

JSPS Stockholm Newsletter

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Durability of Buildings - Difference between Japan and Sweden

Tadaharu Tsumoto, Director, JSPS Stockholm Office

Kyoto, a world-renowned tourist spot, is an old city which was founded in 794 A.C. by the Emperor Kanmu in Japan. Thus you may think that the large structures of Buddhist temples and Shinto shrines in Kyoto were built a very long time ago. However, if you check when the present structures were built, you might be surprised to know that they were built relatively recently. For example, the main hall of the Kiyomizu-dera Temple, a National Treasure of Japan, that is famous for its high stage standing at the cliff, was rebuilt in 1633. Another National Treasure, the Goeido (Founders Hall) of Hanganji Temple, that is well known for its gigantic piled roof (49×63 m, 30 m high), was rebuilt in 1636. The main hall of Chion-in Temple in the Higashiyama District of Kyoto, that is also known as having a gigantic roof, was built in 1639. The Kinkaku-ji, that is known as the Temple of Golden Pavilion and a target spot of tourists in Kyoto, was burned down in 1950 by a young monk, as well known from Yukio Mishima's novel, and then rebuilt with the same dimensions as before. I still have a vivid memory about this shocking news when I was an elementary school kid. Such a loss by fire of historically important structures is not rare in Japan at all. An extreme case is seen in the Onjo-ji Temple (or popularly called Mitsui-dera) in Otsu city near Kyoto. The building complex of this temple was destroyed by fire as frequently as 9 times from 1081 to 1319, and it was restored quickly each time. The present main hall of the Onjo-ji Temple was rebuilt in 1599 after another fire.

Such a short lifetime and quick rebuilding are seen not only in religiously or historically important structures in Japan. According to a short report in a recent newspaper, the main building of the Japan Railway Moji Port station, that is a National Important Cultural Property, will be renovated so as to recover its original shape that was made in 1914. This means that this National Important Property was built only about 100 years ago, but still is considered to be reserved as an important historical property in Japan. In my personal experience, I have a memory that a huge, elongated building of the Osaka University Hospital was re-built in 1964-1973 when I was a medical school student and a training physician after graduation. To our surprise, then this building was demolished around 1993, only about 20 years after the rebuilding, because of the movement of the medical school to the new campus of the university in the outskirts of the city. Other than such a large building, we often see that a private small house, which was built only tens of years ago, is demolished, and then a new house is built in many places in Japan. Such a frequent reconstruction of buildings may be a characteristic of the Japanese tradition and culture. For example, the Ise Shrine, located in the Ise-Shima area which is known as the venue of the 42nd G7 summit in 2016, carried out the Shikinen Sengu (literally

means the periodical translocation of the divine palace at a given interval of years) every twenty years since 690 A.C. Following the tradition of the Shikinen Sengu, a new divine building with the exactly same dimensions as the previous one is constructed at an alternate site, and the previous building will be taken apart and the wooden pieces are often re-used for construction or renovation of other shrines. There are many theories to explain why such an apparently wasteful event is periodically held every 20 years. Although I have not a good knowledge enough to explain these theories, it seems to me that Japan has the tradition or culture to remake a building or structure without hesitation when about 20 years have passed after its first construction.

In Sweden, on the other hand, buildings such as churches and apartments in big cities seem to be very durable and thus have a long lifetime. The basis and outer wall of these buildings are made of stones or bricks and seem to be resistant to fire, and thus fires seem to rarely take place. Also, Sweden has almost no earthquakes and rare heavy storms whereas Japan has frequent earthquakes and is hit by a few typhoons almost every year. In Sweden, it seems to take a very long time to construct buildings. A couple of weeks ago, I had a chance to visit the cathedral in Uppsala which is located about 70 km in the north of Stockholm. This gigantic structure is known as the largest cathedral in the northern Europe. When I visited this cathedral for the first time, I was moved by the overwhelmingly high tower. Subsequently, I learned that the construction of this cathedral started in 1287 and was completed in 1435-1445, i.e., 148-158 years after the initiation of the construction. In other words, it took about 150 years for completion. In Europe, in general, it is well known that the construction work of a large building or an edifice takes a long time. A good example for this is the Sagrada Familia in Barcelona; the construction started in 1882 and has not completed yet this year, i.e., 135 years later. I have heard, however, that it will be completed soon. Therefore, it is possible to say that the construction of the Uppsala Cathedral took longer time than the Sagrada Familia. It is to be noted, however, that the Uppsala Cathedral was heavily damaged by the great fire of Uppsala in 1702 so that the present form of the cathedral emerged after the substantial renovation. In any case, the long-lasting construction and the almost permanent usage of the building once it is completed are not uncommon in Sweden. Along the streets in Stockholm, one can often see schools and apartments that were built more than 200 years ago but still are actively used (naturally the insides seem to be renovated). It seems very rare for the buildings in Sweden to be rebuilt as frequently as in Japan.

