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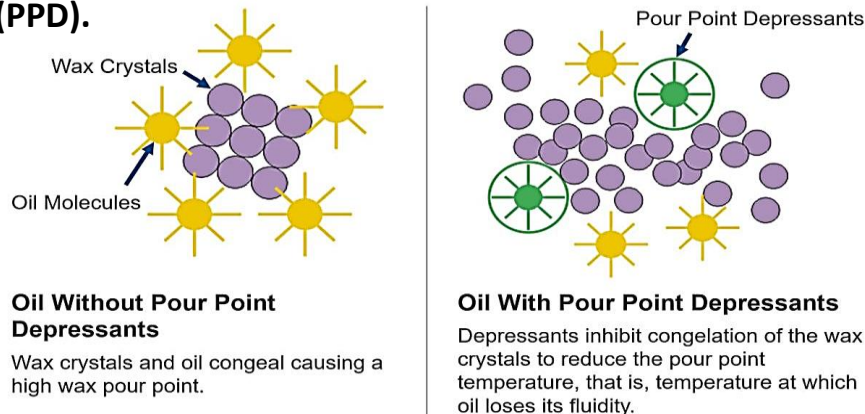
Problem statement

- Wax deposition affects economic growth, due to the blockage of pipes that leads to pipeline rupture and leakage.

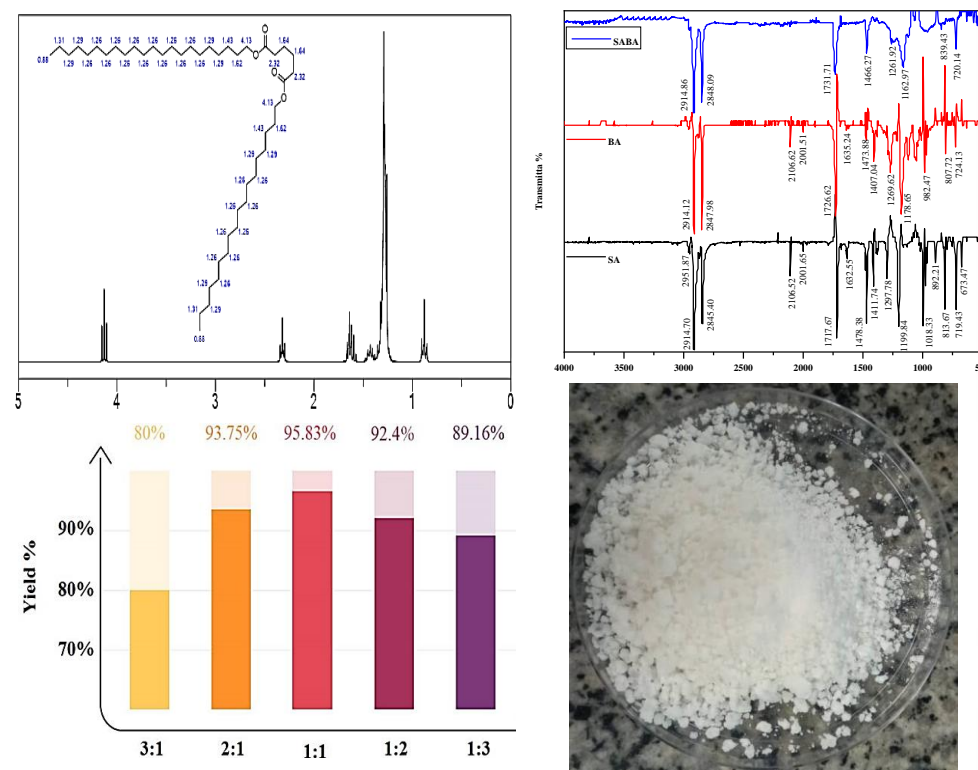


Product Background

- SABA PPD copolymer was synthesized by different monomers which are stearyl acrylate (SA) and behenyl acrylate (BA) using a free radical solution polymerization method as a novel polymeric pour point depressant (PPD).



Product Image and Product Characteristics/Results



- Disappearance of the 1 H-NMR vinyl proton signal and absorption loss of C=C shows successful synthesis of SABA copolymer

