Abstract

This article addresses a fuzzy logic approach to calculate the optimum minimum allowable composition difference (\(\delta\)) 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 \(\delta\) 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 \(\delta\). This method is very simple and more convenient than the methods previously published; as the decision is taken without calculating TAC for every assumed \(\delta\).

**Index Terms**

Computer Science  
Fuzzy Systems  

**Keywords**

Mass exchange network  
Fuzzy Approach  
Mass Integration  
Process synthesis  
Process Optimization  

Multi-objective decision making