عنوان مقاله:

Pertubed-Chain Statistical Associating Fluid Theory (PC-SAFT) Equation Of State For Prediction Of Vapor-Liquid Equilibrium System Solvent+Anti-Solvent CO2

محل انتشار:

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خلاصه مقاله:

In this work, the reliability of PC-SAFT equation of state developed by Sadowski et al., Ind. Eng. Chem. Res. 40 (2001) 1244 has been evaluated in prediction of vapor-liquid equilibrium (VLE) for solvent + anti solvent CO2 systems. The systems studied were divided into four categories; there were CO2 + hydrocarbon normal alkane, CO2 + hydrocarbon cyclic, CO2 + hydrocarbon aromatic, and CO2 + hydrocarbon ketone systems. The results show that PC-SAFT equation of state is capable of predicting VLE accurately for all categories of the systems with overall average absolute deviation of 2.4 %. The performance of PC-SAFT was found to be better than Peng- Robinson equation of states. In addition, the VLE behavior of those systems obtained in this work is necessary to be applied for designing and optimizing production of nano and micro particle in supercritical anti-solvent process.

کلمات کلیدی:

(C-SAFT; vapor-liquid equilibrium; solvent + anti-solvent CO2; Supercritical Anti Solvent (SAS