CHAPTER VII
CONCLUSIONS AND RECOMMENDATIONS

A modified stage-wise superstructure for solving heat exchanger network is presented. The novelty of our improved stage-wise superstructure includes the non-isothermal mixing and multiple matches per branch stream. We apply a novel initialization strategy and our sub-stream temperature bounding. We introduce our sequential techniques to help tuning all variables to obtain feasible initial values since good and feasible initial points are crucial in solving the complex MINLP problems using DICOPT. We illustrate our model in five examples and our HENs configurations are better than other existing modified stage-wise superstructure models with lower TAC.

Although our model can obtain better solution than other existing literature, there are some difficulties in giving initial value of branch flow. Then, our model requires good feasible initial values and some adjustment of the initial values between each iteration. These technical procedures have caused this model not user-friendly. Moreover, comparing with other literature, many case of our solution requires a lot of effort to reach the best solution. Therefore, modifying model to be more user-friendly and less computational time are to be investigated.