

Short-Term Student Exchanges for Aspiring International Activities of Engineering Students

Takashi Sato^{*†} · Shuichi Sakamoto^{*} · Tadaaki Shimizu^{*} · Takamasa Suzuki^{*} · Hideki Ikeda^{**} · Anja Hopf^{***} ·
Yasushi Goto^{***} · Tetsuo Oka^{*} · Tomohiro Sasaki^{*} · Takatsune Narumi^{*}

^{*}Niigata University, Faculty of Engineering

^{**}Niigata University, International Exchange Support Center

^{***}Niigata University, Institute of Education and Student Affairs

ABSTRACT

The Faculty of Engineering, Niigata University, Japan, obtained the scholarship in “Short-Stay and Short-Visit scholarship programs(SS-SV programs)” for both German and Japanese students in 2011 and 2012. Our short-term student exchange programs proved that a short-term stay in a foreign country worked as an initiator for the students’ interest and it strengthen their will to study further more in foreign countries.

Keywords: Engineering Education

I. Introduction

The Faculty of Engineering, Niigata University, Japan, started international cooperation with Otto-von-Guericke-University Magdeburg, Germany in 1994 and started the “Two-week Summer School” program in 1996(1)-(4). We have exchanged more than 200 students for the “Summer School” until 2010. We have also exchanged more than 50 students for longer stay than three months[5~6].

The Japanese Student Services Organization(JASSO) has started its “Short-Stay and Short-Visit scholarship programs(SS-SV programs)” in the academic year 2011. So, we applied the “SS-SV programs” and organized 30 students exchange in 2011 academic year. We are now working to exchange 35 students in 2012 academic year. The objective of these “SS-SV programs” is to support students to visit a foreign country and stay there for less than three months. The authors believe that this type of short-term exchanges has actually proved to be very effective to encourage the students in engineering fields to start international activities. Indeed, our past experiences

of the “Two-week Summer School” and the longer-term programs, have proved that a short-term stay in a foreign country works as an initiator for the students’ interest and it strengthen their will to study further in foreign countries.

In this article the authors will report their 2011 and 2012 “SS-SV” international exchange activities of Niigata University, including a comparison with the previously held “Two-week Summer School” activities.

II. Our program

We have already exchanged more than 200 students up to today in our Summer School, and exchanged more than 50 students as longer stay students. These numbers have already proved that this kind of short exchange is effective for motivating students to study in a foreign university again for the longer period. However, we had insufficient scholarships for the longer stay students until 2010 academic year. So, we applied three different programs to the SS-SV programs, i.e., Two-Weeks-Summer-School program, 40-Days-Stay Language-Oriented program, and 70-Days-Stay Engineering-Oriented program. Because the total number of exchange students between

