Materials Today: Proceedings

Evaluation of chitosan/sisal fiber/polyethylene membranes

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Abstract

Composites of ternary blend of chitosan/sisal fiber/high density polyethylene, were prepared by using the Rheomixer, followed by hot press, in order to form dense microfiltration membranes. The effective operation of the membranes was tested via the utilization of distilled water. The structural arrangement of the membranes was examined with the aid of using scanning electron microscopy (SEM). The chemical structure and phase identification of the membranes were examined using attenuation total reflection-infrared spectroscopy (ATR-IR) and X-ray diffraction (XRD), respectively. The water permeability of the composite membranes is dependent on how rough the surface is, the sizes of pores and the membrane porosity. The membranes with highest amount of sisal fiber, gave highest flux of 1.4 m3/m2/h.