عنوان مقاله:

A Thermodynamic Model for Prediction of Asphaltene Precipitation from Crude Oils

محل انتشار:

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خلاصه مقاله:

In this study , a molecular thermodynamic model has been proposed for asphaltene precipitation under live oil conditions , at a wide range of pressures (up to reservoirs pressures) . The model is assumed that the precipitation phenomenon is a reversible process , and an equation of state SRK Eos is employed for phase behavior prediction. in this model a VLE and then SLE calculation is performed separately and sequentially.the characterization of unknown - heavy fraction of petroleum C7+ is obtained by the generatized molar mass distribution model [2], in which C7+ is represented by tour pseude-components. in this work the two heaviest pseudo - components of C7+ are identified as asphagtenes, that are considered as precipitating components where the lower pseudo -components are not . the model is verified by its ability to prediction of asphaltene precipitation in different thermodynamic conditions (T,P,and composition). also by using this model we are able to study the effect of pressure temperature and composition on the asphaltene precipitation.

کلمات کلیدی:

asphaltene precipitation , thermodynamic model, characterization, SRK EOS,VLE,SLE