

分离工程

萃取精馏溶剂的选择(II)模糊综合评判方法

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摘要

选择萃取精馏的溶剂要考虑多方面不同的因素,而且对这些因素的评价常常具有模糊的特点。本文提出一个模糊综合评判模型用于萃取精馏溶剂的选择。首先确定影响萃取精馏溶剂性质的各个因素对于各评判等级的隶属度,并得到模糊矩阵R;然后确定各目标变量的权重分配集A;最后给出全面考虑各方面因素的综合评判结果,对候选的萃取精馏溶剂进行优劣排序。通过对两个萃取精馏系统进行溶剂选择的实例证明,采用模糊综合评判方法进行溶剂筛选的方法是成功的,具有良好的工业应用前景。

关键词

[萃取精馏溶剂](#) [模糊综合评判模型](#) [隶属函数](#) [权重分配集](#)

分类号

Selection of solvents for extractive distillation (II) Comprehensive fuzzy evaluation model

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Abstract

In selecting the optimum solvents of extractive distillation, multiple factors should be considered and the evaluation of these factors are often of fuzzy characteristics. In this paper a comprehensive fuzzy evaluation (CFE) model was used for choosing the solvents. At first the membership functions of factors influencing the solvent performance versus the judgment grades were determined and the fuzzy evaluation matrix, R, was given. Then the weight-distributed sets, A, were determined by multi-experts-scoring. At last, the comprehensive evaluation results were obtained based on all factors considered, and the candidate solvents were queued in the order of superiority. The CFE method was used to select the solvents of two extractive distillation processes for separating benzene/n-heptane and ethyl acetate/ethanol mixtures respectively, and the method proved to be successful with perspective industrial applications.

Key words

[extractive distillation solvent](#) [comprehensive fuzzy evaluation model](#) [membership function](#) [weight-distributed set](#)

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