

عنوان مقاله:

Asphaltene Stability and Wettability Alteration During Smart Water Flooding

محل انتشار:

دومین کنفرانس بین المللی فناوری های جدید در صنایع نفت، گاز و پتروشیمی (سال: 1399)

تعداد صفحات اصل مقاله: 8

نویسندگان:

Sepideh Viskarami - Petroleum Engineering Department, Ahvaz Faculty of Petroleum Engineering, Petroleum University of Technology (PUT), Ahvaz, Iran

Siavash Ashouri - Petroleum Engineering Department, Ahvaz Faculty of Petroleum Engineering, Petroleum University ofTechnology (PUT), Ahvaz, Iran

Bahram Soltani Soulgani - Petroleum Engineering Department, Ahvaz Faculty of Petroleum Engineering, Petroleum University ofTechnology (PUT), Ahvaz, Iran

خلاصه مقاله:

Invasion of external fluids into the reservoir during different operations could cause formationdamage in the form of asphaltene deposition, which consequently, reduces the oil recovery of therecoverable reserve. Removing and preventing the asphaltene deposition is a very challenging task. Theobjective of the present study is to experimentally investigate the wettability alteration duringsurfactant-smart water flooding and its potential to mitigate asphaltene deposition damage in originaloil-wet reservoirs. In this regard, contact angle experiments on carbonate surface treated with different solutions showed contact angles lower than 90° . Thus, wettability alteration from oil wetting to morefavorable water wet states was achieved. The highest wettability alteration index of 0.9 was obtained when surfactant in a brine solution containing 9.81 g/l sulfate ion has been used, which revealed that amounts of carboxylate acid adsorbed on the carbonate surface, were removed. The modified surface reduced the hydrophobicity .of the surface and promoted the oil production from the reservoir

کلمات کلیدی:

Surfactant flooding, Smart water flooding, Wettability alteration, Contact angle, Asphaltene

لینک ثابت مقاله در پایگاه سیویلیکا:

https://civilica.com/doc/1202143

