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عنوان مقاله:

Experimental Study on the Rate of Asphaltene Aggregation at the Oil-Brine Interface Utilizing Refractive Index Technique

محل انتشار:

دومین کنفرانس دوسالانه بین المللی نفت، گاز و پتروشیمی (سال: 1397)

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خلاصه مقاله:

Recently, Low Salinity Waterflooding (LSW) becomes an emerging enhanced oil recovery technique in which the salinity of the injected water is controlled to improve oil recovery vs. conventional, higher salinity waterflooding. The study of asphaltene colloidal properties is motivated by their propensity to aggregate, flocculate, precipitate, adsorb onto interfaces and, hence, pose considerable challenges for the petroleum industry. Asphaltene aggregation at the interface plays an important role in the reduction of interfacial tension.It is believed that asphaltene aggregation severely affect multiphase flow in porous media and consequently the final oil recovery. Thus for a better recognition of asphaltene behavior, the rate of aggregation should be investigated. When this is better understood, a better design strategy, for recognizing the asphaltene aggregation, is utilized.In this study, by using a refractive index metering setup, it was tried to determine the asphaltene aggregation rate at the interface of oil and brine.In this work, the effects of low and high salinity brines on asphaltene aggregation rate were investigated. Results revealed that at lower salinity, the rate of aggregation was much more than for water with higher salinity.

کلمات کلیدی:

Refractive index, low salinity, asphaltene, aggregation rate, interface

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