The Effect of a Local Bacteria on Physical Characteristics of Abu Dhabi Crude Oil

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Keywords: Crude Oil, Bacteria, Microorganisms, Green Tea, saline water

I. Abstract

Crude oil is the raw material for many industries to produce consumer products such as gasoline, paraffin oils, asphalt, domestic fuel oil, and polymers. In contrary, sometimes its presence can cause destruction of the environment. In this work, the characteristics of target Abu Dhabi crude oil are investigated under the influence of microorganisms (bacteria) cultivated in a green tea media. Bacteria influence on crude oil chemical composition and physical-chemical properties such as oil viscosity and surface tension are studied. Several samples were prepared using deionized water, green tea, cultivated green tea, sodium chloride and crude oil. Emulsions formation were observed for some samples. Promising results obtained can have applications in oil industry.

II. Image:



III. Biography:

Omar Chaalal, PhD from New Castel upon Tyne England and M.S. Eng. from Stevens Institute of technology NJ USA, is an Associate Professor of Chemical Engineering at Abu Dhabi University ADU in the United Arab Emirates. Chaalal is an internationally renowned expert in the separation technologies. He is the inventor of the EnPro Process that deals with the sequestration of carbon dioxide and global warming reduction. Omar has authored 50 refereed publications, 3 European patents and over 200 presentations.

Hadil Abu Khalifeh, PhD and M.A.Sc. Ryerson University Toronto, Canada. Hadil is an Associate Professor of Chemical Engineering at Abu Dhabi University (ADU) in the United Arab Emirates. Hadil has developed and implemented Enhanced Oil Recovery (EOR) processes technology in her research. Hadil has published several papers in highly regarded scientific journals in chemical engineering, and participated in a number of conferences.

Sumaita Rahman , Sumaita Rahman holds a Bachelors degree in Chemical Engineering from Abu Dhabi University. She has previously published a paper on CO2 capture which was critically acclaimed at ICCMP 2018 held in Bangkok.