

2nd International Conference onPETROLEUM ENGINEERING AND PETROCHEMICALS
&7th WORLD OIL AND GAS CONGRESS

May 22-23, 2019 | Dubai, UAE

New flotation technique for investigation of carbonate rock wettability alteration in presence of low salinity water and nano-fluids**Mehdi Sadeghi, Rohallah Hashemi and Hamidreza Shahverdi**

Isfahan University of Technology, Iran

As a modern approach towards EOR studies, a new flotation technique was introduced as a fast cost-effective repeatable quantitative method for determination of wettability alteration in carbonate rocks in presence of low salinity water and nano-fluids. In this regard, the impact of low-salinity water and nano-silica fluid were investigated using a new flotation method, and flotation data was compared with those from classic methods including contact angle measurement and spontaneous imbibition.

Flotation results are in great agreement with the other findings, while enormously reducing the time required for experiments from at least 60 days to less than two weeks. 10-times diluted Persian Gulf water was found to be the optimum low-salinity water, demonstrating a better performance in comparison to brines with higher or lower salinity. Also nano-silica fluid containing 0.05% weight of nanoparticles was determined as the most satisfactory nano-fluid.

Hr_Shahverdi@cc.iut.ac.ir