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Green Surfactants for Enhanced Oil Recovery: A Review

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Abstract

Enhanced oil recovery (EOR) has been shown to be an efficient oil recovery technology for recovering bypassed oil and residual oil that has been stranded in the reservoir. The goal of adopting EOR is to increase reservoir life by aiding in the use of water floods or other traditional methods of extending reservoir life beyond past economic restrictions. Among all improved oil recovery approaches, the flooding method has been demonstrated to be the most effective, and it is known as the surfactant flooding method, because to its capacity to minimize interfacial tension and improve mobility control. It has been demonstrated to be one of the most effective tertiary recovery strategies for obtaining high displacement efficiency. The performance of the tertiary approach is heavily dependent on numerous essential components, including surfactant content, pH, and salinity. GEOR, or green enhanced oil recovery, is the current trend that academics are looking at since it will help drive down costs while also being more ecologically friendly. Researchers have demonstrated that creating a green-based surfactant for surfactant flooding is feasible and, in certain situations, more efficient. Therefore, this review paper presented the latest research on green surfactants from various resources used for surfactant flooding for enhanced oil recovery.

Keywords: EOR; Green surfactant; Surfactant flooding; Oil recovery.