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Dynamic Interfacial Tensions Between Offshore Crude Oil and Enhanced Oil Recovery Surfactants

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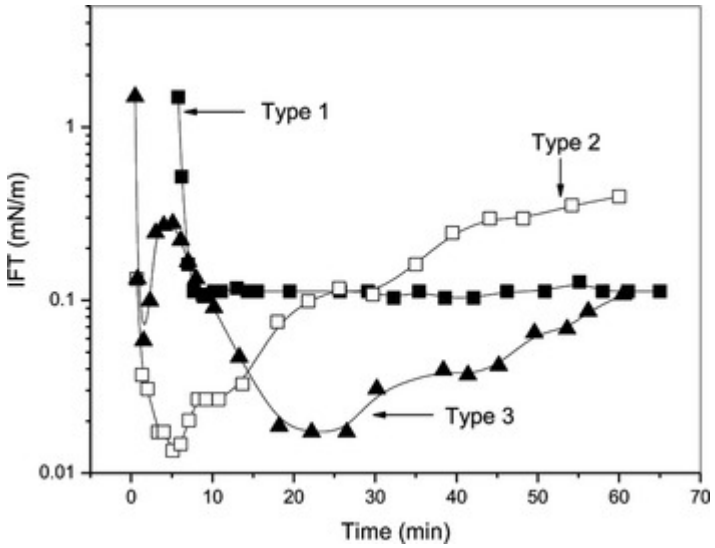
Abstract

The dynamic interfacial tensions between offshore crude oil and different types of EOR surfactants were investigated by spinning drop method at 65 degree under the condition of weak base (pH ~ 8) in the present work. Effects of surfactant concentration on the dynamic interfacial tension were investigated. In the presence of weak alkali, the active components of crude oil can react at the interface to produce surface-active species in situ. The interactions among the added surfactants, the petroleum active components and in situ produced surface-active species together determine the dynamic interfacial tension behaviors, whose curves show “L”, “V,” and “W” shapes, respectively. Surfactant type and concentration play the crucial roles on dynamic interfacial tension behaviors.



Keywords:

Crude oil | dynamic interfacial tension | enhanced oil recovery | surfactant

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