

عنوان مقاله:

Selective Extraction of Molybdenum from the spent HDS catalysts using Cyanex 272 extractant

محل انتشار:

مجله طراحی فرآیندهای شیمیایی، دوره 1، شماره 1 (سال: 1401)

تعداد صفحات اصل مقاله: 10

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خلاصه مقاله:

Selective extraction of Mo from the spent HDS (Hydrodesulfurization) catalysts was studied using Cyanex 272 extractant. The required experiments were designed by RSM (Response Surface Methodology) method according to CCD (Central Composition Design), and four independent parameters were examined, including Cyanex 272 concentration, H $^+$ concentration of leach solution, temperature, and Mo concentration in the leach solution. A quadratic equation was derived for the prediction of Mo recovery with R^2 equal to 0.98, which verified this equation for fitting the experimental results. The value of Mo recovery in different conditions showed that the effect of the leach solution acidity is insignificant at a low concentration of Cyanex 272 . The optimum value for Cyanex 272 concentration, H $^+$ concentration of leach solution, temperature, and Mo concentration was obtained at 0.27 M, 3.4 M, 30 °C, and 279.74 mg/L, respectively. The Mo recovery was 99.05% in these conditions, which had a 0.74 error from the software predicted value.

کلمات کلیدی:

Molybdenum, HDS catalysts, Solvent extraction, Response Surface Methodology

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