

Report on Visit to CSIRO in Australia by International Training Program

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In this time I took part in the long term placement program, so this is the report for “Long term placement program”.

From 27th January 2011 to 28th March 2011 for two months I visited at “Commonwealth Scientific and Industrial Research Organisation (: CSIRO)” as one of member of International Training program.

Firstly I would like to explain the reason why I took part in it. In this laboratory there is some research, which is related to “Sensor”. This research is the detection of oxygen atoms using Nb_2O_5 at the part of sensor. They have done research and published the paper about it. I am really interested in it because my research in Japan is that CNW was applied for bio filed, especially we focused on a sensor using CNW. CNW has amazingly characteristic such as high aspect ratio, large surface area, electrically conductive and chemical strength. And our laboratory does not have the knowledge which fabricates the bio or gas sensor. So in this time I went to there to learn how to fabricate and evaluate the gas sensor. That is why I would like to take part in “Long term placement program”. However we could not conduct the experiment in this time because we did not have enough time to do something there. We have to take a safety class in CSIRO for a month and a half of month. If we took this class we did not have a time to conduct the experiment. So we could not do. Instead of experiment we had a discussion and presentation about my date in CSIRO with researchers. My date is that I conducted my experiment before I leaved from Japan. And I hope I would improve the presentation skill and my English skill in this time.

At 27th January afternoon we left from Japan and arrived at Sydney Australia via Incheon Korea. The

season of Japan is winter, but that of Australia is still summer because of Southern hemisphere. The much hottest tempter was over, but it was still hot and the maximum of temperature became around 30 degree afternoon. Moreover sunlight was so strong. If I did not have the antidote about sunlight, I would had terrible sunburn between the hotel and CSIRO. Firstly I would like to write the lifestyle of Australia. In Australia there are very big and famous city along the west of Australia. In 2000 summer, the Olympic was held in Sydney. After Olympic was held Sydney became more famous about sightseeing. Now a day the population of Sydney is the biggest city in Australia. Most of people in the world come to there for sightseeing. Recently the commodity price was increasing. Especially because of the climatic aberration and hurry ken, the price of the vegetable and fruit are enormously expensive. Banana was \$ 12 per 1 kg (\$1 = 90 yen). Secondly I would like to write the house rent. I went to CSIRO around there, as it is called “high-class residential area”. So it cost at least \$400 per week for rent house. There are difference notion of the house rent between Japan and Australia.



Photo 1 Sydney bridge



Photo 2 Inn



Photo 3 CSIRO

In Sydney the notion of house rent is every week. The people who live in Sydney rent the house around city because if someone bought the house, they have to pay amount of money for house.

From here I would like to write the detail of CSIRO. CSIRO was found in 1916 from Australia. This research institution is the research group of government in Australia for the public benefit or application of industrial to figure out the nationalistic problem. The research filed is very wide such as the industrial, economy, communication network, insurance, material, fabrication, mineral substance and energy. They have a lot of member and 60 branches in the world. It has branches of the number of CSIRO, and it becomes huge fiscal resources when the consignment from the outside is added, and I think fiscal resources to understand long-awaited research laboratories that much obtaining research expenses of the handsome sum of money from an Australian government. CSIRO where I have visited is the branch in Sydney. This branch is studding the plasma filed, related to bio filed and engine of vehicle and airplane. There are the national park which has beautiful forest and animal. After I thought the date that I did in Japan deeply, I walked round CSIRO to refresh my brain and body. Photo 3 was shown the name board of CSIRO. And photo 4 was shown the building of CSIRO.

I would like to write the life style of CSIRO. When we met first time, Prof. Kostya checked our skill of



Photo 4 Building

English. After I arrived at CSIRO I had a chance to conduct presentation I brought from Japan. The presentation was that “the hydrophobic and hydrophilic property of Carbon nanowall using Ar plasma surface treatment”. I had 15 minutes for presentation. However I couldn’t finish the presentation in 15 minutes in this time. I am writing the detail later. After my presentation Prof. Kostya gave me advise such as the skill of presentation.

1. Rapid utterance
2. Keep in time
3. Too many lantern slide

In this presentation I had two themes. Because the content of another theme besides the theme that the content of the announcement had given up had been spoken in this presentation, it was able to be forecast beforehand that time became insufficient. However, it

was said, "Rapid speaking" as a result of devising it to end the announcement in the announcement time, and was not able to end the announcement in the announcement time. Moreover, the number of sheets of the slide has increased considerably because there were two content of the announcement. After I finished the date which I conducted experiment in Japan we had a discussion about my date.

