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Mass transfer resistance of simultaneous extraction and stripping of Hg (II) from petroleum produced water via HFSLM

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The simultaneous extraction and stripping of mercury (II) from petroleum produced water via hollow fiber supported liquid membrane (HFSLM) was examined. Optimum conditions for extraction and stripping were pH 1 in feed solution, 5% (v/v) Aliquat 336 in the liquid membrane and 0.05 M thiourea in the stripping solution. In this experiment, optimum percentages of mercury (II) extraction and stripping were obtained at flow rates for both feed and stripping solutions of 100 mL/min using a single–module operation for a period of 40 min. Percentages obtained for extraction and stripping of mercury (II) were 96.8% and 92.5% which were below the legislation limit of 5 ppb. The overall mass transfer resistance (R) was 7.286 x 10^2 s/cm. Results showed that the mass transfer model fitted in well with the experimental data.

Biography

Thanaporn Wannachod has completed her PhD from Department of Chemical Engineering, Faculty of Engineering, Chulalongkorn University. She has published more than 6 papers in reputed journals.

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