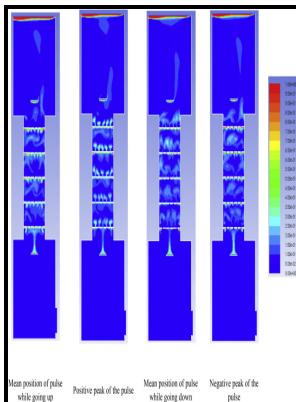


Theoretical and experimental study of dispersed phase axial mixing in a sieve plate, pulsed solvent extractioncolumn.

- - EFFECT OF AXIAL MIXING ON MASS TRANSFER IN EXTRACTION COLUMNS



Filesize: 56.82 MB

Tags: #Axial #dispersion #in #plate

Mass transfer efficiency of a tall and low plate free area liquid pulsed sieve

In the first round of simulations standard Kumar-Hartland drag model is used to model the interphase momentum exchange. Distilled water was used as the continuous phase and technical grades of toluene and n-butyl acetate of at least 99. Acetic acid—kerosene—water system is chosen and the effect of operating parameters on the mass transfer performance of the column is studied.

Mass Transfer Studies in Pulsed Sieve Plate Extraction Column for the Removal of Tributyl Phosphate from Aqueous Nitric Acid

Khemongkorn V, Molinier J, Angelino H 1978 Influence of mass transfer direction on efficiency of a pulse perforated plate column. These models usually have been based on either a stagnant Gröber, 1925 , circulating Kronig and Brink, 1950 , or oscillating Handlos and Baron, 1957 drop falling or rising in the continuous phase with mass transfer occurring into or out of drops.

Two

Table gives the additional information about the chemicals used in the present study.

Mass transfer studies in a horizontal pulsed sieve

Solvent Extraction and Ion Exchange 2021, 39 3 , 328-352. In contrast, the backflow model is basically a stage-wise model, in which total mixing is assumed within each stage, and the deviation from plug flow is presented by a backmixing coefficient, α , between adjacent stages. Then, the kerosene phase dispersed phase pump was started and the dispersed phase was allowed to flow from the bottom to the top of the column in countercurrent mode to the flow of the aqueous phase.

EFFECT OF AXIAL MIXING ON MASS TRANSFER IN EXTRACTION COLUMNS

The effect of pulsation intensity on the volumetric overall mass transfer coefficient of the toluene-acetone-water system high interfacial tension is larger than that of butyl acetate-acetone-water medium interfacial tension , because breakup of the dispersed phase drops into smaller ones is limited for the latter system due to its lower interfacial tension.

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It is observed that increasing pulsation intensity continuously decreases the height of transfer unit and consequently increases the mass transfer coefficient for constant values of superficial velocities of the continuous and dispersed phases. Internal mechanical parts are eliminated, leakage is minimized, and the pulsator can be isolated Hussain et al.

Two

Energy Procedia 2013, 39 , 348-357. At higher pulsation intensity, the volumetric coefficients of the former system are higher than those of the latter system, because the interfacial area increases with increasing pulsation intensity. Citations are the number of other articles citing this article, calculated by Crossref and updated daily.

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