

# Petroleum Engineering

August 15-17, 2016 London, UK

## Study the physical and chemical characteristics of crude oil emulsions and their thermochemical demulsification

**Akbota Adilbekova, K I Omarova and Musabekov K B**  
Al-Farabi Kazakh National University, Kazakhstan

Demulsification is one of the important stages in the petroleum processing. The breaking of crude oil emulsions (demulsification) is necessary to avoid problems during the transportation and processing of oil. The presence of water in crude oil is undesirable and can result in pipeline corrosion and increase the cost of transportation because of chloride salt content in aqueous phase of emulsion. Therefore, preparation of oil for processing includes primarily dehydration and desalting of oil. The aim of the present work is to study the physicochemical properties of crude oil of the Kazakhstan fields (Zhanaozen and North-West Konys) which are known by high ability to form stable oil emulsion. Qualitative and quantitative composition of main stabilizing components of oil emulsions (resins, asphaltenes and high molecular paraffins) was determined. It was found that samples relate to fine dispersed oil emulsions by dispersion and to less stable (Konys) and more stable (Zhanaozen) oil emulsions by ability to form an emulsion. Light oil of Konys oilfield contains 11.5% of paraffins, 0.69% resins and 0.19% asphaltenes. The same measurements were carried out for heavy oil of Zhanaozen where paraffin content exceeds 30%, resins equal to 1.5% and asphaltenes – 0.6%. In this work, thermochemical dewatering of crude oil samples using non-ionic surfactants was carried out. The results reported, contribute to a better understanding of the water/oil demulsification mechanism and selection of effective chemical agents.

### Biography

Akbota Adilbekova graduated from Al-Farabi Kazakh National University in 1995. She received degree in 2001 in Chemical Sciences. She is an Associate Professor at the Analytical, Colloid Chemistry and Technology Rare Elements. She has published more than 35 papers in different journals and conference proceedings.

[akbota\\_a@mail.ru](mailto:akbota_a@mail.ru)

### Notes: