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## INFLUENCE OF LITHIUM FLUORIDE ADDITIVE ON POLYETHERSULFONE MEMBRANES

Ani Idris\*, Iqbal Ahmed, Ansari Akhlaque Ah. Nihal Ah., Nur Diana Mohd Noor.  
*Bioprocess Engineering Department, Faculty of Chemical and Natural Resources Engineering,  
Universiti Teknologi Malaysia, 81310 UTM, Skudai, Johor, Malaysia,  
Tel: +607-5535603 Fax: 607-5581463 Email: ani@fkkksa.utm.my*

### ABSTRACT

The objective of this research is to investigate the influence of the additive lithium fluoride anhydrous (LiF) concentration on the performance of polyethersulfone (PES) membrane. Various concentration of LiF has been mixed with PES in the range of 1-5%. This distinctive series of dope formulations of PES and LiF was prepared using N, N-dimethylformamide (DMF) as solvent. Viscosities of the dope solutions were measured and the performances of the PES membranes were evaluated in terms of polyethylene glycol (PEG) separation and its molecular weight cut off (MWCO) is determined. The results indicated that the additive LiF showed significant effect in reducing the viscosity of dope solution by 2.5 – 5 times. Its presence has improved both the permeation and solute rejection rate with best concentration kept to less than 3% by weight. Dope solutions containing 1%-3% were discovered to have highest rejection rate with MWCO at approximately 8.1 kDa, 7.1 kDa and 8.45 kDa respectively with reasonably flux rates.

**Keywords:** Asymmetric membranes, polyethersulfone, lithium fluoride anhydrous

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Chemical Engineering Department, Gadjah Mada University