

# Accepted Manuscript

Heavy crude oil upgrading using homogenous nanocatalyst

Mahshad Alaei, Mansour Bazmi, Alimorad Rashidi, Alireza Rahimi



PII: S0920-4105(17)30647-2

DOI: [10.1016/j.petrol.2017.08.031](https://doi.org/10.1016/j.petrol.2017.08.031)

Reference: PETROL 4194

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

Received Date: 18 April 2017

Revised Date: 29 July 2017

Accepted Date: 11 August 2017

Please cite this article as: Alaei, M., Bazmi, M., Rashidi, A., Rahimi, A., Heavy crude oil upgrading using homogenous nanocatalyst, *Journal of Petroleum Science and Engineering* (2017), doi: 10.1016/j.petrol.2017.08.031.

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.

**Heavy crude oil upgrading using homogenous nanocatalyst**Mahshad Alaei<sup>1\*</sup>, Mansour Bazmi<sup>1</sup>, Alimorad Rashidi<sup>1</sup>, Alireza Rahimi<sup>2</sup><sup>1</sup>Nanotechnology Research Center, Research Institute of Petroleum Industry (RIPI) - west

Blvd. Azadi sport Complex, P.O.Box:14665-1998, Tehran- Iran

<sup>2</sup>Industrial Protection Division, Research Institute of Petroleum Industry (RIPI) - west

Blvd. Azadi sport Complex, P.O.Box:14665-1998, Tehran- Iran

\*e-mail: alaiem@ripi.ir

**Abstract**

This research is related to the preparation of heavy crude oil upgrading homogenous nano catalyst. The present research is directed to reduce the operational temperature of catalytic hydrocracking of heavy crude oil and also to increase the yield of process by utilizing the lower concentration of the synthesized nano catalyst. Therefore, we have successfully prepared kerosene from heavy crude oil during a hydrocracking reaction in the presence of the as-prepared oil soluble homogenous nano catalyst. In this reaction, liquid product yield is more and the reaction temperature is less than the other previous similar researches. So, the novelty of this research is preparation of the exfoliated-MoS<sub>2</sub> nanoparticles, utilization of this new homogenous nanocatalyst in the hydrocracking and upgrading of heavy crude oil and demonstration of its excellent properties in comparison with the similar catalysts that have been reported in the previous researches. This research was performed in four steps. Firstly, MoO<sub>3</sub> nanoparticles with average particle size about 50 nm were prepared with spray pyrolysis method. Secondly, the as-prepared

Download English Version:

<https://daneshyari.com/en/article/5484034>

Download Persian Version:

<https://daneshyari.com/article/5484034>

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