

Recovery of Lithium from Seawater Using Electrospun Polysulfone/Manganese Oxide Nanofibrous Membrane Adsorbents

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Electrospun polysulfone/manganese oxide nanofibrous membranes were employed to recover Li⁺ ions from seawater. Breakthrough experiments were conducted at varying feed concentration, flow rate, and membrane thickness to assess adsorption performance. Higher feed concentrations and flow rates increased adsorption rates which resulted in steep breakthrough curves, hence shorter saturation times. However, higher membrane thickness reduced the adsorption rate which resulted in longer saturation periods. The membrane demonstrated minimum loss in adsorption capacity after several uses. This work was supported by the National Research Foundation of Korea (NRF) grant funded by the Ministry of Science, ICT & Future Planning (No. 2012R1A2A1A01009683) and the Ministry of Education (No. 2009-0093816).