

### New Ionic Liquids for Methane Hydrate Inhibition

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Recently, ILs has attracted great attention in oil industry because they can act as an inhibitor for gas hydrate inhibition. New ionic liquids (ILs) was developed for methane hydrate inhibition. Generally, ILs including inorganic anion are synthesized via anion exchange. On the other hand, the IL synthesized in this study was prepared via one step. In this study, we investigated the inhibition effect of X-IL on the methane hydrate formation. X-IL as a kinetic hydrate inhibitor (KIH) had enough induction time of 507.6 min at 1 wt% in water. The inhibition effect of X-IL is outstanding compared with those of the commercial polymer inhibitors such as poly(N-vinylcaprolactam) (PVCap) and Poly(N-vinylpyrrolidone) (PVP). In addition, this material shifted the hydrate equilibrium line to a lower temperature over the 50 pressure. X-IL is expected to be a promising methane hydrate inhibitor.