

عنوان مقاله:

An applied comparison between conventional pre-dispersed solvent extraction (PDSE) contactors and new dissolved nitrogen PDSE (DNPDSSE) ones

محل انتشار:

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خلاصه مقاله:

Efforts to increase the mass transfer coefficient, enhance the contact area, and decrease the power input of contactors have given risen to the development of the pre-dispersed solvent extraction (PDSE) contactor and the devise of the new dissolved nitrogen PDSE (DNPDSSE) contactors. The studies conducted after the design of the new contactor to determine the working conditions for its suitable performance (2.5-3.5 bar pressure, 0.1 L/min sparger flow rate, and 1.5 L of the aqueous phase) showed that for all the evaluated conditions (i.e. the pressure, polyaphron type, and dilution percentage), the recovery in the DNPDSSE contactor was higher than that in the PDSE one. In addition, pictures of the performance modes of the two contactor indicated the presence of the organic phase in the form of colloidal gas aphrons (CGAs) in the DNPDSSE contactor and of polyaphron aggregations in the PDSE one. This is a good reason for the increased copper recovery in the DNPDSSE contactor. The best recovery for the extraction process in the DNPDSSE contactor was achieved using the anionic polyaphron of sodium dodecylbenzene .sulphonate (NaDBS) with five-fold dilution at 3.5 bar

کلمات کلیدی:

Dissolved Nitrogen Pre-Dispersed Solvent Extraction (DNPDSSE) Contractor, Pre-Dispersed Solvent Extraction (PDSE) Contractor, Colloidal Aphrons (CAs), Metal Extraction, Performance Study

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