Received 30 June, 2014; Revised 30 July, 2014

Accepted 30 July, 2014

† Corresponding Author: tsato@eng.niigata-u.ac.jp

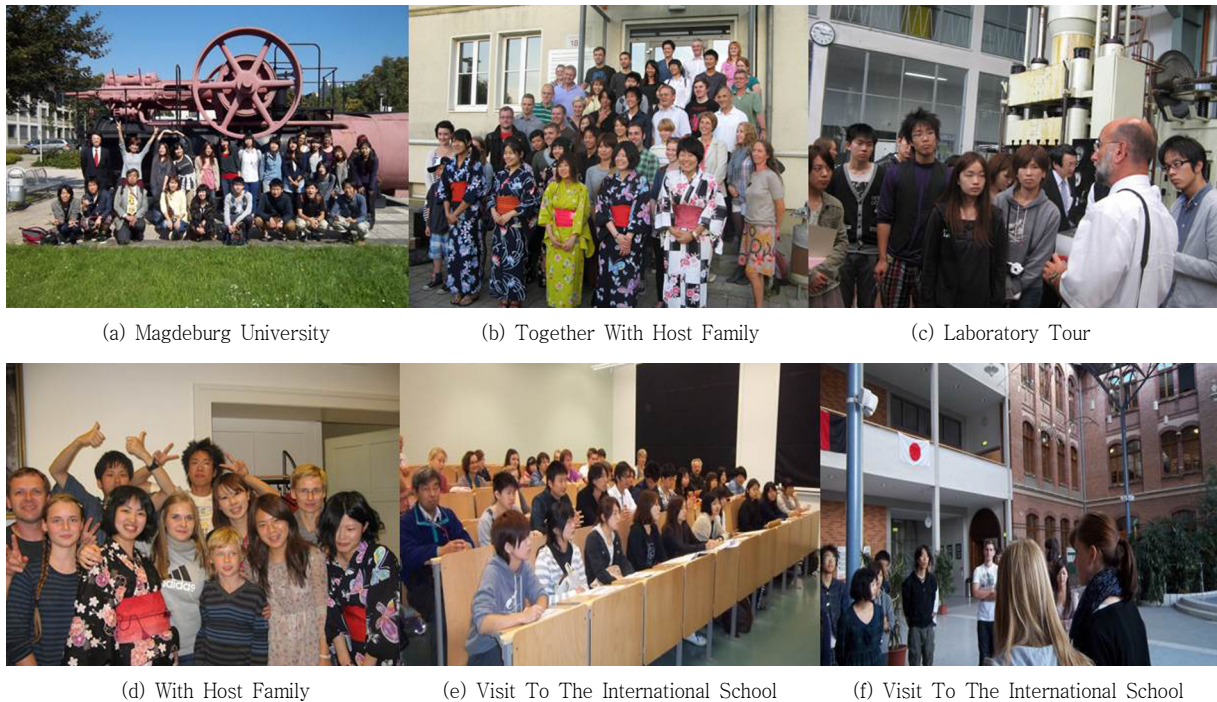


Fig. 1 Pictures of 2012 Summer School in Magdeburg

Magdeburg University and Niigata University in 2012 counted as many as 35, we anticipated whether we could have so large number of applicants. However, as a result, we had no problem to collect sufficient number of good candidate students. One of the reasons that so many students are interested in these foreign exchange programs is considered to be the experience of the students' going abroad for Summer School activities; the former Summer School participants applied to the longer stay programs. Also the former participants have made considerable influences to their friends through talking about their experiences in foreign university.

III. What we can expect

Recently, we have many reports claiming that Japanese students today show a decided lack of interest in studying abroad, compared with students in other Asian countries, such as China and Korea, or even Japanese students a decade ago. Leaders in government and academia worry that in the near future this may cause some negative effects on the Japanese economy and Japanese society

as a whole as globalization progresses. So, Japanese government, Ministry of Education, Culture, Sports, Science and Technology, Japan, calls for the programs, which train and globalize Japanese university students, i.e., "Short-Stay and Short-Visit scholarship programs(SS-SV programs)".

We believe the SS-SV programs and/or other scholarship programs are also very important for motivating students. The following student's reports prove our belief.

• Engineering Student "A":

In the home-stay, we could experience German culture directly, and we were able to hone communication skills in English. Before I joined the "summer school" program, I didn't have the confidence to communicate with outsider person. However, in this experience, I know that I can communicate well with my poor English, I have confidence now. I think this is a very good thing. I was able to learn firsthand about the importance of international experience while a student. In the dormitory, we could get a lot of knowledge by talking to each has experienced. To stay with other Japanese student, we could get a sense of reassurance and it led to a positive attitude.

• Engineering Student “B”:

As for learning about engineering technology in Germany, I visited the factory which is manufacturing the bullet, and the factory of the drug company. I learned about technology of mass production then. And there are many laboratories in Otto-von-Guericke-University Magdeburg. For example, research of the technology which detects feelings from man’s expression by image processing, research of machine which carries out land mine investigation, research of semiconductor, research on the automobile operation simulation for reducing a traffic accident, research which develops medical equipment using X-rays. When I visited these laboratories, I surprised at high level of technology and equipment.

