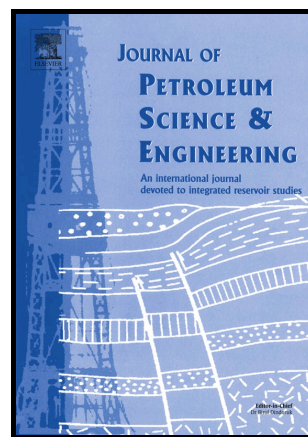


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## Reducing Surfactant Adsorption on Rock by Silica

### Nanoparticles for Enhanced Oil Recovery

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#### Abstract

This paper aims at making a thorough investigation on surfactant adsorption on rock under the influence of silica nanoparticles (SNP). The results showed that SNP can reduce surfactant adsorption effectively. With SNP concentration of 0.1, 0.2 and 0.3 wt%, static adsorption experiments showed that sodium dodecyl sulfate (SDS) adsorption can be significantly reduced to 2.57, 2.12, and 1.73 from 2.84 mg/g, and the dynamic adsorption of SDS decreased to 0.92, 0.77, and 0.66 from 1.16 mg/g, respectively. Our subsequent tests conformed a 4.68% growth of oil recovery by the injection of SNP - surfactant solution compared to the normal surfactant solution. The

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