

HOLLOW FIBER SUPPORTED LIQUID MEMBRANE FOR ACETIC ACID EXTRACTION FROM OIL PALM FROND HYDROLYSATE

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Abstract:

Nowadays, hollow fiber are widely used in gas separation, ultrafiltration, pervaporation and dialysis. Compare to the flat sheet, hollow fiber offers unique advantages such as ease for handling, high membrane surface area and self-supporting structure. It is also suitable to be assembled as a large modules for industrial application. Therefore, the feasibility of hollow fiber configuration to be applied as the membrane support in supported liquid membrane (SLM) for the removal of acetic acid (AA) from oil palm frond biomass hydrolysate was studied and discussed in the current study. Two parameters that affect the mass transfer during SLM process, which are impregnation time of liquid membrane and flow operation modes of feed and strip phase were tested. Hollow fiber membrane was fabricated using dope formulation of membrane 15 wt.% polyethersulfone (PES), 42.5% dimethylacetamide, 42.5% polyethylene glycol 200, with addition of 0.1 wt% graphene..

Keywords: Hollow Fiber; Supported Liquid Membrane; Acetic Acid; Biomass Hydrolysate

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