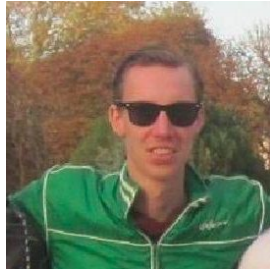


Biopolymers for Enhanced Oil Recovery



Name: T.P. Stokman
Function: Master student in Industrial Engineering & Management
End date: 03-2014
E-mail: s1728342@student.rug.nl
Supervisor(s): prof. dr. F. Picchioni
MSc. F. van Maastrigt (PhD researcher)

Description of research

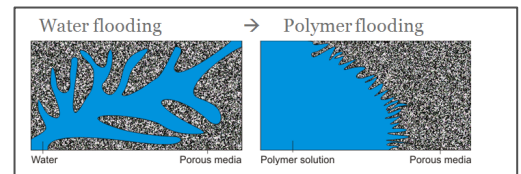
The global desire for energy still remains highly dependent from oil. Around 30% of all energy worldwide is provided, and will still be provided, by oil (2010-2040).

Most oil nowadays is produced at mature fields and the rate of new field discoveries has been declining in the last decades, in fact the volume discovered has fallen well below volume produced. Therefore an increase in recovery from existing fields will be of interest and critical to meet the growing energy demand in the future. Actually still large amounts of oil remain entrapped in the current reservoirs, and are target for Enhanced Oil recovery (EOR) techniques.

Polymer flooding is one of the many EOR methods; it is in an improvement of currently used water flooding method and therefor applicable to current systems. Water-soluble polymers are dissolved in water to increase the viscosity. This increase in viscosity can improve the sweep efficiency during oil recovery.

Currently used polymers aren't resistant to all reservoir conditions such as, (1) high temperatures, (2) high salinity and (3) high shear. Furthermore today's polymers are not environmentally friendly when left underground.

A promising new practice is the use of biopolymers, which are, (1) biodegradable, (2) high temperature resistant and (3) better resistant to high saline conditions. In this research a bunch of biopolymers is researched against reservoir conditions and known issues present with today's polymers.



university of
 groningen

faculty of mathematics
 and natural sciences