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When I take a walk around my apartment, I often see buildings with signboards showing that they were built in the early 1800s which correspond to the late Edo period of Japan. In the Solna campus of Karolinska Institutet (Karolinska Medical University), where our JSPS Stockholm Office is located, the huge buildings of hospital are under construction and I see them growing day by day. According to the brochure published in May 2013, the plan to re-construct the hospital buildings was proposed in 2001 and formally decided to be re-built in the present place in 2008. When I arrived in Stockholm in April 2016 I saw that the buildings were under construction, and this construction work seems to continue almost endlessly until today. According to this brochure, the construction is scheduled to be completed within 2017. In my view as a non-expert, however, it would take a further long time to be completed. Nevertheless, a huge complex of glazed and sturdy buildings of the very modern style begun to show its shape. I expect that the really durable buildings resistant to snow and storm will be perfected in the near future.

As mentioned above, I am impressed by the difference in the durability of buildings and structures between Japan and Sweden. I think that such a difference may have some influences on the duration of an idea, scheme, plan or design of scientific projects. This is a very interesting and important issue when we think about scientific projects in particular in Japan. In this newsletter, however, no space for stating my opinion in detail is left in this prolog. So I would like to describe such an opinion in another chance, since I hope my consideration about this issue is durable and will not be lost so quickly.



The main hall of the Kiyomizu-dera Temple in Kyoto
(<https://pixabay.com/sv/tempel-japan-kyoto-japanese-1976543/>)



Uppsala Cathedral seen from afar
(https://pixabay.com/ja/photos/?image_type=&cat=&min_width=&min_height=&q=sweden+uppsala&order=popular)

The 5th Sweden-Japan Academic Network

On February 23, the Sweden-Japan Academic Network was held for the fifth time at the Royal Swedish Academy of Sciences (KVA). The Network opened with a welcome drink, which was followed by a video on different Japanese topics provided by the Embassy of Japan in Sweden. Then Prof. Göran K. Hansson, the Secretary General of KVA, held the opening remarks, which were followed by JSPS Stockholm Office Director Tsumoto's welcome remarks.

At the Sweden-Japan Academic Network, two keynote lectures were held. The first one was delivered by Prof. Susumu Kitagawa, Director of the Institute for Integrated Cell-Material Sciences, Kyoto University. The topic of the lecture was "Gas Science and Technology for Sustainable Future". Prof. Kitagawa talked about his research regarding nanochannels in porous coordination polymers that are desirable not only for precision synthesis of polymer materials, but also for exploring specific properties of polymer confinement. He also talked about how this can be used in the future for, for example, transporting gas effectively by using the empty spaces of porous materials.



Secretary General, Prof. Hansson delivering his opening remarks



Director Tsumoto offering his welcome remarks

The second keynote lecture was held by Prof. Lars Öhrström (who has provided a report on page 12) from the Department of Chemistry and Chemical Engineering, Chalmers University of Technology. The topic of the lecture was "Collaborating with Japan: a perspective from a personal, a chemical and an international organisation point of view". Prof. Öhrström talked about how he has been collaborating with Japan by visiting the country many times and having steady relationships with Japanese universities. He also talked about how he together with colleagues in Japan have been able to conduct joint research in his field chemistry. He also presented his engagement in the International Union of Pure and Applied Chemistry (IUPAC), which is the organisation that named the new elements of the periodic table, among which *nihonium* is one.

The two keynote lectures were followed with a Q&A session. The audience had many questions and were eager to know more.

Then followed mingling with some Swedish and Japanese food, during which the participants could mingle and network as well as continue asking the lecturers many questions.



Prof. Kitagawa during his lecture



Prof. Öhrström during his lecture

Nobel Prize Dialogue Tokyo 2017

On February 26, the Nobel Prize Dialogue Tokyo 2017 was held at Tokyo International Forum. The symposium was arranged by Nobel Media AB and JSPS, and is an event for the general public. It is connected to the Nobel Week Dialogue, which is held during the Nobel Week in Sweden every year. The theme of the Nobel Prize Dialogue Tokyo 2017 was “The future of Intelligence”, where previous Nobel laureates, scientists and other experts discussed artificial intelligence and human intelligence among other things. For example, Nobel laureates and intellectuals explored the human intelligence from various perspectives; frontline AI researchers introduced their pioneering work and discussed how these technologies will exert an influence on future society. The panel discussions, interviews and seminars were held in English, and the audience, which filled the venue, came from all over the world.



