

## Preparation and characterization of a polysulfone ultrafiltration membrane for bovine serum albumin separation: Effect of polymer concentration

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### ABSTRACT

This study aimed to investigate the effect of polymer concentration on the morphology and performance of an asymmetric ultrafiltration (UF) membrane for bovine serum albumin (BSA) separation. Flat sheet asymmetric UF membranes were fabricated via dry/wet phase inversion technique. These fabricated membranes were characterized in terms of membrane morphology, membrane pore radius and membrane surface charge. The membrane performance was determined based on pure water flux, sodium chloride rejection and BSA permeation test. Promising results were obtained when BSA rejection ranged from 94.3% to 100%. The optimum membrane in this study was determined by PSF 17% (containing 17 wt% polymer concentration) which successfully exhibited 100% rejection with filtrate flux for about 23.86 L/m<sup>2</sup>.h at a pressure of 2 bar. This research also proved that polymer concentration would greatly affect the membrane performance and structural properties, consecutively enhancing the membranes ability for BSA separation.

*Keywords:* Membrane; Ultrafiltration; Polymer concentration; BSA separation

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