

## Report of the 13<sup>th</sup> Japanese-German Frontiers of Science (JGFoS 2016) Symposium

Dr. Takashi Nakanishi, Planning Group Member (PGM), Japanese Co-Chair  
Group Leader, Frontier Molecules Group, MANA, National Institute for Materials  
Science

The 13th Japanese-German Frontiers of Science (JGFoS) Symposium was held at the Steigenberger Hotel Sanssouci, for four days from 6th to 9th October 2016 under the cloudy skies of late autumn of Potsdam, Germany. It was my third JGFoS participation since the 11th in Bremen and the 12th in Kyoto. But just before the symposium, I suffered from tonsillitis that came under the pressure of being assigned to the important role of a PGM co-chair. I was uneasy from the start. On the other hand, I had lived in Potsdam from 2007 to 2010 in the position to lead the MPI-NIMS International Joint Laboratory, in the Colloids and Interface Division at the Max Planck Institute. The experience made me feel that I attended the symposium held in my second home ground.

Aside from personal stories, the JGFoS was the opportunity where Japanese and German young researchers under the age of 45 (in principle), 30 people from each, of the six different science fields, gathered together to present and discuss cutting edge science topics almost for four days including reception. As I spoke passionately (?) in my opening remarks, in my view, we need not draw a single conclusion. Rather, it is well worthy if 60 people with their own efforts reach 60 different conclusions in the end.

Based on the FoS experience, participants were expected to make a leap forward as leaders who lead global human resources and scientific researches. However, for the most participants from both countries, English was not a mother tongue. Consequently, keeping listening and discussing presentations on different specialized fields in English for a few days greatly stimulated the part of brain that was rarely activated. I felt tired at the end of the day, but I was impressed by the symposium every time I participated in since it was designed as a greatly enjoyable event. I am proud of myself as a FoS-oriented researcher and FoS lover. Naturally, it goes without saying that I attended the JGFoS in Potsdam with enthusiasm to enjoy it more than anyone else.

Thursday, 6 October

The JGFoS symposium begun with the session coordination meeting. This meeting was held in the evening before the opening of sessions for the PGMs and the speakers of all disciplines to meet each other for the first time. It was an important

gathering to have, while being misled by the scheduling of the sessions set in the Agenda Book. The meetings were started relatively smoothly. Someone brought souvenirs from Japan that seemed help the participants of the session familiarize with each other.

Meanwhile, how the people in each discipline spent time made me notice the different character of each session. The people of the Mathematics/ Informatics/ Engineering field session were talking about the philosophy of the theme they would cover in the session. On the other hand, the people of the Social Sciences field session were struggling to agree on whether the introductory speaker could refer to the comments that overviewed the theme.

Concerning the Chemistry/ Materials Sciences field which I was in charge of, all five members, the two PGMs, one introductory speaker and two speakers, held a Skype conference for the preparatory meeting in Japan in July. Before the symposium, we brought up the participants' reaction during the preparatory meeting and the topics on the Nobel Prize in Chemistry announced just a day before the FoS symposium, and built up the session structure.

In particular, I tried to arrange the topics addressed by three speakers to be logically constructed and tightly related. Since I had to instruct the young but already prominent researchers, I carefully selected wordings and consulted with other PGMs beforehand how to tell them. I think I have developed the coordination skill since then.

As the most speakers experienced the FoS for the first time, it was important, particularly for the speakers in the sessions organized in the first half of the symposium, that PGMs, who had experienced it, communicated and shared the feelings of the symposium as well as the thrills of being bombarded with unpredictable questions.

It might be usual to have a time limit while leaving many issues that could not be confirmed in the one-hour session coordination meeting. We moved to the welcome reception venue hastened by the staff of the Alexander von Humboldt Foundation (AvH).

By the way, I was able to do the verification work with the speaker team in a relaxed way at the session coordination meeting since I had visited Dr. Patrick Theato, the German PGM in the Chemistry/ Materials sciences session, at his lab in the University of Hamburg before the start of JGFoS. While it was limited mainly to research discussions, we discussed the introductions and checked the final

comments to the speakers.

Also, I met Dr. Yvonne Stahl, the PGM co-chair on the German side to have a final discussion about the next day's opening remarks and confirmed the arrangements and other issues one hour before the session coordination meeting. As I will describe later, we worked together as co-chairs and I felt I was very lucky because she was a really excellent person.

