

RESEARCH PAPERS

甲烷水合物在纯水和抑制剂体系中的生成动力学

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摘要 Kinetic data of methane hydrate formation in the presence of pure water, brines with single salt and mixed salts, and aqueous solutions of ethylene glycol(EG) and salt+EG were measured. A new kinetic model of hydrate formation for the methane-Fwater systems was developed based on a four-step formation mechanism and reaction kinetics approach. The proposed kinetic model predicts the kinetic behavior of methane hydrate formation in pure water with good accuracy. The feasibility of extending the kinetic model to salt(s) and EG containing systems was explored.

关键词 [kinetics](#) [hydrate formation](#) [inhibitors](#) [methane](#) [brine](#)

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Kinetics of Methane Hydrate Formation in Pure Water and Inhibitor Containing Systems

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Abstract Kinetic data of methane hydrate formation in the presence of pure water, brines with single salt and mixed salts, and aqueous solutions of ethylene glycol(EG) and salt+EG were measured. A new kinetic model of hydrate formation for the methane-Fwater systems was developed based on a four-step formation mechanism and reaction kinetics approach. The proposed kinetic model predicts the kinetic behavior of methane hydrate formation in pure water with good accuracy. The feasibility of extending the kinetic model to salt(s) and EG containing systems was explored.

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