

CHAPTER VI

CONCLUSIONS AND FUTURE PROSPECTIVE

6.1 Conclusions

In this thesis, new contributions to the area of the optimization have been introduced. These contributions include:

- a new efficient strategy for selecting a good initial population of genetic algorithm (GA). Moreover, this technique not limited for GA. It can be applied to other optimization techniques based on population, and
- new algorithms: LHS-GA, FSS-GA, and HSS-GA. These algorithms are able to enhance the performance of GA in terms of the ability of searching the global solution and speed of convergence to the global optimum.

In addition, the performance of our algorithms has been successful tested through several optimization problems. An applicability of our approaches has been illustrated in the case study: distillation sequence synthesis.

6.2 Future Prospective

This work presents that a good initial population plays an important role in searching the global optimum. In this work, sampling techniques are introduced to select a good initial population. In addition to sampling methods, other techniques have an opportunity to choose them. One probable approach is to generating the initial population having uniformity properties on objective surface (not on x domain).