I prepared the slides for the opening and closing remarks with her. She was very cooperative and came up with many ideas so that we were able to offer proper greetings to some extent. It was a valuable experience unique to a PGM and a PGM co-chair that made me recognize a partner as a collaborator and respect each other while working together on the mission.

In addition to 27 German and 30 Japanese researchers, several participants from the AvH, the JSPS, and the Japanese Embassy in Berlin attended the welcome reception. It was the occasion where almost all participants met for the first time.

For the participants who arrived from Japan in the morning of the day, I guess they had jetlag and were slightly tired. Conversely, considering that the past German participants were similarly situated when the symposium was held in Japan, I personally understand that JGFoS expected us to raise the experience point for harshness.

The reception meal was served buffet-style. We enjoyed the atmosphere of Germany while tasting the dish such as a Curry Wurst (a sausage with a curry-flavored sauce) which was a specialty of the Berlin region.

We also met with the general participants there and exchanged greetings. Each one seemed to prepare for the sessions that would start from the next day by communicating with peers of one's own field. Besides, the PGMs had reunion for the first time since the last year's symposium.

Probably at this point as well, I wonder, the participants other than PGMs and speakers who had participated in the FoS before, did not have the concrete image of the real joy of FoS, such as the interdisciplinary communications, the pleasure of discussion and the atmosphere of symposium.

Friday, 7 October

As I woke up on the first day of the session programs, I realized that having breakfast was actually important where I could communicate with others.

Therefore, every morning, I talked with other participants, who happened to be at the same breakfast table, about the FoS, research topics, weather, food, hobbies and all that seemed interesting. It was a great opportunity to enjoy free conversation and to know each other.

Then, finally it was the opening. Dr. Helmut Schwarz, President of AvH, conveyed greetings and messages to the young JGFoS participants. In his remarks, he mentioned what they would be expected to achieve. The comments by Dr. Schwarz reaffirmed me with respect to the objectives of the FoS, such as the development of the interaction between different fields, the international exchange, research fields and activities with a broad perspective that derived from the FoS experience.

Dr. Takeshi Kakegawa, the JSPS FoS Symposium Advisory Board Member, gave an opening speech. Also, Dr. Yvonne Stahl, the German counterpart, and I gave the opening remarks as PGM co-chairs. We illustrated the purpose of the symposium, the session arrangement that consisted of the six fields, the process of the session theme selection which took the example of the previous Planning Group Meeting in Kyoto, the program scheduling and the atmosphere of the last year's symposium in Kyoto by showing slides, and introduced our PGMs. Lastly, we added some comments on the FoS from our understanding and offered a tip, though we might be considered presumptuous (see the beginning). The description of two slides (I had to summarize many things I wanted to say in two slides.) used at the opening remarks were as follows:

1p.

### **Talking, Talking, Talking**

- Meet people outside of your field and from the other country.
- Build networks! They will have a long lasting effect.  
Don't be afraid and stretch a bit out of your comfort zone!
- In FoS, there are no such thing as dumb questions.  
Questions from outside the fields are welcome.
- When asking a question, please state your name/ institution/ research field so that we can know you.

2p.

### **What we believe FoS is about...**

- **Brainstorming**
  - i) No Single Conclusion, ii) Freewheeling Discussions
  - iii) Quantity (Multiple ideas) >> Quality, iv) Bond Improvement
- **Future Leaders**
  - i) Team Networking
  - ii) Initiate Research Collaborations (If possible)
- **Enjoy Unusual Opportunity**

- i) Forget Your Daily Busy Businesses
- ii) Simply Enjoy FoS
- **Learn from each other**
  - i) Interdisciplinary & Intercultural Exchange and Communication
  - ii) Boost Each Other Up

Of course, I did not forget to relax the audience. I hope my little chat about the photo of my three years old son (at that time) - I took in the Park Sanssouci during the period I lived in Potsdam - helped them warm up prior to the first session.

The first session of this symposium was on the “Biology/ Life science” field. Dr. Naoki Osada and Dr. Yvonne Stahl were in charge of the session as PGMs. They gave presentations and discussed on “Genome Editing: Function, Application and Future”.

Dr. Charpentier and others, a group of German researchers, who developed the innovative technology in genome editing of Crispr/ Cas 9 system, were listed as leading candidates for the Nobel Prize in Chemistry that was announced the day before the symposium. If they had been awarded, the session would have been more awesome. Though the different group of researchers was awarded for the 2016 Prize, I hope that the JGFoS participants will be able to show off the knowledge gained in this session if they are awarded in the future.

