عنوان مقاله:

Effect of Temperature Functions a (T) on Prediction of CH4 and N2 Gas Hydrate Formation Conditions

محل انتشار:

هفتمین کنگره ملی مهندسی شیمی (سال: 1390)

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خلاصه مقاله:

In this research, by using Van der Waals–Plauteeuw model for solid hydrate phase and equations of state with mixing rules (j –j model) for calculation of fugacity of components in gas and liquid phases, three phase equilibrium conditions (VL H) W have been predicted in two hydratemixtures contain binary systems (CH4-H2O) and (N2-H2O). The pressure of hydrate formation has been calculated with four EOSs, VPT, PR, SRK and SW by using Danesh mixing rule. Also three temperature functions a (T) in PR equation of state have been studied that contain Soave, Tribble– Bishnoi (TB) and Nasrifar-Moshfeghiyan (NM). Mixing rule interaction parameters in each mixture have been optimized by ( ) W VL data and then optimized parameters have been used for three phase equilibrium calculations (VL H) W . Results show, for (T>302 K and P>775 bar) PR equation of state and for (T<290 K and P<159 bar) SRK equation of state have more accuracy in methane hydrate. In nitrogen hydrate mixture, SRK equation of state with 3% has minimum of error. Also TB temperature function with 7% error for (CH4-H2O) system and NM function with 8% .error for (N2-H2O) system in PR equation of sate have lower error than others functions

کلمات کلیدی:

Methane hydrate, Nitrogen hydrate, Equation of state, Gas hydrate, Three Phase equilibrium

لینک ثابت مقاله در پایگاه سیویلیکا: