CONCLUSION

A fuzzy analogical gate approach has been proposed for synthesizing multicomponent separation sequences. This approach consists of two parts, first part for the selection of the best sequence of separation network (without heat integration) and second part synthesis of separation network (with heat integration). The synthesis algorithm is based on application of three expert rules qualification of the estimated mass load, difference in boiling point and relative volatility. three examples are solved (four components, five components and six components) to show the power of the proposed method. It is evident that the performance of the Fuzzy analogical gates is quite encouraging, characterized by its simplicity and can be implemented by hand calculations. a fuzzy analogical gate technique has been presented as a first step in selecting the optimum sequence for sharp separation and using three heuristic rules for detecting the possible matches within condenser and re-boiler to minimize the total cost by heat integration matrix, that shows all potential matches that could occur in the system and select the best sequence.

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