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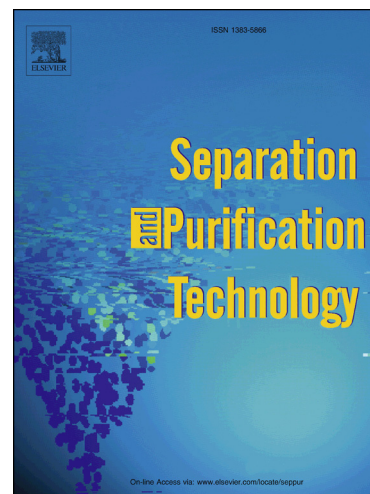
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Fabrication of modified polyethersulfone membranes for wastewater treatment by submerged membrane bioreactor

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Abstract

Polyethersulfone (PES) flat sheet membranes were fabricated using different additives, i.e. polyvinylpyrrolidone (PVP), linear Pluronic 31R1, and star-like Tetronic 904, with different contents, by nonsolvent-induced phase separation method at similar preparation conditions. Their effects on characteristics and performance of the flat sheet PES membranes were investigated in order to select the best membrane to be applied in submerged membrane bioreactor (SMBR). The characteristics of the fabricated membranes were investigated by using attenuated total reflectance-Fourier transform infrared (ATR-FTIR) spectroscopy, scanning electron microscopy (SEM), atomic force microscopy (AFM), mechanical stability measurements, contact angle (CA) measurement, shrinkage measurement, and membrane porosity analysis. The membranes performance was examined by investigation of pure water permeability (PWP) and bovine serum albumin (BSA) rejection analyses. The characteristics and the performance of the neat PES membrane have been improved by the action of these

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