

عنوان مقاله:

Potential assessment of silica aerogels nanosuspensions for wettability alteration

محل انتشار:

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خلاصه مقاله:

Wettability alteration of sandstone slices and glass surfaces from hydrophilic to natural wet with silica aerogel nanosuspensions is considered. Sessile drop contact angle method was used to measure the contact angle of treated surfaces. The effect of gravity on deposition of nanoparticles agglomerates in wettability alteration also considered in spite of adsorption mechanism. Different concentrations of nanosuspensions, core position and initial saturation of cores were investigated. Contact angle measurements show that silica aerogels have good potential for changing wettability. Adsorption was not the only wettability alteration mechanism and aggregation of nanomaterials and deposition of them also affect the results. Sandstone surfaces with initial 0° contact angle could be successfully changed up to 89° and glass surfaces with initial contact angle of 20° changed up to 77° with different amounts of silica aerogels nanosuspensions.

کلمات کلیدی:

wettability alteration, silica aerogels, nanoporos, nanosuspension, contact angle

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