

## 가스 하이드레이트 생성에 대한 특성 연구

### A study on the formation characteristics of gas hydrates

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1 m<sup>3</sup> solid hydrate contains up to 200 m<sup>3</sup> of natural gas, depending on pressure and temperature. Such large volume of natural gas hydrate can be utilized to store and transport large quantity of natural gas in a stable condition. So, in the present investigation, experiments carried out for the formation of natural gas hydrate governed by pressure, temperature, and gas compositions, etc.. The results show that the equilibrium pressure of structure II (natural gas hydrate) is approximately 65% lower and the solubility is approximately three times higher than structure I (methane hydrate). Also, the subcooling conditions of the structure I and II must be above 9K and 11K in order to form hydrate rapidly regardless of gas components, but the pressure increase is more advantageous than the temperature decrease in order to increase the gas consumption. And utilizing nozzles for spraying water in the form of droplets into the natural gas dramatically reduces the hydrate formation time and increases its solubility at the same time.