

Kinetic Behavior of Carbon Dioxide Hydrate

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Carbon dioxide is important material such as global warming. For the study of carbon dioxide storage in the deep ocean sediment layer, formation kinetics of the carbon dioxide hydrate with sodium chloride and clay mineral mixture was measured. The mixture included 3wt% clay formed carbon dioxide hydrate faster than pure carbon dioxide and water mixture system in the initial stage, but some time later, the formation became slower than the carbon dioxide and water mixture without including clay mineral. The mixture included 3wt% NaCl formed hydrate slower than pure carbon dioxide system all over the measuring time. We also confirmed that the system included clay mineral promoted to form hydrate initially and inhibited it later from the system included 3wt% NaCl and 3wt% clay mineral.