

## The Effect of Arabic Gum on Polyethersulfone Membranes

**Authors :** Yehia Manawi, Viktor Kochkodan, Muataz Hussien

**Abstract :** In this paper, the effect of adding Arabic Gum (AG) to the dope solutions of polyethersulfone (PES) was studied. The aim of adding AG is to enhance the properties of ultrafiltration membranes such as hydrophilicity, porosity and selectivity. several AG loading (0.1-3.0 wt.%) in PES/ N-Methyl-2-pyrrolidone (NMP) casting solutions were prepared to fabricate PES membranes using phase inversion technique. The surface morphology, hydrophilicity and selectivity of the cast PES/AG membranes were analyzed using scanning electron microscopy and contact angle measurements. The selectivity of the fabricated membranes was also tested by filtration of oil solutions (1 ppm) and found to show quite high removal efficiency. The effect of adding AG to PES membranes was found to increase the permeate flux and porosity as well as reducing surface roughness and the contact angle of the membranes.

**Keywords :** antifouling, Arabic gum, polyethersulfone membrane, ultrafiltration

**Conference Title :** ICWPEIC 2017 : International Conference on Water Pollution, Environmental Impacts and Control

**Conference Location :** London, United Kingdom

**Conference Dates :** August 21-22, 2017