• Engineering Student “C”:

The purpose that I participated in this program is reform of my sense and study of English. I had never thought that I want to go to abroad. The thing which was the biggest as the reason is because I’m not good at English. I had felt anxiety, because I can’t talk in English well. However, English is indispensable because globalization advances more from now on. Therefore I wanted to become good at English and studied abroad. Because originally this program was performed for a department of engineering and period is about two weeks, I thought easy to participate as the first studying abroad. In addition, it is also one of the participation reasons that I have heard that it is easier to catch English which Germans speak than a native.

• Engineering Student “D”:

This time, I have two reasons for having subscribed for this short-term studying abroad. In order for one, I want to know the situation of culture and the present industry of Germany. Secondly, I knew that the company in Japan observing overseas and asking for global talented people now through my job-hunting activities. And I thought that I would like to extend a view about employment. I actually went to Germany and I have many things felt by inspecting the laboratory of the university there, observing the situation of various factories there, and being concerned

with the person of a spot. First, I thought Germany was full of a sense of art. The design of many buildings is elaborate too great. And yet I received the impression that the town harmonized with nature. Moreover, the old buildings and many churches are located in a town, and the monument of the church which has collapsed at a certain disaster and wartime was installed on the street.

• Engineering Student “E”:

I went to the foreign countries for the first time in “summer school”. I worried about going abroad for two weeks until I went. However, I enjoyed in Germany, and the happy time has been over in no time. I cry a little now when I see a photograph. There are two reasons for these tears. One is homesick, the other is regret. In the first I thought that German people is not native English speaker. So I justified that I could not speak English and I assumed a defensive attitude and went to Germany. Also I thought that they understand about Japanese culture after I show Japanese pictures. But it was different. German students are very high level because I was not able to compare with them. They can speak English naturally, and other languages too. Research facilities and study contents in Magdeburg University were just high level things, too. I really felt the need to study hard.

• Engineering Student “F”:

For me this was the first overseas trip. I began to feel it easier to study abroad by going overseas and receiving information in English, and now I want to go travel to Germany again. Through communication with local people in English and German, I improved my foreign language skills and communication skills than before joining summer school. However, I sometimes could not communicate well. So I am eager to study English and German than before with next studying abroad in mind. Furthermore, I want to interact with German people more, and understand the German culture, history, and industry. In addition, although I participated as a student of engineering, I couldn’t understand some technical things because I am second grade. So I want to go abroad again to be able to introduce my research in the near future.

- German Language Course Student “G”:

In various situations I felt strongly how poor my English and German are. And I decided to study harder after this summer school. I will continue studying, keeping in mind this feeling. And I will visit Germany again in the near future.

- German Student “GA”(2011):

My stay in Japan gave me the great opportunity to learn much more about Japanese culture and about Life. I improved my Japanese and English, got very interesting ideas and knowledge about my research topic and the time to concentrate on researching at work. Thank you very much for everybody who made this possible.

- German Student “GB”(2011):

In consequence to my stay in Japan and attending Niigata University I decided to continue my studies of Japanese business and culture by seeking the chance of acquiring a doctoral degree from Niigata University.

- German Student “GC”(2012):

So at this time I can say the last four weeks in Japan especially in Niigata were really interesting and I learned a lot of new things. I learned more about Japanese and their behaviors. I experience more than I ever expected and more than you can know from books or movies about Japan. I would always advise this program to friends of mine.

- German Student “GD”(2012):

I want to say that I really enjoyed the exchange with the Niigata University and want to thank all the Japanese and German staff that offered this great possibility which broadened my horizon.

IV. Summary

Based on positive responses from former participants of the Summer School, the Faculty of Engineering at Niigata University has more students expressing a strong will to study abroad than ever before, while, curiously, the opposite appears to be true, for the rest of the country, –possibly a reaction to the disastrous events of the last

several months.

We believe that it is of the utmost importance, that students who have previously taken part in the Summer School program share their opinions and experiences with other students, because the comments of peers can carry more weight, than those of their professors, who may, –or may not have actually had similar experiences.

