CHAPTER V

CONCLUSION AND RECOMMENDATION

A parabolic dish concentrates the incoming solar radiation to a point. Parabolic dishes must be tracked about two axes (azimuth axe and altitude axe). High – concentration solar requires the sun to be tracked with great accuracy for maximum output voltage. In this research, GA is used to increase accuracy of solar tracking system by always fine-tuning the position based on woolf's theory. Conclude the experiment as follows:

1. Solar Tracking Machine (STMM) is created for each experiment. The azimuth axis equals 0.045 degrees and altitude axis equals 0.036 degrees in precision respectively.

2. The Analysis of Variance from the first experiment in chapter IV shows that there are no differences between treatments in the experiment as a whole at $\alpha = 0.05$, then we can conclude that the output from varies times during 10.00 - 16.00 o'clock, doesn't have any affect on voltage output of sensor which generated from solar cell. Outputs are directly variation with the temperature but light intensity has not affect on output voltage of sensor extremely. So, the experiment is taken during 10.00 - 16.00 o'clock.

3. Education and examination parameters of genetic algorithms from second experimentation in chapters IV compose population size, probability of crossover and probability of mutation discover only population size and 3 interaction factors at suppose the disturbs factor imply important statistics at 95% confidence levels. It means population size affect to seeking the position continual the sensor receive most energy. The middle level (30) of population size (Pop) gives the best performance, the high level (0.9) of probability crossover (Pc) gives the best performance and the low level (0.1) of probability mutation (Pm) also gives the best performance.

4. Comparing the output voltage between STMM using GA and STMM (NonGA) can explain that the performance of STMM using GA increase to 7.084% of STMM (NonGA).

In Practical, it is recommended to fix fine-tuning sporadically, by choosing point to set up to receive the maximum voltage output because the fluctuation of program calculation is changing upper bound and lower bound at all the time for optimize perpendicular point of sensor moreover decreasing the swing of mechanical as the result of random seeks a position of genetic algorithms.