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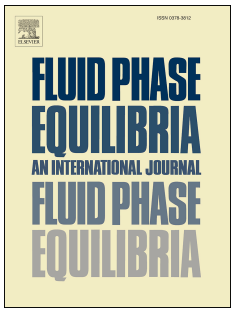

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Multiphase Flash Calculations for Gas Hydrates Systems

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ABSTRACT

In this study, the van der Waals and Platteeuw model was coupled with the Cubic Plus Association (CPA) equation of state (EoS) for equilibrium calculations in systems with gas hydrates. It has been applied to simple and complex multicomponent systems involving methane, ethane, propane, isobutane, carbon dioxide, nitrogen and hydrogen sulfide. Methanol, ethanol, monoethylene glycol, calcium chloride, sodium chloride and potassium chloride were contemplated as thermodynamic hydrate inhibitors. The calculations were performed in the presence of single and mixed inhibitors. The mole fraction of components in all phases were determined using flash algorithm procedures to improve the calculations accuracy. To evaluate the ability of the methodology, the prediction of hydrate phase behavior in the presence and absence of inhibitors was compared with the experimental