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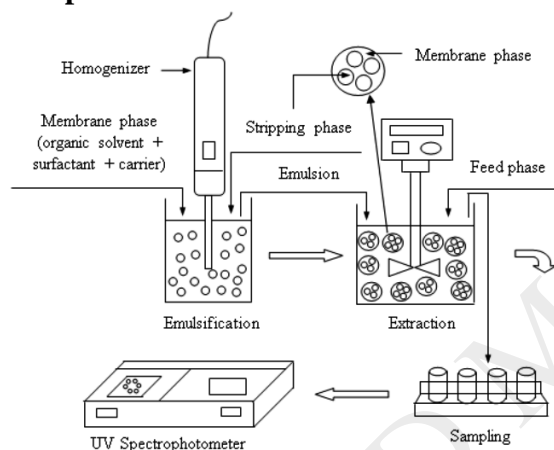
Extraction of Ethylparaben by emulsion liquid membrane: Statistical analysis of operating parameters

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Graphical Abstract



Abstract

Ethylparaben, alkyl esters of p-hydroxybenzoic acid, is an endocrine disruptor that interfere glandular activity and hormone production and even with considerable elimination of them using conventional treatment methods, it is still recognized in river water samples at high concentrations. In this study, Emulsion Liquid Membrane (ELM) consisted of trioctylamine (TOA) as carrier, n-heptane as diluent, Span 80 as surfactant and Na_2CO_3 as the stripping solution was used for the removal of ethylparaben (EP) from aqueous solution. Studies were conducted to analyse the effect of various operating parameters. Effect of factors like carrier concentration (C), stripping phase concentration (N), speed of homogenizer (H), surfactant concentration (S) on the extraction of EP were evaluated with Taguchi's method. Statistical analysis of variance (ANOVA) was applied to analyze the effect of each parameter and stripping phase

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