JSPS President Yuichiro Anzai during his opening speech



The Nobel Foundation's Executive Director Lars Heikensten during his opening speech

Japan-Denmark Workshop on Biomass Research

On March 8-9, the Japan-Denmark Workshop on Biomass Research was held at the Technical University of Denmark (DTU) Lyngby Campus. The workshop was jointly organized by the Danish Ministry of Higher Education and Science, DTU and JSPS Stockholm Office. Director Tsumoto and former Deputy Director Kawakubo participated in this event.

The workshop's goal was to present the current research within the biomass field that is being conducted jointly between Japan and Denmark, and to discuss how to target future efficient resources such as funding from external sources. During the workshop students held poster sessions presenting their work and research.

From Japan, 6 researchers from Hiroshima University and Gifu University participated, and from the Danish side, 5 researchers attended, and together they held lectures regarding biomass research.

Please find a report by Prof. Yukihiro Matsumura on page 11.



Director Tsumoto presenting JSPS' activities



Tour in the laboratories at DTU

Japan Alumni and Researcher Assembly 2017

On March 10, the Japan Alumni and Researcher Assembly 2017 was held at the Technical University of Denmark (DTU) Lyngby Campus. It was jointly organized by JSPS Stockholm Office, JSPS Alumni Club in Denmark (ACD), the Embassy of Japan in Denmark, Tokai University Alumni Association in Denmark and DTU Executive School of Business. The Japan Alumni and Researcher Assembly consisted of two sessions. The first was presentations and the second was a reception.

Following the opening remarks by H.E. Ambassador of Japan to Denmark Toshiro Suzuki, two keynote lectures were held. Prof. Masao Mizuno, Hokkaido University, held a lecture called “Ambition for research collaborations – Challenge in Japan after the study in Denmark”. Then, Assoc. Prof. Gunhild Borggreen, University of Copenhagen, held a lecture called “Research in Japan Robots and Contemporary Art”. Please find a report by Assoc. Prof. Borggreen on page 13.

The second session was opened by Director Tsumoto. Then Dr. Sam K. Steffensen, Chair of JSPS Alumni Club in Denmark, proposed a toast and then the networking session started. The participants could mingle over food and drinks and it was a successful event.



Prof. Mizuno during his lecture



ACD Chair Dr. Steffensen proposing a toast

Gathering for Japanese Researchers Held in Sweden

On March 24, a gathering for Japanese researchers living in Sweden was held at a restaurant in Stockholm. This gathering was arranged by JSPS Stockholm Office and the Embassy of Japan in Sweden. Around 30 researchers and graduate students participated. Former Deputy Director Kawakubo and former International Program Associates Nakakane and Kitajima informed the participants that their terms in office were to end and expressed their gratitude for everyone’s cooperation and help during their years in Sweden. As Deputy Director Yoshihara had just arrived in Sweden in time for this gathering, he presented himself to the participants. The participants were able to meet each other and everyone was engaging in discussions and exchanging information until the end of the gathering.



The participants at restaurant Hongkist

JSPS Summer Program Pre-Orientation Held in Stockholm

On April 25, JSPS Stockholm Office held a pre-orientation information day for the participants of this year's JSPS Summer Program. The pre-orientation was held in Stockholm at the Swedish Foundation for International Cooperation in Research and Higher Education (STINT). STINT is the nominating authority in Sweden for the JSPS Summer Program, and the purpose of this event was to inform and prepare the participants for their upcoming research stay in Japan.

The opening remarks were given by STINT Program Director Hans Pohl, followed by self-introductions of the participants. Then, Deputy Director Yoshihara informed about the necessary preparations prior to the JSPS Summer Program participants' departure to Japan. Three participants from the previous year participated and delivered presentations on their experience of the program. Director Tsumoto then presented JSPS Stockholm Office and its activities.

The pre-orientation ended with a following lunch, during which the participants discussed the daily life and research environment in Japan.



