

ABSTRACT

A Study of The Binary Interaction Coefficients for Hydrocarbon-Hydrocarbon and Hydrocarbon - Carbon Dioxide Systems

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The recent increasing interest in enhanced oil recovery (EOR) methods has resulted in the need for accurate predictions of vapour-liquid equilibria (VLE) and volumetric phase behaviour of reservoir fluids. Generally, predictions are made using an equation of state (EOS). However, in using EOS's it has become clear that insufficient description of the heavier hydrocarbons (C_{7+}) significantly reduces the accuracy of predictions.

It has been established that the accuracy of predictions is considerably influenced by the values of interaction coefficients used, both for hydrocarbon-hydrocarbon and hydrocarbon-nonhydrocarbon systems.

In this study, generalized correlations are presented for estimating binary interaction coefficients for these systems for use with the Peng-Robinson EOS. These correlations allow for extrapolations to the higher molecular weight fractions ($>C_{7+}$), and should enhance EOS predictions when experimental data is lacking.