

## Adsorption of crude oil from oily wastewater using porous poly (vinyl alcohol) hydrogel

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### Abstract

Crude oil is adsorbed from wastewater on the crosslinked poly (vinyl alcohol) hydrogel (HPVA) and its foam (HPVAF). The macroporous HPVAF was prepared by adding CaCO<sub>3</sub> and epichlorohydrin as pore-forming agent and crosslinker, respectively. The prepared hydrogels were characterization and their ability to adsorb and immobilize of the crude oil was assessed by gravimetric method at the optimum condition. The HPVAF carrier demonstrated the improvement in the hydrocarbons trapping than these of the HPVA one. Scanning electron microscopy showed the presence of extracellular structures that could play an important role in the immobilization stability of crude oils on polymers. As well, the percentage removal ability of the crude oil by HPVAF was approximately, 82%. The results suggest that the potential of using each of HPVA and HPVAF films as trapping for crud oil to enhancing the treatment of oily wastewater with a low cost in an open marine environment.

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### Biography

Y. M. M. Moustafa has completed his PhD in Organic Chemistry, Ain Shams University, Egypt and postdoctoral studies at Department of Analysis & Evaluation, Egyptian Petroleum Research Institute. He has published more than 65 papers in reputed journals and has been serving as Organizing Scientific Committee, Conference General Secretary, Chairperson for Plenary

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