Group photo of the participants of the information day at STINT

Mission Incomplete: Reflating Japan's Economy

On May 3, the 71st Stockholm Seminar on Japan was held at Stockholm School of Economics. The Japan seminar series is jointly organized by the European Institute of Japanese Studies (EIJIS) at Stockholm School of Economics, the Asia Programme at the Swedish Institute of International Affairs, the Department of Asian, Middle Eastern and Turkish Studies at Stockholm University and the Swedish Defence University. This series features seminars every month on Japanese economy, politics and society. This time the seminar was organized in collaboration with JSPS Stockholm Office and the Embassy of Japan in Sweden. Prof. Sayuri Shirai, Keio University and former Bank of Japan Board Member, was invited to hold a lecture in Stockholm.

Director Tsumoto opened the seminar by offering his welcome remarks to Prof. Shirai and the audience, in which also H.E. Ambassador of Japan to Sweden Jun Yamazaki participated. Following the welcome remarks, Prof. Shirai held a lecture called "Mission Incomplete: Reflating Japan's Economy". She explained the theme with data and concrete examples so that the audience of around 30 participants were able to grasp the recent trends of the Japanese economy. After the presentation a discussion was held during which the eager participants asked many questions to Prof. Shirai.



Prof. Shirai during her lecture

SAC Joint Board Meeting and General Assembly

On February 23, the JSPS Alumni Club in Sweden (SAC) held a Joint Board Meeting and General Assembly at the Royal Swedish Academy of Sciences (KVA). They discussed the past FY2016 and what progress had been made. Dr. Joel Peterson, who held one of the two SAC Activity Seminars in FY2016, reported to the General Assembly how his seminar on paper yarn was. The seminar was held at the University of Borås and it was a big success with many participants and speakers. Following Dr. Peterson's presentation, the meeting participants discussed the applications for the SAC Activity Seminar FY2017. They also talked about the Activity Plan of FY2017 and announced the new members of the alumni club.



Dr. Peterson reporting on his SAC Activity Seminar

JSPS SAC Seminar Event

Following the JSPS Alumni Club in Sweden (SAC) Joint Board Meeting and General Assembly, the JSPS SAC Seminar Event was held also at the Royal Swedish Academy of Sciences (KVA) on February 23. JSPS SAC Board Members Dr. Elin Palm and Prof. Lars Öhrström had invited several speakers coming from both Japan and Sweden for this event. The theme was "Future collaborations Sweden-Japan: towards sustainable societies and environments". Dr. Palm opened the event, and Director Tsumoto offered the welcome address. Prof. Susumu Kitagawa from Kyoto University held a lecture during the first session, chaired by Prof. Öhrström, called "Welcome to Small Spaces – Science of 'Usefulness of Useless'", where he presented his research on how to use the empty spaces in porous materials to, for example, carry other materials such as gases. Following Prof. Kitagawa's lecture, several shorter presentations were held. Prof. Kitagawa also held a one of the two keynote lectures at the Sweden-Japan Academic Network (see page 4).

Dr. Andrew Kentaro Inge, Stockholm University, held a presentation called "Bismuth Coordination Polymers: From Centuries-old Medicines to Topological Monstrosities". Assoc. Prof. Yuki Hasegawa, Saitama University and Linköping University, held a presentation called "Apple sensing with Applsens group in Sweden".



Director Tsumoto offering his welcome remarks



Prof. Kitagawa during his lecture

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The second session followed a short coffee break and was chaired by Dr. Palm. The session started with a presentation by Prof. Helena Filipsson, Lund University, called “How micropaleontologists in Sweden and Japan started to DISCO”, followed by a presentation called “Paper yarn textiles for the fashion industry” held by Dr. Joel Peterson, the University of Borås. The final presentation “From wood tissue to defined nano structures” was delivered by Dr. Merima Hasani, Chalmers University of Technology. SAC Chair Prof. Göran Thor from the Swedish University of Agricultural Sciences closed the event and talked about how the important collaboration between Sweden and Japan could be seen during all the presentations. After each presentation, a short Q&A followed. Due to the limited time, all questions from the eager participants couldn’t be answered, however, the following Sweden-Japan Academic Network with its mingling and networking session took care of this.

