for the storage security in the early stage of CO₂ storage. However, it has not been reported the formation of dawsonite in the experiments under the relevant condition of the CO₂ underground storage to date and the problem "whether dawsonite will be formed in the CO₂ reservoir and will contribute the improvement of the CO₂ storage security" is still remaining.

In this study, therefore, we conduct the synthesis/dissolution experiments of dawsonite under the CO₂ reservoir condition and discuss the formation/preservation condition of dawsonite. We further discuss the possibility of dawsonite formation in the CO₂ reservoir based on our experimental results.

キーワード: CO₂ 地中貯留, 鉱物トラッピング, ドーソナイト

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