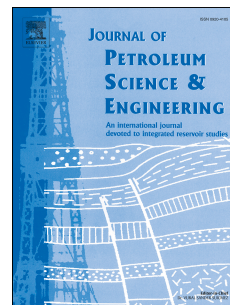


Accepted Manuscript

Oil recovery from tank bottom sludge using rhamnolipids

Chuhan Liu, Yin Zhang, Shanshan Sun, Lixin Huang, Li Yu, Xiaonan Liu, Ruiqiu Lai, Yijing Luo, Zhiyong Zhang, Zhongzhi Zhang



PII: S0920-4105(18)30519-9

DOI: [10.1016/j.petrol.2018.06.031](https://doi.org/10.1016/j.petrol.2018.06.031)

Reference: PETROL 5038

To appear in: *Journal of Petroleum Science and Engineering*

Received Date: 25 January 2018

Revised Date: 12 May 2018

Accepted Date: 12 June 2018

Please cite this article as: Liu, C., Zhang, Y., Sun, S., Huang, L., Yu, L., Liu, X., Lai, R., Luo, Y., Zhang, Z., Zhang, Z., Oil recovery from tank bottom sludge using rhamnolipids, *Journal of Petroleum Science and Engineering* (2018), doi: 10.1016/j.petrol.2018.06.031.

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Oil Recovery from Tank Bottom Sludge Using Rhamnolipids

Abstract: Oil sludge has become a major impediment to the development of the petroleum and petrochemical industries with the growth of oil production worldwide. In this research, rhamnolipid biosurfactant produced by *Pseudomonas aeruginosa* was used to recover oil from oil tank bottom sludge. The optimum value of the fermentation broth (with rhamnolipid biosurfactant concentration of 5.4 g/L) addition was a volume fraction of 2 % (v/v). Optimal temperature (65 °C), liquid/solid ratio (3:1), washing time (3 h), and agitation intensity (300 rpm) for oil recovery were determined. Wastewater from oil recovery was flocculated with 400 mg/L polyaluminum chloride for reuse. The moisture of the recovered oil was (0.42 ± 0.12) %, which could directly enter into the refinery process. The solid particles in the oil sludge exhibited a porous structure that adsorbed a significant amount of oil and increased the difficulty of oil recovery. Results showed that the fermentation broth of *P. aeruginosa* can be used to recover oil from oil sludge and has potential industrial applications.

Download English Version:

<https://daneshyari.com/en/article/8124391>

Download Persian Version:

<https://daneshyari.com/article/8124391>

[Daneshyari.com](https://daneshyari.com)