The characteristics of methane and carbon dioxide hydrates in the deep ocean sea

신규철, 박영준, 설지웅, 이 흔*, 이경민[1]
한국과학기술원; [1]Purdue University
(h_lee@kaist.ac.kr*)

The carbon dioxide replacement of methane hydrate can be useful technology of a solution for global warming problem as well as energy problem. For this study, we investigate the effects of clay mineral and electrolyte to pure methane and carbon dioxide hydrates phase equilibria and formation. For the hydrate phase equilibria, both clay mineral and electrolyte moved the phase equilibrium curves to higher pressure region. For the hydrates formation, the clay mineral promoted to form hydrates at the initial stage, but finally, it worked on the inhibitor of hydrate formation. The electrolyte worked on the inhibitor for the whole reaction stage.