

Treatment of Industrial Effluents by Using Polyethersulfone/Chitosan Membrane Derived from Fishery Waste

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Abstract : Industrial effluents treatment is a major problem in the world. All wastewater treatment methods have some problems in the environment. Due to this reason, today many natural biopolymers are being used in the waste water treatment because those are safe for our environment. In this study, synthesis and characterization of polyethersulfone/chitosan membranes (Thin film composite membrane) are carried out. Fish scales are used as raw materials. Different characterization techniques such as Fourier transform infrared spectroscopy (FTIR), X-ray powder diffraction (XRD), scanning electron microscope (SEM) and Thermal gravimetric analysis (TGA) are analysed for the synthesized membrane. The performance of membranes such as flux, rejection, and pore size are also checked. The synthesized membrane is used for the treatment of steel industry waste water where Biochemical oxygen demand (BOD), Chemical Oxygen Demand (COD), pH, colour, Total dissolved solids (TDS), Total suspended solids (TSS), Electrical conductivity (EC) and Turbidity aspects are analysed.

Keywords : fish scale, membrane synthesis, treatment of industrial effluents, chitosan

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