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Efficient Extraction and Recovery of Lignosulfonate using Sunflower oil as green solvent in liquid membrane transport: Equilibrium and kinetic study

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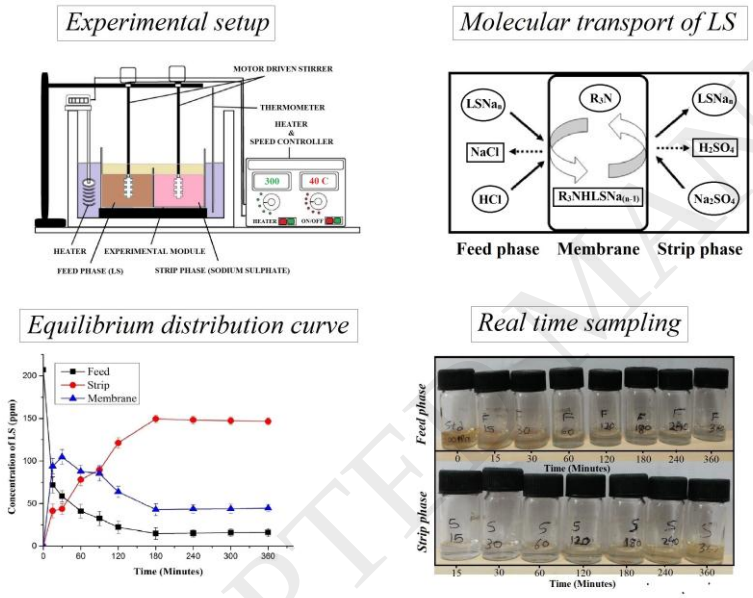
Graphical abstract



Abstract

This work highlights extraction and removal of Lignosulfonate using Sunflower oil-Tri-n-octylamine (TOA) system in bulk liquid membrane transport. Maximum extraction and recovery percentages of 92.4% and 75.2% were achieved. Optimum manifold operating conditions were: 4 vol. % TOA, 2±0.1 feed phase pH, 300 rpm stirring speed, at 40 °C with 0.2 (M) Na_2SO_4 solution. 1:2 (organic/aqueous) and 1:1 (aqueous/aqueous) phase ratios produced best results. Extraction (36.85 kJ/mol) was found to be intermediate controlled and