FUZZY MODELING IN PROCESS SYNTHESIS FROM MULTI-PERIOD HEAT INTEGRATED DISTILLATION SEQUENCES

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The study of this problem was carried out in 1992 using stochastic programming and a two stage model with mixed integer non-linear programming. Here we are the first one to transform this into a fuzzy modeling problem and obtain a better estimate of the multiperiod-heat-integrated distillation sequences. Processing of different feedstocks, various capacity levels and parameter variation in a chemical plant require that the chemical plant can handle a discrete number of operating conditions. Since different operating conditions in a chemical plant will often result in different flowrates and for compositions for the multi component feed to a sequence of distillation columns, an important design issue that arises is the one of synthesizing minimum venture cost heat-integrated distillation sequences that remain feasible for periodic operations at various conduction states. This is achieved by this fuzzy model to a satisfactory level.