To begin with, the introductory speaker, Dr. Randau (Max Planck Institute in Marburg), explained the function and origin of Crispr/ Cas 9 system to follow-up the subtitle of the session; “function, application, and future”. Then, Dr. Ochiai (Hiroshima University), reported the latest research on the difficulty of single base substitution and the clinical application on humans in the future. Finally, Dr. Stuttmann (Martin-Luther University) introduced the application examples of genomic editing in plants.

Despite the two PGMs’ anxiety over the first session, several questions came up quickly, and a lively debate was held. Since it was a technology that could change our view of life in the future, not only the questions on technical problems but also the tough questions on ethics were frequently raised. It was a good session that provoked a widely-interested fusion of different fields without being confined to specialties.

Regarding the summary of each session above and below, I wrote them based on the interviews I conducted with the Japanese PGMs. It was better than offering the summary written with my superficial knowledge, and it was also a good opportunity

for them to summarize the sessions they were in charge of. Moreover, I think that the gap between the direction aimed at and the actual result of each session would be accurately transmitted.

Following the group photo shoot, the flash talk of the poster session was held. Poster sessions were programmed after lunch on the first day and before lunch on the second day. Every participant was given an opportunity to appeal his/ her research through giving a poster presentation.

There were 46 poster presentation entries out of 60 participants. Each presenter introduced the essence of the poster contents within 90 seconds. Although the participants other than PGMs and speakers added up to half of the whole, their chance to appeal to the all participants was limited to the flash talk and the six times of question and answer session in about 60 minutes that would be conducted after the presentation of the session field.

I could not tell whether there was a participant who challenged the flash talk while being aware of the fact. Nevertheless, I felt that the 46 people's flash talk finished in a blink of an eye. As expected, each young researcher, who was engaged in the front line of the study of the science, meticulously prepared for delivering a crispy and dense performance of 90 seconds. Thus, together with the explanations at the poster presentation, their presentations had further deepened our mutual understanding.

I myself demonstrated writing by using a light-emitting ink which was a novel "liquid" material developed in my research with a very few projected slides. Besides, similar to the last year's symposium, posters were displayed by each field at the poster session venue, which made it easy for us to look at. It seemed the participants made the most of the poster session by extending their discussions during the break or other free time outside of the scheduled session. So, why don't we send out a questionnaire to investigate how many cases (%) actually have been developed into collaborative research projects, thanks to such exchanges of opinions at the poster session?

After the poster session, Ms. Sachiko Kawakami, Section Chief of the FoS Symposium at JSPS and Ms. Katja Hartmann, Program Director Frontiers of Research at AvH, gave presentations about their organizations and missions. The most memorable was a video movie designed and created by JSPS. One of the frames describing how a grant applicant was selected and rejected at the interview aroused sympathy among the audience regardless of nationality. In addition, both agencies planned to grant a follow-up fund for international collaborative research projects and promote its provision. I myself want to create an opportunity for a

collaborative research project with the German participants, apply for and use the fund for the further development of my research so that it will be extended and advanced into different fields.

The second session was about “Chemistry of confined space” in the field of Chemistry/ Materials Science. Dr. Patrick Theato and I were the PGMs in charge. We started the session on the advanced chemistry of nano space by introducing the case that the water around us was confined in a restricted space and behaving as water molecules while having properties different from that of bulk water.

Prof. Uemura (Kyoto University), who was selected as an introductory speaker for the first time, introduced the several material functions unfolded in the restricted space, by bringing up the material that hold the regulated nano space in the framework called “MOF” made of the metal and organic molecules. In his lecture, the video that showed the eels (Anago?) lined up orderly in the tube gave a vivid impression on the audience. Then, Dr. Clever (TU Dortmund University), introduced the chemistry of cage-like molecules that corresponded to the smallest unit of MOF.

The Nobel Prize in Chemistry, which was announced two days before the session, was awarded for the study of “molecular machines”. The topic of Dr. Clever's research, that dynamically controlled the restricted space within the cage-like molecules, was really up to the minute because it had a high similarity to the awarded study.

Next, Dr. Inoue (Nagoya Institute of Technology) introduced the functions of restricted space and channel that exist in the bio-protein. I think the audience understood the diversity of science occurring in the restricted space highlighted by the study of chemistry. Moreover, Dr. Clever was working on the research of the artificial molecular system, which was presented by Dr. Inoue, for the imitated photo-responsive channel function occurring within the protein. It was quite interesting that the chemistry of restricted space talked by the three speakers was closely related.

