NTU-KU Joint Funding

Final Report

Section 1

NTU principle investigator	
Name (last name, first name)	**Chen, Cheng-Liang**
Position	**Professor**
Faculty/Department	**Department of Chemical Engineering**

KU principle investigator	
Name (last name, first name)	**Alcantara Avila, Jesus Rafael**
Position	**Junior Associate Professor**
Faculty/Department	**Department of Chemical Engineering**
Visiting ECR*	
Name (last name, first name)	**Huang, Ming-Li**
Position	**Student**
Faculty/Department	**Department of Chemical Engineering**

*Please complete this section if the KU principal investigators hosted ECRs from NTU.

Host researcher*	
Name (last name, first name)	
Position	
Faculty/Department	

*Please complete this section if the host researcher is different from the KU principal investigator.

Section 2

Project title
Methanol as a Sustainable Fuel for NET Power Cycle

Section 3

Period of project	
From dd/mm/yy to dd/mm/yy	**01/11/2022 to 17/11/2022**

Section 4

Summary of the project (approx. 100 words)
*KU PIs are required to submit a summary of the project in Japanese in addition to the English summary (approx. 200–300 characters).

(Please enter the summary of the project)

In this project, NTU PSE laboratory and KU Multiphase Process Systems laboratory each sent a student to the other's lab for a short-term stay of two to three weeks. This project helped us understand the operation of foreign laboratories and recent research topics. During the period of stay, we could get different ways of thinking and new skills from foreign professors and further established cooperative relationships. Besides, this project helped establish friendships between foreign scholars and students in the chemical engineering industry.

本プロジェクトでは、**NTU PSE**研究室と**KU**多相プロセス工学研究室がそれぞれ学生を相手方の研究室に派遣し、**2**～**3**週間の短期滞在を行った。本プロジェクトは、海外の研究室の運営や最近の研究テーマについて理解するのに役に立った。また、滞在期間中、海外の教授から異なる考え方や新しいスキルを学び、さらに協力関係を構築することができた。さらに、本プロジェクトは、外国人学者と化学工学業界の学生との友好関係を築くのにも役に立った。

Section 5 (Please complete this section if ECRs from NTU participated in collaborative research at KU)

Achievements and Outcomes of ECRs' Stay (approx. 100–250 words)
*This section should be filled by each of the ECR(s) (one paragraph per ECR) based on his/her experience of staying in Japan.

(Please enter the achievements and outcomes for each of the ECR(s).)

My research in the NTU laboratory is about process design and optimization, which is mainly done by Aspen Plus simulation software. To get the optimized results, it is necessary to keep changing the simulation conditions. However, this process is time-consuming if it is done manually. Dr. Alcantara and his student introduced me to a new skill: linking Aspen Plus simulation software to Excel Visual Basic for Application (VBA). VBA is a programming language that is integrated into major Microsoft Office applications such as Excel. With VBA, the values in Excel sheet are entered into Aspen Plus constantly, and the results produced by Aspen Plus are recorded in Excel one by one. In this way, different simulation conditions can be tested automatically, saving a great amount of time. I also shared this skill with other laboratory members at NTU. This skill benefits me a lot.

Section 6

Photographs with captions
*Please submit digital files (such as JPEG or GIF files) of the photographs used in your report as attachments. The size of each image should be at least 4MB, so that it can be used for printed materials. Please ensure that none of the photographs submitted will cause any issues relating to portrait rights.
URL at which project outcomes can be viewed (Optional)
*E.g. workshop notifications/programs/reports, evidence of academic papers published or otherwise made available, etc.
URL:

**The picture was taken in front of Kyoto University Katsura Campus.
First from the right is Dr. Alcantara (KU PI). First from the left is Moriwaki Mizuki (KU ECR). Second from the left is Huang Ming-Li (NTU ECR).**