



**National Chiayi University**  
**College of Life Sciences**  
**Department of Biochemical Science and  
Technology**

# **Report on Industrial Attachment**

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Institute of Chemical and Engineering Sciences, A\*STAR

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The six-week industrial attachment at Institute of Chemical and Engineering Sciences (ICES), Agency for Science, Technology and Research (A\*STAR) had come to an end. First, I would like to extend my gratitude to Assistant Prof. Hsin-I Chang and Cheng-Nan Chen for seeking this opportunity and providing support to me and the staffs and the management of ICES who helped me in the application of Training Employment Pass via the Ministry of Manpower of Singapore. Last but not least, I would like to thank Dr. Desmond Heng Wen Chien, my advisor in ICES, who had offered me this great opportunity and invaluable lessons throughout the whole course of internship and shown me great encouragement and inspiration in this field of research, and Ms. Lee Sie Huey, the Senior Research Engineer in ICES, who had helped me to develop a better understanding of the project and given great guidance and shared a lot of valuable technical knowledge to me.

Throughout the whole attachment period, I have learned and gained a lot of things. I got to explore to a field which I am not familiar with. I worked on the formulation of inhaled delivery drug during my attachment instead of culturing cells and doing PCR. Frankly speaking, it was challenging as I knew very little about drug formulation but yet fascinating because I got to learn something new. Indeed, I did learn new skills. I have learned how to spray-dry a solution to powder by using Nano Spray Dryer, how to determine aerosol performance of a drug by using Next Generation Impactor (NGI), how to measure drug release profile by using *in vitro* dissolution and so on. Other than that, I had a chance to see the Field Emission Scanning Electron Microscope and High Performance Liquid Chromatography that I have only seen in the textbook in real.

Furthermore, I have gained invaluable insight into professional practice and inspired in the field of research. As before I could start entering the laboratory, I had to sit for an orientation and pass the safety test conducted by the lab officer first. In order to protect our safety, we were required to wear lab coat, goggles, gloves and maybe mask (depends on the experiment conducted) in laboratory area.

As I was exposed to a field different from what I study, I am able to broaden my horizon and I realize that I have to keep upgrading myself and explore more instead of just stick to one thing. Besides that, it is really important and necessary to improve our English. As in the institute, there were professionals and students from different countries, thus English is the only language we can communicate with all people.

After the attachment, I start growing interest in pharmaceutical science. I found out that I am really keen to do research and I want to contribute to society through the research I do. I am very lucky as my application of Training Employment Pass was approved by the Singapore government and thus I was able to intern in ICES. I am really thankful and pleased to have such a great opportunity to be attached in ICES and worked under Dr. Desmond Heng Wen Chien and Ms. Lee Sie Huey. This six-week of industrial attachment was worthy and my stay in ICES was really a pleasant and fruitful experience.

