# CHAPTER V
# CONCLUSIONS AND RECCOMMENDATIONS

## 5.1 Conclusions

The rigorous targeting design procedure has been studied for the design of conventional crude distillation units. This procedure is a development over the existing procedures for several reasons. First, this procedure intends to find the best design for a multipurpose crude distillation unit that processes a multiplicity of crudes, from heavy to light. Second, the procedure is simple. Heat demand-supply diagrams are used as a guide directing for optimal designs. An advantage of heat demand-supply diagrams is that the role of each stream, heater, or cooler in the total energy consumption is noticeably revealed; therefore the look for the best design is simple. Third, the approach is rigorous. The trade-off between different operating parameters is considered, and the decision is based on quantitative calculations in place of simple assumptions. In the multipurpose/multiperiod heat exchanger network model takes advantage of the flexibility identified and able to process the different type of crudes and the retrofit heat exchanger network model, one can aim at different conditions of improved energy efficiency. Each of the new condition takes a different capital expenditure. This different from base case design because the capital expenditure correspond to changes in the system. To accomplish this goal, the commercial simulator, like PRO II with PROVISION, was used to be implemented for design this multipurpose plant.

## 5.2 Recommendations

In general, although the rigorous targeting design procedure is a very effective procedure to find the best design for a multipurpose crude distillation unit in the variety of crude processes, the optimal condenser and pump-around duties were determined for three types of crudes in case of fixed the return temperature of pump-around circuits. At this point, several ways to achieve the best design can be planned as,

1. Varying the return temperature of pump-around circuits to study the effect on the energy consumption.

2. Studying the effect of HRAT on the energy consumption.