Another, far bigger problem, in Japanese universities, is their seeming intractability, regarding overseas study. Not just the students, but also young research assistants and associate professors are under an inordinate amount of pressure to “produce”, leaving little or no time to even consider opportunities for international exchanges.

Other recent evolving processes are seeing Japanese universities' “Chair system” creating divisions in the relationship between professors and associate professors. So, we are extremely concerned, that this will have a powerful negative effect on young associate professors' chances of taking their sabbatical years.

This work is sponsored, in part, by the Niigata University Faculty of Engineering Support Association. The authors also show their highest appreciation to Prof. Lutz Wisweh, Dr. Uwe Genetzke, Ms. Sylvia Zabel (Otto-von-Guericke-University Magdeburg, Germany), and other German side officers for their cooperation to our activity.

References

1. Takashi Sato, Christine Sobczyk, Shuichi Sakamoto, Nozomu Ishii, Yuji Tanabe, Masaki Goda, Takeo Maruyama, Tomiichi Hasegawa, Hideo Ohkawa, and Lutz Wisweh, “Differences of education systems between Japan and Germany” Consideration about “Before and after graduation”, 11thWCCEE (2008).
2. Takashi Sato, Shuichi Sakamoto, Tadaaki Shimizu, Takamasa Suzuki, Hiroyasu Iwabe, Tetsuo Oka, Yuji Tanabe, Hideo Ohkawa, and Lutz Wisweh, “Discussion about Engineering Education in Japanese University from the International Point of View”, Proc. 12th WCCEE, P048 (2010).
3. Takashi Sato, Lutz Wisweh, Shuichi Sakamoto, Tadaaki Shimizu, Takamasa Suzuki, Hideki Ikeda, Tetsuo Oka, Yuji Tanabe, and Hideo Ohkawa, “International Cooperative Activities for the Engineering Education between Otto-

von-Guericke-University Magdeburg, Germany, and Niigata University, Japan”, Proceedings of ACEE 2009, pp. 122-123 (2009).

4. Takashi Sato, Lutz Wisweh, Shuichi Sakamoto, Tadaaki Shimizu, Hideki Ikeda, Tetsuo Oka, and Yuji Tanabe, “International Cooperative Activities for the Engineering Education between Otto-von-Guericke-University Magdeburg, Germany, and Niigata University, Japan”, Journal of Engineering Education Research, Vol. 13, No. 5, pp. 49-54 (2010).
5. Takashi Sato, Shuichi Sakamoto, Tadaaki Shimizu, Takamasa Suzuki, Hideki Ikeda, Tetsuo Oka, and Takatsune Narumi, “International Exchanges for Aspiring Students in Engineering Field”, Proceedings of ACEE 2011, Paper ID A0064 (2011).
6. Takashi Sato, Shuichi Sakamoto, Tadaaki Shimizu, Takamasa Suzuki, Hiroyasu Iwabe, Tetsuo Oka, Yasushi Goto, Kazuaki Yamagiwa, Anja Hopf, Lutz Wisweh, and Takatsune Narumi, “Short International Exchange Programs for Aspiring Students in Engineering Field”, Proc. 13th WCCEE, Presentation No. 76 (2012).



Takashi Sato

Professor, Faculty of Engineering, Niigata University
Received BS(1976), MS(1978) and Ph.D.(1983) in Electronic Engineering from Kyoto University. His work experiences are Professor(1995-), Associate Professor(1986-1995), Assistant Professor(1984-1986) and Research Assistant(1981-1984),

Faculty of Engineering, Niigata University. He was a visiting fellow, JILA, University of Colorado, USA(1988-1989). His current research focuses on the frequency stabilization of a semiconductor laser.

Phone: +81-25-262-6723

Fax: +81-25-262-6723

E-mail: tsato@eng.niigata-u.ac.jp



Shuichi Sakamoto

Associate Professor, Faculty of Engineering, Niigata University
Received BS(1986), MS(1988) and Ph.D.(1991) in Mechanical Engineering from Niigata University. His work experiences are Associate Professor(1998-) and Research Assistant (1991-1998), Faculty of Engineering, Niigata University. He

was working as a Research Associate of JSPS(1989-1991). His current research focuses on the sound noise control, sound absorption construction and various measuring method using sound.