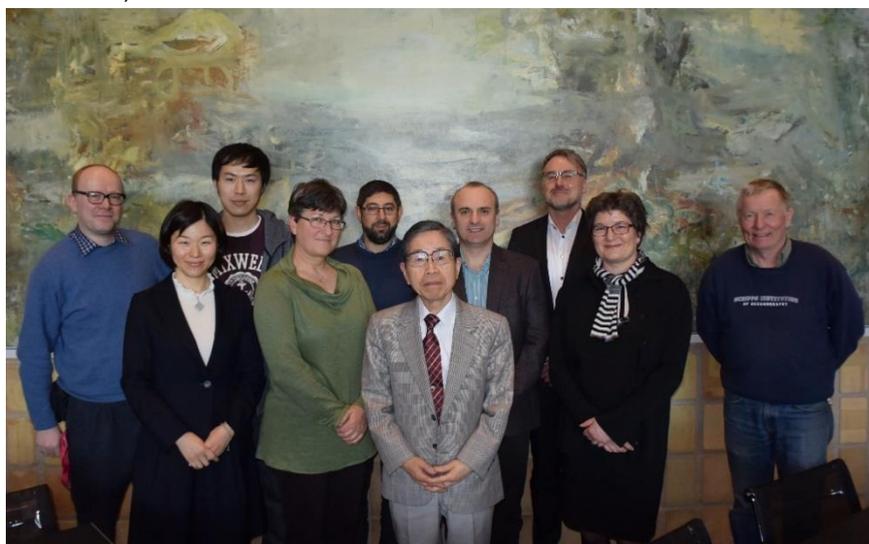
For a report on the SAC Seminar Event written by Prof. Öhrström, please see page 12.

ACF Board Meeting

On March 8, the JSPS Alumni Club in Finland (ACF) held a board meeting at the University of Helsinki. Parts of the participants attended online. The board discussed the newly income member applications, the BRIDGE fellowship application and the Activity Seminar of FY2017. The ACF Board also thanked former Deputy Director Kawakubo for her time in office, since this was her last board meeting to attend.

ACD General Assembly

On March 10, the JSPS Alumni Club in Denmark (ACD) held its General Assembly at the Technical University of Denmark, DTU Lyngby Campus. The participants discussed the FY2016 report, during which Prof. Carl Winsløw, University of Copenhagen, presented his recent stay in Japan through the BRIDGE fellowship program. Please find his report on page 18. They also talked about the upcoming Activity Plan of FY2017 and selected a new board member since Dr. Michael Arvedlund decided to end his board membership. JSPS Stockholm Office would like to thank Dr. Arvedlund for all his work and wishes him the best of luck in the future. The new ACD board member who was elected was Dr. Jacob Kreutzfeldt. Then, the board announced the new Alumni Club members.



The participants of the ACD General Assembly

ACD Board Meeting

On March 22, JSPS Alumni Club in Denmark (ACD) held a board meeting online where they discussed the Activity Plan FY2017 and other things such as the administrative roles of the board and JSPS Stockholm Office.

My Journey to Japan

Anders Øverby, PhD, Høgskolesenteret i Kongsvinger

As a part of a new initiative in Norway by Japan Society for the Promotion of Science (JSPS) and the Research Council of Norway (RCN), I was invited to hold a presentation about my experiences from Japan at a meeting held at RCN in Oslo. This would be the first meeting arranged by JSPS and RCN in Norway, and the meeting inspired to generate a JSPS Alumni Club in Norway, as well as making a platform for Norwegian researchers with similar experiences with working in Japan or Japanese researchers in Norway to exchange stories, ideas and network. I was extremely honored to be among the two to hold a presentation at this event, and I want to direct my sincere gratitude to Professor Emeritus Tadaharu Tsumoto, Director of JSPS Stockholm Office, and Ms. Julie Christiansen, Senior Advisor at RCN, for the invitation.

My journey to Japan began in 2012 when I was awarded a minor grant from the Scandinavia-Japan Sasakawa Foundation (SJSF) to attend a conference in Tokyo that summer. I stayed there for 12 days during which I presented a poster, met many Japanese researchers and professors, and managed to get a taste of the Japanese culture. Due to the relevance for my research field, gastric cancer and prevention of it, and my growing interest into the Japanese culture, I decided to return and to initiate a collaboration research project with a Japanese group. While preparing, I attended two Japanese language courses at the Norwegian University of Science and Technology (NTNU) in Trondheim. I ended up being invited by Associate Professor Dr. Masahiko Nakamura from Kitasato University School of Pharmacy in Tokyo, for a 3-month stay starting from July 2013. At this time I also received a grant from SJSF. The stay was very successful both regarding the research, and the chemistry I had with my supervisor there. Based on that, we extended the stay until September following year, 2014, which would in total be the last year of my PhD.

