

POLYSULFIDE: SORBENT MADE FROM WASTE COOKING PALM OIL FOR PETROLEUM REFINERY WASTEWATER

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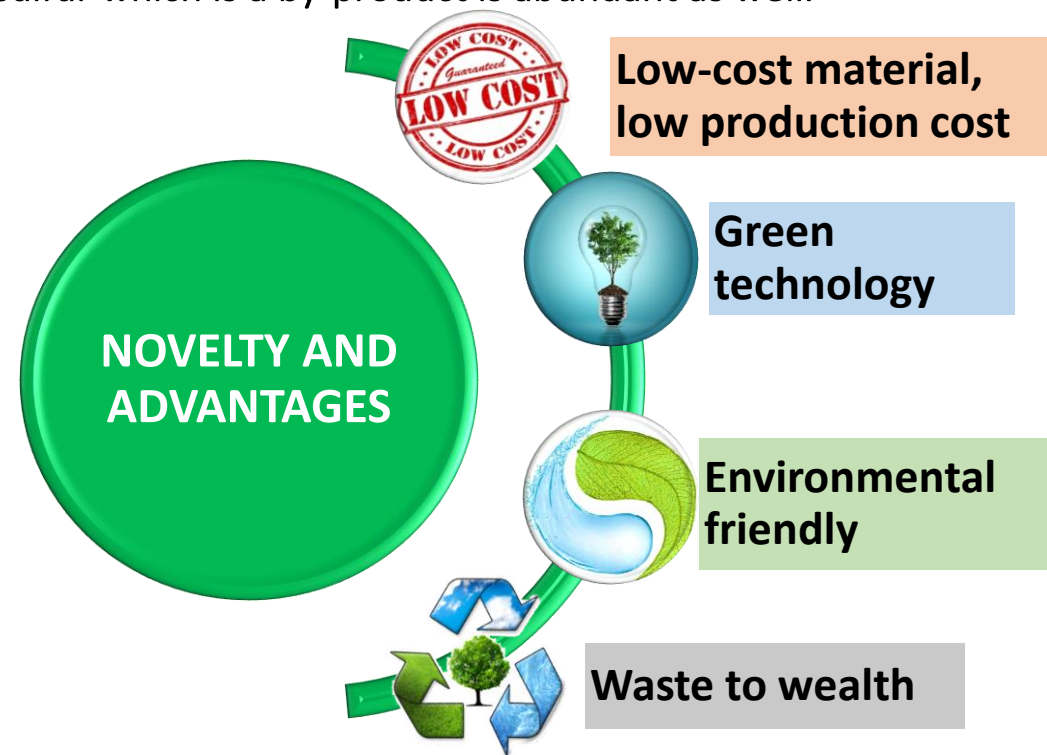
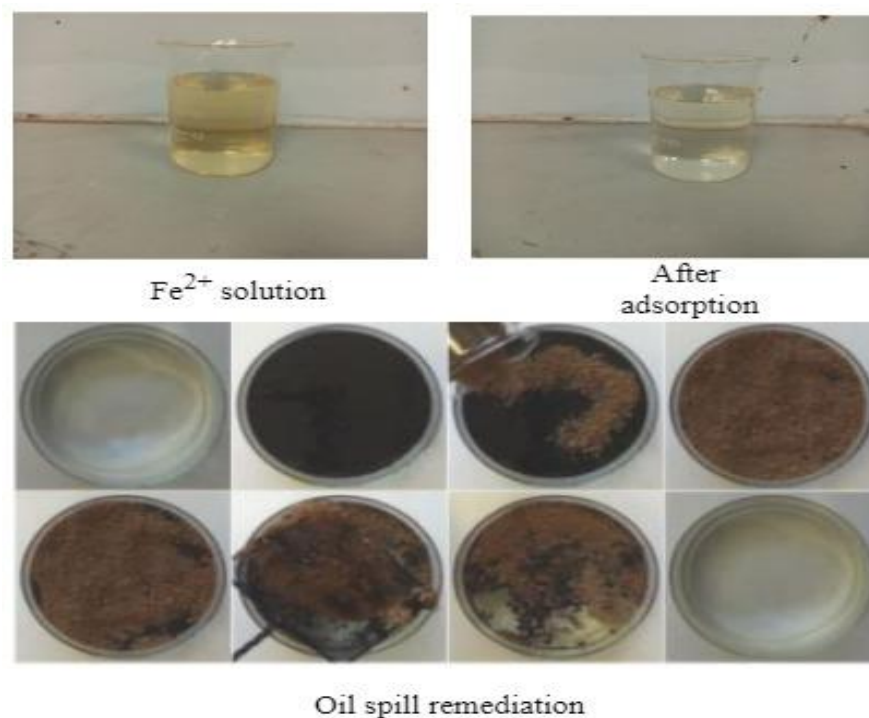


Industrially collaborated with DIRC Malaysia Sdn. Bhd., Kuantan, Pahang, Malaysia

BACKGROUND

- Refinery industries produces almost 1.6 times wastewater compared to the petroleum products. Heavy metals and oily compounds are considered as most dangerous pollutants.
- Adsorption is the easiest and most effective method to treat the refinery wastewater. Polysulfides are cost effective and easy to produce in industrial scale.
- Waste cooking palm oil is the crosslinking monomer of polysulfide. It is abundant and itself hazardous. Elemental sulfur which is a by-product is abundant as well.

WASTEWATER TREATMENT



ECONOMICAL POTENTIAL

Adsorbent	Price (RM/10g)
Activated Carbon	18.72
Zeolite	26.8
Polysulfide	2.04

TARGET CONSUMERS

- Petroleum refinery industries
- Fertilizer Companies
- Wastewater treatment plants
- Li-S battery producer

PUBLICATION

Characterization of waste cooking palm oil for inverse vulcanized polysulfides

A Nayeem, JH Shariffuddin, MF Ali

Materials Today: Proceedings (Scopus, under review)

PROCESS



Sorbent synthesis process