The question from the participants of the physical field that asked if the quantum MOF was possible or not got across my point. Furthermore, the typical FoS-ish debate that questioned whether the new materials used for the MOF and the self-organization process would harm the environment and society took place.

I heard that some participants of other discipline mentioned the MOF again on the final day of the symposium. I was relieved that the subject I covered in the

chemistry session was very well preserved in the memory of the audience.

Saturday, 8 October

The morning of the second day of the session programs began with “Gender, Education and Inequality” in the Social Sciences. The PGMs were assigned to Dr. Tamaki Endo and Dr. Hella von Unger.

First, Dr. Kessels (Freie Universität Berlin), a psychologist and the introductory speaker, pointed out that the most recently noticed phenomenon was the relatively low presence of female researchers in the STEM (Science, Technology, Engineering and Mathematics) subjects and the relatively low level of academic achievements by male researchers in general.

From the standpoint of psychology, the factors of these phenomenon could be explained by the subjectivity of individuals who were affected by the stereotypes. The next speaker, Dr. Nakazawa (Osaka University), introduced the discussions and actual situations in Japan. According to Dr. Nakazawa's presentation, the gender differences in education were generally shrinking as a whole though they remained persistently. He then discussed the high school students' achievement, differences observed between genders in terms of aspiration and selection, their hierarchy and assumed factors by using the unique findings in research.

The third speaker, Dr. Fritzsche (University of Education Freiburg), clarified using the ethnographic method how the perception of “masculinity” or “femininity” was shaped and practiced in daily school activities by presenting the case in an elementary school classroom.

The above three reports applied different approaches with “psychology”, “sociology” and “pedagogy”. Although each analytical method was not exclusive, the starting points of analysis were varied, such as a personal subjectivity, institutions and organizations, and a practice. Also, they had different points to emphasize in understanding the interaction between society and individuals. As a result, the session showed more interdisciplinary trait than other sessions.

In the question and answer session, an interesting discussion on how to analyze the complex social phenomena was developed. Especially, many questions were also raised on the problems, such as, how to handle the bias by which social scientists may be affected when analyzing the subjectivity of individuals and the institution, or, what state was defined as “equality” which was the pair concept of inequality.

If mere attribute differences were institutionally generated, strengthened and

linked to the differences in social conditions of some sort, they might be the subjects to be studied by social scientists. The reason why many questions about the individual's choice was raised could be described as "personal is political", that is, any individual dimension could not avoid being influenced by social contexts and institutions. It was interesting because the point seemed to reflect the contents in which the questioners had been interested consciously and unconsciously.

The two PGMs, Dr. Yasuhiro Hasegawa and Dr. Michael Schmiedeberg were in charge of the afternoon session on the second day that was started after the poster session and lunch. It was on "Breakdown of dynamics" in the field of Physics/Astrophysics. They set the theme to promote various discussions in-depth by involving not only natural scientists but also social scientists. The "Breakdown of dynamics" meant a complex physical phenomenon that happened around us.

The introductory speaker, Dr. Timme (Max Planck Institute in Göttingen), presented the specific models on the computer network and electric power transmission as an example. The Japanese speaker, Dr. Nishi (Tottori University), brought up the traffic congestion. His presentation explained why traffic congestion occurred and what kind of method was effective to eliminate it, and showed that the knowledge of physics was applied to the field that seemed to be less related to at a first glance.

The German speaker, Dr. Krüger (Max Planck Institute in Stuttgart), talked about the soft glass and explained the complex problem that was unique to the glass, such as, whether the glass is liquid or solid.

In the question and answer session, opinions were expressed and discussions were held that addressed the important points to the physics researchers in a well-balanced way from the researchers of the six disciplines. I myself enjoyed the session very much as a PGM to see many of the participants were participated in the discussion, as one of their aims of this session was to involve as many as possible. Moreover, we shared the knowledge of application of physics to our lives through its ideas and models.

After this session, we had a cultural tour program and explored the Park Sanssouci in two groups. We were also joined by tour guides. While learning about the history of Potsdam, we looked around the buildings in the palace park and reached at Krongut Bornstedt to have dinner. Were the participants aware of the fact that the planned route we walked along was about half of the whole palace park? Indeed, the Park Sanssouci occupied such a vast space.

