

عنوان مقاله:

Aqueous Foams Stabilized by Hydrophilic Silica Nanoparticles via In-Situ Physisorption of Nonionic TX100 Surfactant

محل انتشار:

فصلنامه انرژی و محیط زیست ایران، دوره 4، شماره 1 (سال: 1391)

تعداد صفحات اصل مقاله: 9

نویسندگان:

Suriatie Yusuf - Faculty of Petroleum and Renewable Energy Engineering, University of Technology Malaysia

Muhammad Manan - Faculty of Petroleum and Renewable Energy Engineering, University of Technology Malaysia

Mohd Zaidi Jaafar - Faculty of Petroleum and Renewable Energy Engineering, University of Technology Malaysia

خلاصه مقاله:

This paper present the study of aqueous CO foam prepared 2 by a mixtures hydrophilic silica nanoparticles and non-ionic Triton X100, TX100, surfactant. The synergistic effects of the mixture on stabilizing the CO₂ foam were inferred into few key parameters namely; particles and surfactant concentration, adsorption of surfactant onto the particles via surface tension and adsorption isotherm, foam lifetime and, the size of the bubbles produced. It was found that the adsorption behaviour of TX100 on silica surface exhibit a particular characteristics depend on the concentration of silica, high total surface area available leads to high adsorption of surfactant molecules. The synergetic performance of silica/TX100 in stabilizing foam can be observed at low (0.01%) and intermediate (0.1%) concentration of TX100. Lower concentration required low silica concentration while the intermediate concentration required high silica fraction .in the dispersion to stabilize the foam

کلمات کلیدی:

Adsorption/ Silica nanoparticles/ TX100/ Foam stability

لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/251945>

