Characterization of antioxidant incorporated polymeric blend membrane through *in situ* incorporation along with surface modification

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**ABSTRACT**

The 2,2'-methylenebis(6-tert-butyl-4-ethylphenol) (MBEP) is incorporated through *in situ* into a polymeric blend membranes of polysulfone (PSU) and waste polyethylene terephthalate (PET). These membranes are surface treated with 2,2'-ethylidenebis(4,6-di-tert-butylphenol) (EBBP). This study is carried out to evaluate the improvement in anti-fouling properties of membrane surface. Study on stability is carried out along with different molecular weight cut-off (MWCO) polymer blends. The surface wettability of blend polymeric membranes with antioxidants was significantly improved. Further, flux studies and fouling experiments were carried out with effluent from textile industry. The stability of modified membranes was evaluated by immersion tests. The effluent was used as a model foulant to investigate the anti-biofouling performance of modified membranes. The results of stability tests showed that modified membranes had better mechanical and chemical stability.

**Keywords:** Waste polyethylene terephthalate; 2,2'-ethylidenebis(4,6-di-tert-butylphenol); 2,2'-methylenebis(6-tert-butyl-4-ethylphenol)

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