

A Novel UMP Demulsifier, ND-20-02 Assisted-Microwave Technology for Separation of Crude Oil Emulsions



Patent

- IP 2011000218
- MY-158593-A

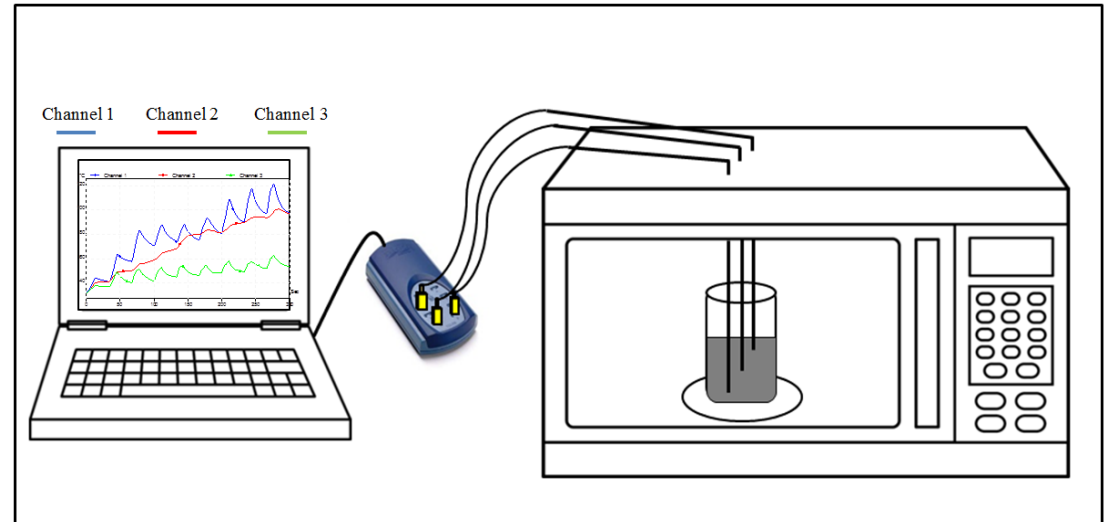
INVENTOR: PROF. DR. ABDURAHMAN HAMID NOUR
FACULTY: Department of Chemical Engineering, College of Engineering
UNIVERSITY: Universiti Malaysia Pahang, UMP
EMAIL: abrahman@ump.edu.my
CO-INVENTORS: : PROF. DR. ROSLI MOHD YUNUS; ASSOC. PROF. DR. AZHARY HAMID NOUR; MR. ALI HASSAN ABDELRAHMAN; MANAL SULIMAN OMER; RUSHDI GAAFAR



Product Background

Traditional ways of breaking emulsion using heat and chemicals are disadvantageous from economic and environmental perspectives. In this invention, the potentials of UMP formulated demulsifier assisted-microwave in demulsification of water-in-crude oil emulsions are investigated. The work began with some characterizations to provide understanding of fundamental issues such as formation, formulation and breaking of emulsions by both chemical and microwave approaches. The aim was to obtain optimized operating condition as well as fundamental understanding of water-in-crude oil stability, upon which further development on demulsification processes could be developed. The results obtained in this invention have exposed the capability of UMP demulsifier assisted-microwave technology in separation of water-in-crude oil emulsion compared with conventional methods.

State of the Art/ Methods



Novelty/ Originality/ Inventiveness

1. The novelty of this invention is the formulation of demulsifier, DS-20-02 by corn oil which accelerate the separation process.
2. The technology is economically competitive due to introduction of a new raw material compared to conventional raw materials.
3. UMP demulsifier assisted-microwave is very efficient for separation of crude oil emulsions

Product Image and Product Characteristics/Results



Marketability & Commercialisation

- UMP in a Process to Sell 2 of its IP to International Industry for Commercialization and Production in a mass volume

Patent

Patent NO: MY-158593-A
 Patent NO:2011000218

Cost Analysis

Benefits/Usefulness/ Applicability

- Environmentally friendly
- Economically competitive
- Technically visible
- 30% reduction in cost of fuel
- 60% reduction in emissions
- 95% more efficient than the pre-processed oil

Environmental Impact

- ❖ UMP Demulsifier ND-20-02 is environment friendly surfactant, highly efficient surfactant of low cost and high performance for crude oil transportation
- ❖ Economically competitive (RM30/Liter)
- ❖ 30% reduction in cost fuel
- ❖ 60% reduction in emissions

Status of Innovation

- ❖ The product ready for commercialization
- ❖ The product (UMP Surfactant) has secured an International Industrial Grant Total RM850,000.00
- ❖ UMP and The Industry (EUT) are signed MOA for more Research Fund

Achievement/Award

- GOLD MEDAL, ITEX 2020
- Secured International Industrial Grant amount, RM 850,000.00
- MOA Signed for commercialization
- MOA Signed for Collaboration between UMP and EUT



Collaboration/Industrial Partner



EASTERN UNITY
TECHNOLOGY



Malaysian Technology Development Corporation

