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Molecular Dynamics Simulation of Thickening Mechanism of Supercritical CO₂ Thickener

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Keywords

Molecular dynamics; Thickener; Supercritical carbon dioxide fluid; Viscosity

Abstract

Due to small shear viscosity of supercritical carbon dioxide, oil drilling leads to viscous fingering. Addition of polymer as thickener in supercritical CO₂ has been used for improving the sweep efficiency of flooding. The simulated shear viscosity of supercritical CO₂ systems increased with the addition of the polymer. The groups of the polymer have different ability to bind the supercritical CO₂ molecules. The binding effect can mainly be attributed to space grid

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