عنوان مقاله:

A New Approach to Simultaneously Enhancing Heavy Oil Recovery and Hindering Asphaltene Precipitation

محل انتشار:

فصلنامه علوم و فناوری نفت و گاز, دوره 1, شماره 1 (سال: 1391)

تعداد صفحات اصل مقاله: 6

نویسندگان:

E Joonaki - *Ahwaz Faculty of Petroleum, Petroleum University of Technology, Ahwaz, Iran*

Sh Ghanaatian - *Ahwaz Faculty of Petroleum, Petroleum University of Technology, Ahwaz, Iran*

Gh Zargar - *Ahwaz Faculty of Petroleum, Petroleum University of Technology, Ahwaz, Iran*

خلاصه مقاله:

A new chemical compound is developed at Petroleum University of Technology to enhance therecovery of the free imbibition process and simultaneously hinder asphaltene precipitation. Thecompound is tested on heavy oil samples from Marun oil field, Bangestan reservoir. The effects ofthe chemical compound on viscosity, hydrocarbon composition, and average molecular weight ofthe heavy oil are investigated. It is found that the substance dramatically reduces oil viscosity andmolecular weight and hinders the precipitation of asphaltene in the heavy oil. The results of freeimbibition tests demonstrate a significant recovery enhancement after oil reacts with the compoundand is used in water in an Amott cell. Finally, the new chemical compound causes a significantreduction in surface tension and contact angle. This is verified by the molecular analysis of heavy oilafter reacting with this ionic compound.

کلمات کلیدی:

Enhanced Heavy Oil Recovery, Asphaltene Precipitation, Recovery Factor, Free Imbibition Test