**Conclusion**

In this project, the aim was to produce an AC/DC converter to drive a DC motor. For that purpose, we have revised course lectures and combined it with more research to propose more solution alternatives. Next we have listed advantages and disadvantages of each option and after considering trade-offs, we have come up with a decision that is buck converter with diode rectifier. Afterwards, various simulations made it possible to decide on proper components. All of them have been tested and the system has been tested as a whole. Hopefully, we have achieved successful implementation. Despite the fact that it sounds relatively easy to design a rectifier, it took a lot of time and effort of us to succeed in this project. There was a lot of workload that this project demanded. Hence, the time that we have spent in laboratory is remarkable. One of the problems we faced was overheating and actually, this happened during demonstration. Hopefully, we have solved this issue afterwards. Another problem is that we couldn’t quite make feedback work. The problem is that we just ran out of time. Although there could have been a little bit more improvement, we have done our best to achieve this operation and unfortunately, time and our efforts run out. Nevertheless, this was quite an achievement for us in the road to become a proper engineer.

Along with its laboratory and homework projects, this hardware project helped us gain a solid experience in AC/DC conversion to achieve learning outcomes of our EE463: Static Power Conversion-I course. Now we have a significant experience with converter design and we also gained knowledge of important factors, simulation usage and process of converter design and these will be important earnings of this course for us as we think about a career on Power Electronics area.