

CO₂ PHILIC SURFACTANT FOR CO₂ FOAM STABILITY FOR ENHANCED OIL RECOVERY APPLICATION

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The in house developed surfactant was evaluated for enhanced oil recovery (EOR) suitability. The evaluation was performed examining the fluid compatibility at various salinities and temperature conditions followed by the interfacial tension (IFT) and foaming ability measurements. Interesting results were observed by IFT of surfactant solution and CO₂ gas affinity at 90 oC and up to 2700 psi. Without surfactant, the IFT of CO₂-brine were dropped from 70 mN/m to 30 mN/m, by the addition of surfactant, the minimum IFT achieved was 0.06 mN/m. The produced three tailed surfactant produce much stable foam which has the mobility reduction factor (MRF) of 2.4. The MRF of produced surfactant was much better than AOS (commercial surfactant), which has the MRF of 1.2 at same operating conditions. The same trend was also observed the oil recovery achieved by core flood experiment, performed at 90 oC. Maximum recovery factor (RF) achieved by three tailed was of 85% ROOIP. The adsorption factor was controlled by the addition of alkali and was observed less than 0.6 mg/g

Biography

Muhammad Sagir has over 10 years of research experience in the field of Chemical Sciences. In this period, he has been working in Malaysia and Pakistan. He is currently working as an Assistant Professor at the Department of Chemical Engineering, University of Gujrat. Currently, he is involved in 4 different Research Projects as PI, Co-PI and Collaborator and has been part of a number of research projects completed in various capacities. He has supervised many M Phil student theses and a number of M Phil students are currently under his supervision. He has published 50+ journal papers in international peer reviewed journals (ISI Indexed) with high impact factors and over 40 papers/abstracts in international conferences.

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