EXTRACTION OF OIL FROM EGYPTIAN OIL SHALE

A THESIS

Presented to the Graduate School
Faculty of Engineering, Alexandria University
In Partial Fulfillment of the
Requirements for the Degree

Of
Master of Science

In

Chemical Engineering

By

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2015

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Acknowledgement

Thanks to ALLAH, I could finish this thesis only by his help. I would like to express my sincere appreciation and gratitude to

Prof. Dr. Yehia A. El-Taweel
Prof. Dr.Ramdan Abu El-Ella
Prof. Dr. Hassan Farag
Dr. EhssanNassef

For their strong support and encouragement to do something that distinguished me from others and for all what they have done for me. No words can express my feelings towards them. I would like to express my sincere gratitude to Pharos University for the facilities that supported me during my experimental work by the new laboratories and the new analysis devices.

Also, a special thanks to my parents for their prays to me.

Finally, my thanks are also due to every one who helped me in this work.

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ABSTRACT

Shale oil seems a promising alternative fuel source, because of the increasing demand for oil in many organizations and governments. In the present work, the yield of shale oil extracted by mechanical agitation and by sonication was used in the solvent extraction of Quseir's oil shales. The present study highlights the characterization of Quseir's oil shales using various analytical techniques such as Elemental analysis, Infrared spectroscopy (IR), and the Morphology study of oil shale (SEM).

In case of the mechanical agitation, the effect of solvent type on the extraction of oil from Quseir's oil shales was studied. The experimental results revealed that the extraction yield obtained by toluene and the mixture of (n-hexane+methylene chloride) are compartively high compared to other solvents.The thesis also studied the effect of amount, type of solvent, particle size of oil shale and time of the contact. The study also is focused on the analysis of shale oil samples by gas chromatography (G.C) and thermal analysis (T.G.A) which revealed that the oil has a high content of hydrocarbons.In case of sonication the same trend was observed for the same solvents but with higher percentage yield of oil extracted.

As regarding percentage yield of oil tetrahydrofuran (THF) gave a percent yield of oil 23 on using mechanical agitation, but on using sonication the percent yield of oil increased remarkably to (73 %).

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