Hydrate Technology for Methane Storage Applications

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Natural gas, the major constituents of which is methane, is believed to be a major source of energy with its large supply in the form of gas hydrates trapped in the permafrost areas. Understanding the nature of methane hydrates can also be beneficial to natural gas storage technology. With the hydrate structure, a large amount of gas can be stored. However, the hydrate formation kinetics is slow and limited due to its formation mechanism, which starts from the interface between the gas and liquid phases, and later blocks further formation. With the aid of promoters like porous materials, tetrahydrofuran, and surfactants, the limitation of the formation at the interface can be alleviated. This presentation will cover how the hydrate formation kinetics can be improved with the presence of promoters. Roles of each promoter will be reported. In addition, synergistic effects of different promoters on the formation kinetics will be discussed.

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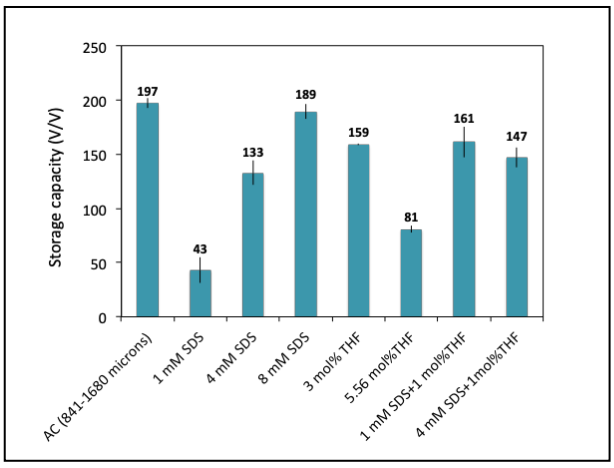

Methane storage capacity with different promoters.

Author Biography: **(Should not contain more than 100 words.)**

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