

Stability of Hassi-Messaoud asphaltenes in media of different polarities

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Abstract The aim of this work is to explore the flocculation behavior of asphaltenes (extracted from a deposit recovered from a Hassi-Messaoud oil well) in solution in toluene according to the polarity of the flocculating medium. The flocculation thresholds related to the addition of two flocculating agents of different polarities (n-heptane and acetone) for three asphaltenic concentrations are obtained by means of near infra-red absorption spectrophotometry. The Hildebrand solubility parameters of the flocculated asphaltenic fractions are deduced using the Donnagio method based on the Flory-Huggins theory. The results obtained indicate that the interactions between the flocculated asphaltenic molecules within the toluene/acetone mixture are weaker than those in the toluène/n-heptane mixture.

Keywords : Asphaltenes, Hassi-Messaoud, Flocculation, Close IR spectrophotometry, Solubility parameter.