Phone: +81-25-262-7003

Fax: +81-25-262-7003

E-mail: sakamoto@eng.niigata-u.ac.jp



Tadaaki Shimizu

Professor, Faculty of Engineering, Niigata University
Received BS(1983) in Chemical Engineering, MS(1985) and Ph.D.(1994) in Chemical Energy Engineering from Tokyo University. His work experiences are Professor(2008-), Associate Professor(2003-2008) and Research Assistant (1988-2003), Faculty of Engineering, Niigata University. His current research focuses on the chemical energy engineering, especially combustion of solid fuels.

Phone: +81-25-262-6783

Fax: +81-25-262-6783

E-mail: tshimizu@eng.niigata-u.ac.jp



Takamasa Suzuki

Professor, Faculty of Engineering, Niigata University
Received BS(1982), MS (1984), and Ph.D.(1994) in electrical engineering from Niigata University, Tohoku University, and Tokyo Institute of Technology, respectively. His work experiences are Professor(2007-), Associate Professor(1994-2007), Lecturer(1993-1994), and Research Assistant(1987-1993), Faculty of Engineering, Niigata University. His current research focuses on the optical metrology.

Phone: +81-25-262-7215

Fax: +81-25-262-7215

E-mail: takamasa@eng.niigata-u.ac.jp



Hideki IKEDA

Associate Professor, International Exchange Support Center, Niigata University
Received BA(1987) in Spanish from Osaka University of Foreign Studies(Currently Osaka University) and also received BA(1994), MA(1996) in Japanese Linguistics from Osaka University. His work experiences are Associate

Professor(1999-) International Exchange Support Center, Niigata University and Research Assistant(1998-1999), Osaka University. His current research focuses on the acquisition of tone and rhythm in Japanese as a second language.

Phone: +81-25-262-6476

Fax: +81-25-262-6476

E-mail: ikeda@isc.niigata-u.ac.jp



Yasushi Goto

Associate Professor, Institute of Education and Student Affair, Niigata University

Received BA(1987) in Education from Niigata University, MA (1996) in Education from Niigata University, Ph.D.(2006) from Niigata University. His work experiences are Lecturer

(2005-2010), School of Health Sciences, Niigata University of Health and Welfare and Associate Professor(2010-), Institute of Education and Student Affair, Niigata University. His current research focuses on Role of Metacognition in Media Education, Media Literacy and Teacher Education.

Phone: +81-25-262-7785

Fax: +81-25-262-7785

E-mail: gotoh@ge.niigata-u.ac.jp



Tetsuo Oka

Professor, Faculty of Engineering, Niigata University
1979: Kyoto University, Department of Engineering, Bachelor
1992: Nagoya University, Graduate School of the University,
Department of Applied Physics, Ph.D. Interesting Research
Area: Applied superconductivity, thermal behaviors of the
magnetic flux during the pulsed-field magnetization, performances of trapped field
magnet activated by static magnetic fields, construction of various magnetic field
generators using HTS bulk materials, industrial application of high temperature
superconducting bulk magnets
Phone: +81-25-262-7668
Fax: +81-25-262-7666
E-mail: okat@eng.niigata-u.ac.jp



Takatsune Narumi

Professor, Faculty of Engineering, Niigata University, Japan
Received BS(1978), MS(1980) in Mechanical Engineering from
Niigata University Ph.D.(1994) from Tokyo Institute of Technology.
His work experiences are Professor(2009-), Associate
Professor(1993-2008), lecturer(1992-1993) and Research
Assistant(1981-1992), Faculty of Engineering, Niigata University. His current research
focuses on the flow behavior of complex fluids and application of functional fluids
to flow control.
Phone: +81-25-262-7014
Fax: +81-25-262-7014
E-mail: narumi@eng.niigata-u.ac.jp