

Effect of Thermal Expansion on Gas Absorption Kinetics of Tetrahydrofuran Clathrate Hydrate

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Under low temperature and high pressure condition, various low molecular weight gas molecules like methane react with water, then clathrate hydrate is made. Clathrate hydrates called gas hydrates have some structures, sI, sII, sH etc. 'Host' water molecules make cage and then 'guest' gas molecules are entrapped. Gas hydrate is expected to replace petroleum energy. Because the amount of world gas hydrate is estimated more than twice as fossil fuels. Gas hydrates have infinite potential as the energy source of next generation.

In this study, we measured the gas absorption kinetics of thermally expanded THF hydrates in various energy gas and found much faster absorption tendency on thermally-expanded THF hydrate.