

Investigation on the effect of THF on Nitrogen Hydrate formation under isobaric condition

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ABSTRACT

In this paper, we studied nitrogen (N₂) hydrate formation in the presence of tetrahydrofuran (THF) under 3 different conditions; different concentration of THF (0, 3 and 30 %(v/v)), different temperature setting (room temperature and induced temperature) and different water content (15, 35 and 55 mL) in an isobaric condition. We found that in the presence of THF which acting as an enhancer, hydrate formation kinetic is highly influenced by these parameters. We observed a striking contrast in hydrate formation behaviour observed at room temperature (RT) and induced temperature (IT) with and without the presence of THF under similar operating conditions. At the presence of 30 %(v/v) of THF in 15 mL water, it can be seen that, hydrate tend to form faster than other samples. Visual observation of N₂hydrates are also conducted at 30 %(v/v) of THF in 15 mL water.

KEYWORDS:

Hydrates; Hydration; Nitrogen