

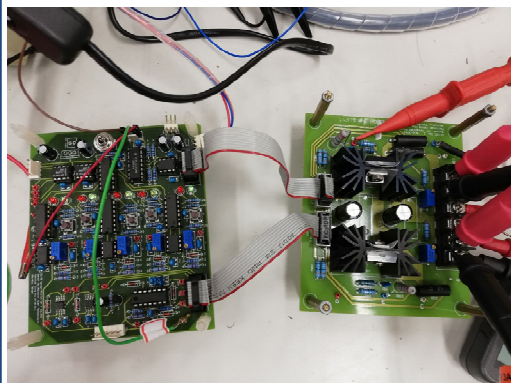
Research Topic	Analysis of A Convertor System for High Efficiency Operation	Graduate School of Engineering
Host University	National Tsing Hua University / Hsinchu / Taiwan	Electrical, Electronic and Mechanical Engineering
Duration	From July 29 to September 30, 2019	NAKATANI Shota

Summary of the Research Activities

I'm studying the drive control of Linear Induction Motors (LIMs) at graduate school. In order to drive a motor, a power converter is indispensable. So, I went to study in the laboratory of Prof. Po-tai Cheng of the National Tsing Hua University to conduct research on the latest power converter.

Prof. Cheng's lab recommends understanding not only the theory of power converters but also actual measurements. While studying abroad, I learned about theory and then experimented. Together with local students, we compared the theoretical and measured values of the output voltage of the DC-DC converter and discussed the differences. As a result, we thought that the parameters were insufficient due to the loss. So, we created a new circuit that takes into account of the losses. In the new circuit, the result was close to the theoretical value. In addition, I think that receiving feedback on research through the weekly meeting also led to a good result.

A DC-DC converter is a basic circuit when considering a power converter. Therefore, it can be applied to other power converters. I would like to use my knowledge of the power converters gained during this study abroad in future LIM control.



DC-DC converter



Lab members



Meeting

College Life, Friends and Others

I talked to people I met in Taiwan about their culture, politics and economy. People in the lab took me to various places by motorcycle. I was invited by my roommate to workout every day and did a diet.

I think these two months have been a valuable experience in my life.



At Formosa Boulevard Station in Kaohsiung

指導教員講評

今回の研究で培った技術は、我々のコアとなる技術です。海外の学生と共同で実施し、良い結果を得られたことは、非常に有益になったと思います。

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