During the cultural tour and dinner, the participants enjoyed the casual conversation beyond their field as if they relieved frustrations from being confined until then to the hotel for about one and a half days. After finishing our dinner and returning to the hotel, about a third of the members went out and continued to interact at the bar near the hotel. I learned a lot from Prof. Kakegawa, the FoS Symposium Advisory Board Member, and he quick showed us a good example of the international exchange.

Sunday, 9 October

Finally, it was the last day of the symposium. The challenging subject on “Machine Consciousness” was brought up in the Mathematics/ Informatics/ Engineering field in the morning session.

Dr. Shuntaro Yamazaki (Google Japan), the Japanese PGM, and Dr. Gabriele Peters, the German PGM, were in charge. Initially, we had three major concerns, as the topic field was not necessarily in a range of expertise of both PGMs.

First of all, was it possible for them to convincingly convey the scientific methodology of the study of consciousness that might not be defined accurately?

Second, were they able to answer properly when detailed questions were asked for they were not studying the ‘artificial consciousness’ as their research topic?

Thirdly, was it possible for them to manage a flow of discussion so that the question and answer session did not fall into the controversy surrounding the definitions or mere philosophical arguments? Fortunately, it all ended in groundless concerns.

At first, the introductory speaker, Dr. Hidaka (JAIST) introduced the history and methodology of research on consciousness, and highlighted the issue that needed to be analyzed both qualitatively and quantitatively.

Subsequently, the German speaker, Dr. Butz (University of Tuebingen) made a presentation on the language inference mechanism that studied consciousness from the qualitative aspect.

Finally, Dr. Oizumi (RIKEN) gave a presentation on the information integration theory of consciousness that worked as the methodology to measure the quantity of consciousness.

In the question and answer session, the questions were raised unceasingly, and they grasped the fundamentals from the cross-disciplinary approach, which was also

suiting to the essence of the FoS symposium.

The last session was Earth Science/ Geosciences/ Environment field entitled “The future of Ice”. The theme of this session was global warming, which was an important topic in both natural science and social science.

Drs. Tomohiro Usui and Thomas Laepple were in charge of the session as PGMs. Global warming was an issue of great attention in terms of the temperature rise in the near future and the influence on the global environment accompanying with it. With the concept of “Past is the key to the Future”, each presenter of the session eloquently described how the Earth Science was seriously studied to tackle global warming.

The introductory speaker, Dr. Iizuka (Hokkaido University), made a presentation on the feedback mechanism between each physicochemical element that determined the climate based on the restoration of paleo environmental conditions (temperature, CO<sub>2</sub> concentration, etc.) recorded in the ice core sample.

Prof. Obrochta (Akita University) talked about the sedimentary stratigraphy at the ocean floor to explain the impact on the large circulation of material and its environmental fluctuations on the global scale.

The German speaker, Dr. Weikusat (University of Tuebingen), presented a very ambitious study of giving a realistic and predictive value of the ice sheet runoff process from the aspects of experiment and theory under the hypothesis that proposed the outflow of the ice sheet to the ocean was an important factor that would determine the global environment.

In the following question and answer session, the most essential question concerning the future prospect was raised. The interesting thing was that the answers the presenters gave, including those of the PGMs, were all different. It was appropriate for the emerging science in the development stage and also for what the symposium aimed at.

In the meantime, the sessions of all six disciplines finished, and subsequently, the closing remarks were scheduled to be given by the PGM co-chairs. Actually, I started to take pictures from the first day and kept track of the points of presentations and interesting discussions during the sessions, for the preparation of the closing remarks. I felt pressurized all the time since I had been assigned to a PGM co-chair for this few minutes of offering greetings.

While preparing the slides of closing remarks with Dr. Yvonne, the German PGM co-chair, thanks to a variety of ideas and humorous photos she offered, we were soundly able to give remarks that offered the entertaining overview of this year's JGFoS. When I felt that the participants seemed to enjoy recalling the past three days of hard working, I was overwhelmed by the sense of fulfillment.

Although JGFoS was always preceded while encountering several accidents, fortunately, this year's symposium did not get into trouble. It might be accidental in a sense that it had finished without trouble. So much so that, some troubles seemed to happen every time the symposium was held.

The Planning Group Meeting that was usually held to select the session themes of the next symposium was not planned during the tenure. In my interpretation, it was because the next JGFoS is scheduled two years later in Kyoto. The next PGMs, the staffs of AvH and JSPS, and the JSPS FoS Symposium Advisory Board Members, might have enjoyed more relaxed time with this regard.

