CHAPTER 5 – CONCLUSIONS AND RECOMENDATIONS

5.1. Conclusions

- The smart locker system using Peltier module is able to cool down the chamber temperature.
- The insulation consisting of two layers of aluminium foil insulation foam and Styrofoam helped maintain the temperature of the chamber from rising.
- The cascade stacked Peltier module TEC1 – 12706 and Peltier module TEC1 – 12710 with 12V is a better setup, considering the efficiency of the setup.
- The heatsink affects the Peltier module cooling system because the system needs sufficient heat dissipation to work efficiently.

5.2. Recommendations

Here are some recommendations to improve the efficiency of the refrigerated locker:

- Differentiate the size of the heatsink for the hot side and cold side, because the bigger the heatsink for the hot side means that the hot side of the Peltier module is able to receive heat dissipation that is sufficient to work efficiently.
- Use many Peltier modules on each side of the chamber temperature to acquire greater cooling capacity so that it could cool down the chamber temperature even more. More Peltier module means that the heat that is absorbed inside the chamber temperature is bigger than using only one side of the chamber.
- Make sure that there are no gaps that have a risk of temperature leak inside the chamber. The temperature leak will increase the workload of the Peltier module, thus making it unable to achieve the temperature difference that is targeted.