

COMPOSITE FILTER MEMBRANE FOR OIL-WATER SEPARATION FOR WASTEWATER TREATMENT



INVENTION

This invention relates to a novel filtration membrane with nano porous carbon, as well as a method of fabricating it. The membrane can be used to filter hydrocarbons from contaminated water.

MARKET SIZE AND GROWTH

- The membranes market is expected to grow at a 9.0 percent CAGR from USD 5.4 billion in 2019 to USD 8.3 billion by 2024.
- The primary drivers of the membranes market are rising population, increased awareness of wastewater reuse, and fast industrialization.
- Across the world, many local governments are revising legislation in areas such as water treatment, drinking water supply, and wastewater disposal and usage of membranes are considered as an efficient way for oil-water separation.¹

APPLICATIONS

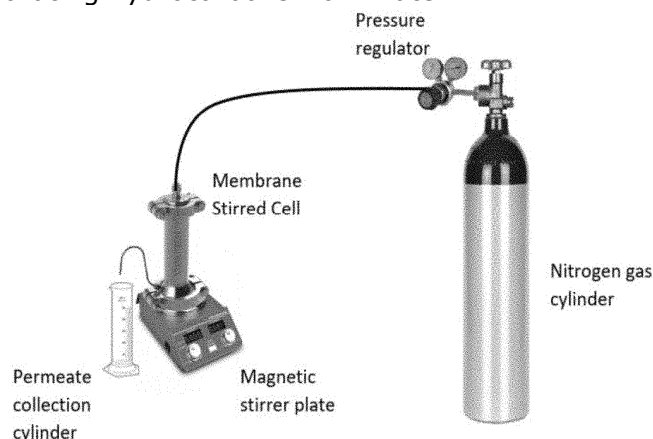
The invented polymer filtration membrane can be used to separate clean water from oil-water emulsions and to treat oily wastewater so that it can be discharged as clean water.

ADVANTAGES

- With up to 91 percent oil rejection, the composite membrane displayed good separation performance
- When compared to dense membranes, the newly designed porous multi-layered membrane allows high flux permeation and multi-stage separation operations over a single membrane

PROJECT STATUS

Filtration experiments were carried out on the membrane under various testing conditions, and the results reveal that it is capable of efficiently separating hydrocarbons from water.



LOOKING FOR DEVELOPMENT PARTNER

KFUPM is interested in collaborating to test the newly developed composite filter membrane for Oil-water separation with ultimate objective to license the intellectual property (IP).

PATENT PROTECTION

A US Patent application [16/662419](#) covers composition and method for the composite filtration membrane. The IP is owned by King Fahd University of Petroleum and Minerals (KFUPM).

ABOUT KFUPM

KFUPM was established in year 1963 and located in Dhahran city of Saudi Arabia. KFUPM currently ranks at 163 in QS World University Rankings 2021. KFUPM's Innovation & Technology Transfer office strives for taking innovation from lab to marketplace.

For further information, please contact
IP-License@kfupm.edu.sa

¹ Membranes Market by Material (Polymeric, Ceramic), Technology (RO, UF, MF, NF), Application (Water & Wastewater Treatment, Industrial Processing), Region (North America, APAC, Europe, MEA, South America) - Global Forecast to 2024