SUMMARY

In making of this thesis I have covered topics related to furnaces, their analysis and heat treatment for aluminium alloys. The core points from which this topic originated was to conduct a survey for furnace Snol to have an understanding of its working parameters and possibilities of application. From that point the topic got wider, looking into the process of heat treatment of aluminium alloys and comparison of several furnaces.

Several problems were encountered which limited the possibilities for analysis, like positioning of thermocouples, nonconformity of real temperature to target temperature in two of the furnaces. Later on, because of broadening the scope of the study and the choices of reagents for etching as I have not prepared the theoretical background for microetching.

Nevertheless, the experiments that were conducted for temperature measurements were mostly good and the heat treatment of the test samples was done, even though there is no clarity on the precision of the heat treatment experiment due to inability to finish with microetching correctly.

From my observations and results I have some recommended adjustments for the further use of the furnace Snol:

- to preset a constant adjustment to the target temperature to +5°C, as the working temperature inside the furnace is usually lower than the displayed one, because the inner thermocouple is located in place which is not objectively correct;
- if better precision is needed than to use an external thermocouple to adjust to the correct value;
- albeit no conclusions from the last experiments, I can claim that the furnace Snol is suitable for heat treatment of aluminium alloys, especially compared to the LAC furnace.

As for future use of LAC furnace I would rethink its possible applications as its precision is not as good as the Snol furnace.

All in all, I consider the results of the experiments productive, even though the last experiment has failed at some point and did not fulfill its end goal.