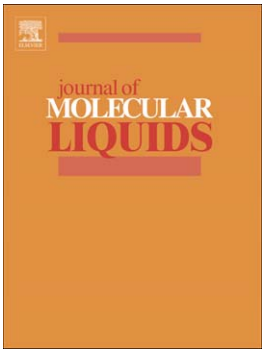

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Experimental Assessment of a Lysine Derivative Surfactant for Enhanced Oil Recovery in Carbonate Rocks: Mechanistic and Core Displacement Analysis

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Abstract

Enhanced oil recovery (EOR) from carbonate reservoirs is of great challenge due to the complex geology originated from high rock heterogeneity and viscous fingering phenomenon during a displacement process. One of the highly applicable EOR approaches is the utilization of surfactant especially for the aims of foam generation, wettability alteration, emulsion stability and well stimulation in petroleum industry. The dominant mechanisms of surfactant for increasing oil production are wettability alteration of reservoir rock and interfacial tension (IFT) reduction of oil-water system resulting in higher sweep efficiency by diminishing the adverse capillary forces existing in the porous media and easier flow of the residual oil toward the producing wells.