Functionality of Product

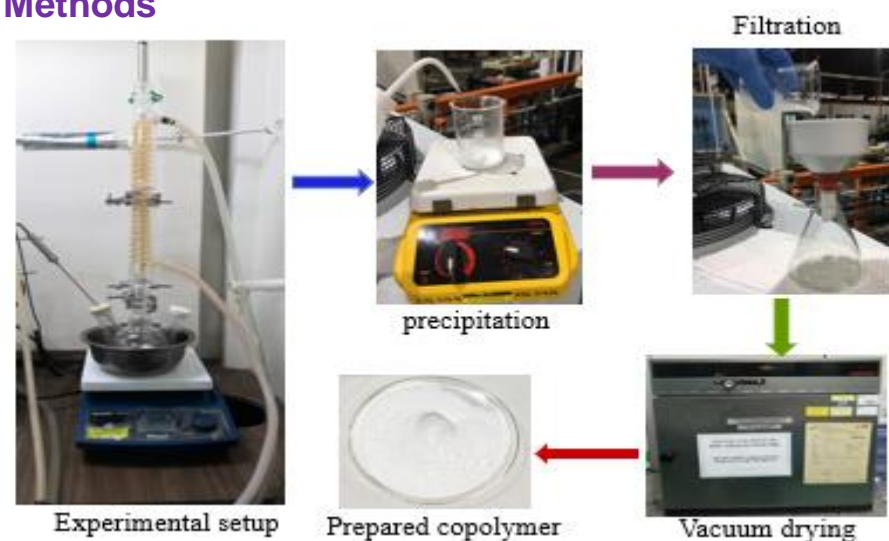
SABA copolymer shown the highest inhibition performance on the reduction of wax deposit



Novelty/ Originality/ Inventiveness

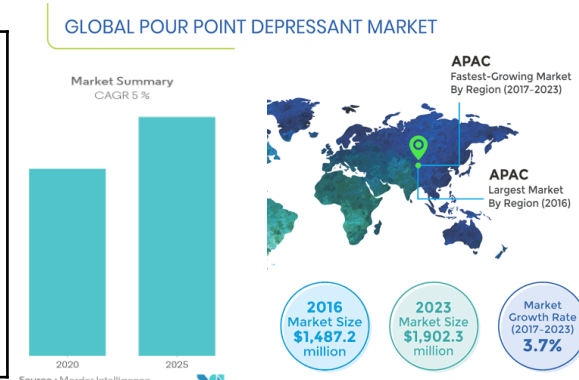
- A novel monomer that is behenyl acrylate (BA) is inserted to synthesized with (SA) for the formation of highly stable copolymeric particles.

Methods

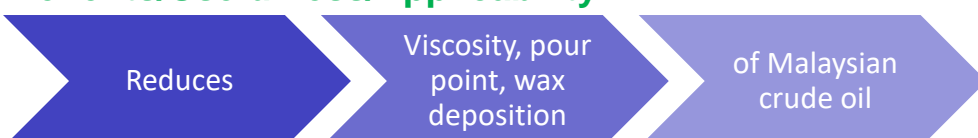


Marketability & Cost analysis

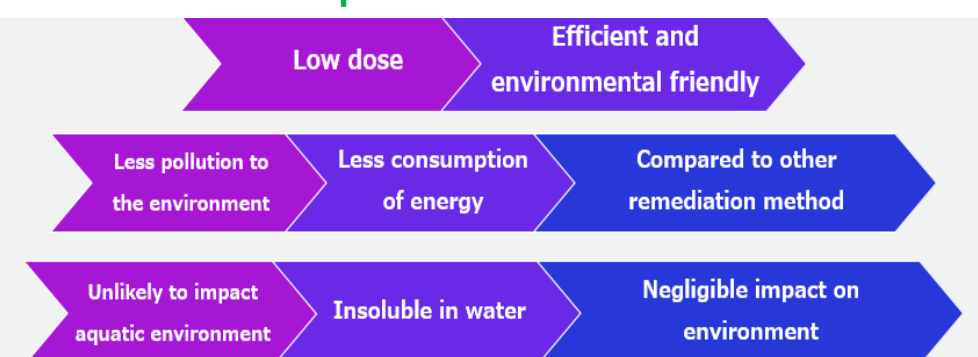
| | RM/kg |
|----------------------------|-------|
| Raw materials | 650 |
| Manufacturing | 200 |
| Shipping | 50 |
| Total cost | 1300 |
| Selling price of PPD (EVA) | 1900 |
| Profit | 400 |



Benefits/Usefulness/Applicability



Environmental impact



Collaboration/Industrial Partner

CLARIANT

Publication

- Petroleum Science* (2018), 1-14. IF-0.418(Q1-IF-0.418) :DOI:10.1007/s12182-018-0241-2
- Petroleum Science and Technology* (2020) :Accepted (Q3)
- Journal of King Saud University – Engineering* (2019). DOI: <https://doi.org/10.1016/j.jksues.2019.05.003>
- IOP Conf. Series: Materials Science and Engineering* (2019), 469 .01200 :DOI:10.1088/1757-899X/469/1/012001
- IOP Conf. Series: Materials Science and Engineering* (2019). p. 012028.

Achievement/Award

- SILVER CITREX, 2020
- SILVER CITREX, 2019
- SILVER CITREX, 2014
- BRONZE CITREX, 2014