

# LOW COST MATERIAL FOR REMOVING ORGANIC POLLUTANTS FROM WATER



## INVENTION

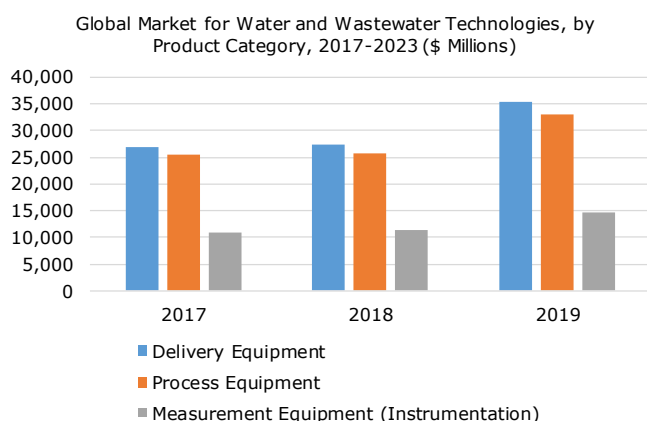
A low-cost hydrophobic and oleophilic material was developed from Styrofoam waste, which can efficiently separate oil from water. The styrofoam was first collapsed using acetone and then impregnated with carbon nano fiber. Styrofoam is usually used as a packing material, and after its use, it is generally wasted without any recycling process. Through this invention, the waste styrofoam can be used to develop a useful material for oil and water separation, thereby reducing environmental waste.

## MARKET SIZE AND GROWTH

According to a report on "Water and Wastewater Treatment Technologies: Global Markets" by BCC Research (2018), the global water and wastewater treatment technologies market is anticipated to grow from \$64.4 billion in 2018 to \$83.0 billion by 2023 with a CAGR of 5.2% during the forecast period.

The market is segmented into three categories, Delivery Equipment (pipes, fittings, valves controls, etc.), Process Equipment (regular and advanced wastewater treatment equipment) Instrumentation (Activated Sludge, Anaerobic Digestion, Nutrient Removal, etc.).

The market size and growth forecast of these three segments is shown in the following figure.



## APPLICATION

Treatment of Industrial wastewater.

## ADVANTAGES

- Prepared with very low cost material Styrofoam.
- Reduces environmental waste
- Good removal efficiency for oil from water.

## PROJECT STATUS

The material was tested in lab at KFUPM and results indicated that it was successfully able to remove oil from an oil-water solution.

## LOOKING FOR DEVELOPMENT PARTNER

KFUPM is interested in seeking market feedback from industry, licensing the technology to a company to commercialize it and/or partner with a company for further development of this technology.

## PATENT PROTECTION

The invention is protected through US patent application 16/211775 that was filed on Dec 06, 2018, and covers composition of material and the method of using the material for oil water separation. The IP is owned by King Fahd University of Petroleum & Minerals (KFUPM).

## ABOUT KFUPM

KFUPM was established in year 1963 and is located in Dhahran city of Saudi Arabia. KFUPM currently ranks at 186 in QS World University Rankings 2021. KFUPM's Innovation & Technology Transfer office strives for taking innovation from lab to market place.

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