



Membranes for Oily Wastewater Treatment

Every year, the petroleum industry produces a large amount of oily wastewater. To reduce the environmental impact of such emissions, stringent regulations on permissible oil and grease (O&G) discharge limits have been put in place. However, fouling – *the build-up of unwanted materials on solid surfaces* – remains a problem even when the wastewater has undergone membrane treatment. Recognising these challenges, EWTCOI researchers have developed a novel super hydrophilic polymeric membrane with a special surface chemistry that rejects hydrocarbons and other fouling materials. These membranes have been tested at the laboratory and researchers are now working with industry partners to scale them up for pilot tests.

EWTCOI will journey with you to develop sustainable technologies today for tomorrow.

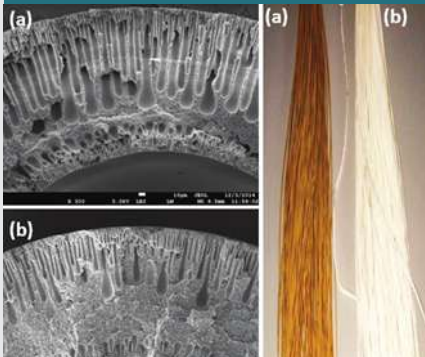
Key Features & Benefits

- Higher permeability (up to 60%) over conventional ultrafiltration membranes
- High selectivity for oil emulsion of more than 99%
- High fouling resistance
- Operating cost reduction by up to 30%

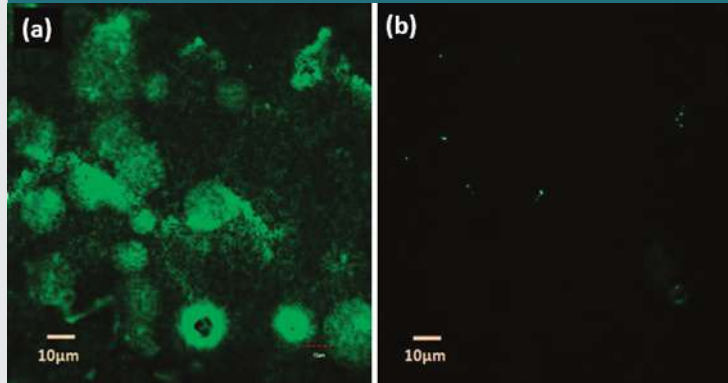
Applications

- Oily wastewater
- Surface water
- NEWater
- Seawater pre-treatment

SEM images of the conventional membrane (a) and super hydrophilic membrane (b)



CLSM images of conventional membrane (a) and super hydrophilic membrane (b)



Bench scale oil water treatment system

