

عنوان مقاله:

Analytical Solution of Plug flow and Axial Dispersion Models in a Packed Liquid-Liquid Extraction Column

محل انتشار:

ششمین کنگره بین المللی مهندسی شیمی (سال: 1388)

تعداد صفحات اصل مقاله: 7

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خلاصه مقاله:

Modeling of a counter-current packed liquid-liquid extractor with random packing has been done using plug flow (PF) model and axial dispersion (AD) model. Several experiments were done using toluene/ acetic acid/ water system with acetic acid mass transfer from aqueous to organic phase. New analytical solutions are proposed for two models respectively and the simulation results are compared with experimental data. The average deviation 12.47 and 7.45 percent between the experimental data and the simulation results of the disperse and continuous phases composition in steady state condition were obtained for the models, respectively. The simulation results greatly improve when the effect of dispersion in continuous phase is included in the AD model, so the results show that the effect of dispersion in continuous phase can not be neglected in the mathematical modeling of these columns

کلمات کلیدی:

Differential model, Analytical solution, Plug flow model, Axial dispersion model, Packed column

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