Abstract

This article addresses a fuzzy logic approach to calculate the optimum minimum allowable composition difference ($\varepsilon$) to target the minimum total annualized cost (TAC) of a mass exchange network (MEN), which is based on combining composition interval diagram (CID) with fuzzy set theory. The value of $\varepsilon$ directly affect the TAC as a main constrain. By utilizing this decision algorithm it gives the opportunity to calculate the optimum composition difference by decision making from a wide range of assumed $\varepsilon$. This method is very simple and more convenient than the methods previously published; as the decision is taken without calculating TAC for every assumed $\varepsilon$.

References

design Tools.
AIChE Journal , 1233-1244.
the singularity of the Kremser equation. Comp. & Chem. Eng. , 2331-2335.
approach to the optimization of in-plant wastewater interception with mass and property
- Hallale, N., & Fraser, D. (2000). Capital and total cost targets for mass exchange
networks. Part 1: Simple capital cost models. Computers and Chemical Engineering , 1661 -
1679.

Index Terms

Computer Science
Fuzzy Systems

Keywords

Mass exchange network Fuzzy Approach Mass Integration Process synthesis
Process Optimization

Multi-objective decision making