My date that I conducted my experiment in Japan was interesting for Prof. Kostya very much. Because he wrote the paper as third author about close to my date. When CNT was exposure using Ar plasma surface treatment, the property of CNT films became the hydrophobic property. There is different between the results of CNT ^[1] and results of CNW. So that is why he is interested in it. The presentation was that "the hydrophobic and hydrophilic property of Carbon nanowall using Ar plasma surface treatment".

When advice to English presentation ended, the following received guidance of the writing of the thesis.

1. Decide the outline
2. Think about figure

I got advice as written a treatise while noting these points. And, it thought to think about the thesis composition to make the experimental data that I did in Japan while noting these a thesis, and which graph to use next. And, the thesis was not able to be written completely by the data brought in by this dispatch, and the thesis was finished writing while sending a long term on the way. It decided to experiment on the addition after it returns home to Japan, and to finish up the thesis completely. In the report of this long-term dispatch program, because it is not a thesis yet that all concerns data, it cannot be written to concern data and the thesis composition in this report. After several weeks had passed, presentation was done again after the discussion about data and the discussion of the composition of the thesis etc. ended. It succeeded in the firm reflection of advice in the slide, and putting away of getting in the last presentation the announcement in the announcement time. Moreover I got good point from Prof. Kostya.

1. It is possible to announce by seeing spectator's eyes.
2. It is easy to see the slide.

Finally I have a lot of time to do something in lab. So I asked the researcher what they studied in CSIRO. They have explained their researches to me. It was so exciting for me. And I asked them the lifestyle of research and the future that what you are doing after finishing the Ph.D. candidate. Basically I talked to other researchers in English. Sometimes the people who try to study Japanese spoke in Japanese. So every time I practiced English for me. I had wonderful experience that I stayed there without Japanese. It was so important to learn English. I have always thought English without Japanese.

In this "Long term placement program" I had some purpose to take part in it. Of course it is including the purpose of research. Especially I focused on "Improvement of English communication" for two months. Before I took part in Long term placement program I had ability that I could speak daily conversation. But the person who talked with me always tried to speak early to me. There is still the wall to English.. in oneself cannot destruction. However, it kept making a little chance while programming this long-term dispatch, and it speaking with various people. When English was spoken before it sent it, English was not able to be understood from English, and it answered in Japanese once, and as a result, it translated into a Japanese translation, it thought about the answer in Japanese, and what translated into English was answered to the other party. But I felt the problem. My few such a vocabulary for English, using other words when returning it in English, and having answered are regrettable. It is given it was not possible not only to answer in English but also to return the answer by using an appropriate English word as a reflection point. "Speak with whom" The friend was able to be made in Sydney as a result of participating in the long-term dispatch program by this stance. The nationality contacted after the long-term dispatch program ended by the variegated one each other, and did the promise to meet again somewhere in the world. It is not thought that it

made a friend when never participating in this long-term dispatch program so.

In this time I took part in “Long term placement program” I learn a lot of things. In CSIRO we could not conduct the experiment in this time because we did not have enough time to do something there. We have to take a safety class in CSIRO for a month and a half of month. If we took this class we did not have a time to conduct the experiment. So we could not do. Instead of experiment we had a discussion and presentation about my date in CSIRO with researchers.

I was going to experience no experience when experimenting on the doing method etc. to how to make the comment on the discussion about data and presentation and the thesis compositions and theses with researchers at the dispatch destination a lot. It is very regretted not to experiment though it was possible to experience like this. However, because time is taken with the safety training program for one and a half

months, being going to be sent in the coming year also has the possibility of becoming a similar content of the dispatch. I think that the point there that should be noted. In English respect, “break through ”was able to be experienced. There were considerably a lot of participation in this long-term dispatch, and to the plus.

I really appreciated to Prof. Hori, Prof. Toyoda and stuff because they gave me the chance to visit there for 2 months. It was wonderful day for me. After Long term placement program I really am thinking about getting a job in the world. My mind was changed by Long term placement program. It was really good time! Thank you so much for giving the chance to all stuff of International Training program and all researchers in CSIRO including Prof. Kostya.

(Referrence)

(1) Z. J. Han, et al., APL, **94**, 223106, 2009.