Following the greetings from the PGM co-chairs, Prof. Yuko Fujigaki, the JSPS FoS Symposium Advisory Board Member, and Dr. Katja Hartmann, Program Director of AvH, gave a speech of general review. In closing, all PGMs received the souvenirs from AvH and JSPS, and the official events were over.

Still in a lifted spirit, I enjoyed the farewell lunch. After lunch, we said farewell to the German participants. Most of the Japanese participants also traveled home that evening on an airplane from Berlin.

I am deeply grateful to Dr. Katja Hartmann, Program Director and Ms. Anke Teubner, Program Coordinator, and all the AvH staff who worked hard as a host country, from the preparation of the symposium to the arrangement of a bus to take us to the airport on the last day.

For me, it was a total of three participations for the JGFoS since Bremen two years ago as a general participant and a succeeding PGM, the last year in Kyoto as a PGM, and this year in Potsdam as a PGM co-chair. I had never experienced such degree of fulfillment elsewhere.

The experiences in planning session fields and cooperating with PGM partners and speakers beyond national boundaries for a year since the first PGM meeting (though the works must be done in limited occasions) will certainly be useful when carrying out future research activities, and, in particular, applying for international collaborative research projects.

Having built a network via the FoS with the PGMs of other fields is my lifetime asset. It will be delightful if a future Nobel Prize winner is fostered among a total of 180 Japanese and German researchers with whom I shared the JGFoS experience.

I decided to make serious effort on the FoS since the theme I recommended was not selected at the Planning Group Meeting in Bremen. I greatly regretted that I had not been able to communicate the advantages of the theme of my recommendation so as to gain the appreciation from other PGMs.

At the PGM meeting in Kyoto, I had to present three themes by myself because the German PGM could not attend unfortunately. After the heated one-hour discussion while we worked on only one field at this meeting, the theme I recommended was selected. I gained my revenge successfully. At the same time, I came to realize my love for FoS had grown within me.

I owe much to the five PGMs, Drs. Endo, Yamazaki, Usui, Hasegawa and Osada, who had worked together for a year and offered their generous support so that I was able to enjoy this year's JGFoS to the full. I would like to thank all of them who were cooperative all the time, since the start of the preparatory meeting to the production of this report to finish, and by providing the valuable opinions, advices and the summary of each session.

For the next PGM, Dr. Hasegawa and Dr. Osada, please create another successful record for the JGFoS history, along with the four new PGMs. I wish you very best for the next symposium in Kyoto that will be held two years later from now.

Once more, I worked with Dr. Yvonne Stahl, the German PGM co-chair, to chair the PGM meeting and prepare for the opening and closing remarks. I was able to complete the symposium because I was supported by her kindness, cooperation and creativity. I am proud to share the sense of accomplishment and fulfillment with her in having led the symposium successfully.

I would like to take this opportunity to thank the German PGMs, too. Also, I extend my sincere gratitude to the FoS Symposium Advisory Board Member for their valuable advice and, sometimes, strong encouragement.

Though my love for FoS is not much deep comparing to the Advisory Board Members, I heard that I and Dr. Endo will be assigned the PGM again. Therefore, I would like to foster my love for FoS in my own way. Again, thank you for giving me such valuable opportunities.

I thank Ms. Kawakami, Section Chief of Research Cooperation Division at JSPS, whose FoS-oriented love was fully transmitted to the participants, for the flawless preparation and support as usual, and Ms. Hayashida, who came from the same birthplace and also alumni of my university, for the arrangement of email communication before the symposium and photographing during its tenure. I asked her many things because of such intimacy. I thank from the bottom of my heart as well to Mr. Kanayama, who always stayed calm so as to generate the sense of security and Ms. Sasagawa, Head of the Research Cooperation Division at JSPS, who looked after the preparatory meeting.

I want to broaden the range of my research activities and work on for the future by understanding and practicing the FoS philosophy that aims to build a human network with a long-term perspective through the international as well as interdisciplinary exchange and collaboration centered on the specialized advanced science. I would like more young researchers to experience this sense of FoS-oriented love. I hope that the researchers who attended the FoS will lead the science of Japan and the world and contribute to the development of society.



Biology / Life Science



Chemistry / Materials Science



Social Sciences



Physics / Astrophysics



Mathematics / Informatics / Engineering



Earth Science / Geosciences / Environment



Cultural tour



Group photo