While finalizing my PhD, we decided to apply for RCN and JSPS for a 2-year post-doctoral grant, which we were granted. This started right after the PhD ended, and it went until October, 2016. The research topic shifted more towards bacterial infection in relation to gastric cancer, thus using my knowledge from my education and previous working experience as a researcher in a Norwegian company in industrial biotechnology. We achieved several things, including media coverage in Japanese major newspapers: Yomiuri Shinbun and Sankei Shinbun, major medical magazines: Medical Tribune and Nikkei Medical, publications, and presentations at several national and international conferences. We felt very fortunate with our project, and very happy to be able to conduct research that could have a direct impact on human lives. During the stay, we also had two students from NTNU who visited our lab for two months in 2015 and 2016, and they both were supported by grants from SJSF.

At the end of the post-doctoral period, we organized a meeting between Kitasato University and NTNU held at the Royal Norwegian Embassy in Tokyo. Kitasato University was represented by several people including President Hirotsugu Kobayashi, and NTNU was represented by the Dean of the Medical Faculty Björn Gustafsson. The meeting focused on building bridges with the intention of making the recent Nobel Prize winning institutions sister universities. During the meeting, we also discovered that the founder of Kitasato University received a very honorable award from the Norwegian King more than 100 years ago, showing that our bonds preceded our meeting by far. The formalities of the sisterhood were finalized shortly after the meeting, and will lay a new foundation for future research collaborations in medicine and pharmacy between the universities.

After returning to Norway at the end of 2016, I still continue to work with Japan-Norway collaboration projects. For instance, we have started an exchange program from nurse students between Kitasato University Sagami-hara Campus and the Inland Norway University of Applied Sciences.

I think the grant I received from JSPS has been essential in most of the successful projects that we created between Japan and Norway. It made it possible for the research between two research labs to flourish, Kitasato University and NTNU became sister universities, several spin-off projects are currently being developed, and life-long friendships have been made.

Based on these experiences, I will further promote the research collaboration and continue to build bridges between Japan and Norway.



Dr. Øverby during his lecture

2017 Japan-Denmark Workshop on Biomass Research

Yukihiko Matsumura, Professor, Graduate School of Engineering, Hiroshima University

Biomass is organic compounds produced by activities of living creatures that can be used as energy or materials. It is a renewable resource, and since it is originated from photosynthesis, it is carbon neutral. This is why biomass is attracting attention to be substitute for fossil fuel. Its utilization has been strategically proceeded in Japan, too, through various policies including Biomass Nippon Strategy, Renewable Portfolio Standard, introduction of bioethanol and Feed-in tariff. Research on biomass related technology has also been developed along with this movement.

Then, there was a call from Denmark, asking for holding a workshop on collaborative work in the field of renewable energy including biomass. With Dr. Shin-ya Yokoyama in charge of biomass field, the workshop was held in Hakata on Dec. 10-12, 2012 together with the field of smart community and wind turbine. Following the workshop, researchers in the field of biomass have continuously organized workshops. The 2nd workshop was held on Sep. 11-12, 2014 in Aalborg, Aarhus, and Odense in Denmark, and the 3rd workshop was held on Sep. 15-16, 2015 in Hiroshima, Japan.

This year, the 4th workshop was held in Lyngby, Denmark. Prof. Irini Angelidaki, Technical University of Denmark, offered to host this workshop at the previous workshop in Hiroshima, and after adjustment of related members' availability, the workshop was held on Mar. 8-9, 2017. Because it was the end of the fiscal year in Japan, only 5 researchers from Hiroshima University and 1 researcher from Gifu University attended from Japan. About 20 researchers joined from Denmark. We had a good and productive discussion there.

On the first day and the morning of the second day, each researcher presented his/her research progress. From both sides, presentations to deepen the academic knowledge related to biomass utilization were given. From the laboratory of Prof. Angelidaki, research activity on electro-biochemistry including biofuel cell, and its application to water electrolysis and desalination of sea water were presented. De-novo assembly to re-organize the microorganism in the methane fermentation reactor from metagenome result of the sludge was also presented from her laboratory. Prof. Felby, University of Copenhagen, presented the research to use light-driven enzymes. These presentations were to extend the possibility of biomass utilization using new approach and interesting. From the Japanese side, Prof. Nakashimada, Hiroshima University, presented methane fermentation of radioactive biomass so that radioactivity could be concentrated into solid sludge, while radiation free methane gas is obtained as energy. From my laboratory, Assoc. Prof. Inoue presented the novel technology to analyze intermediate of the reactions of biomass decomposition in hot compressed water using mass spectrometry. I myself presented the effect of heating rate on biomass reaction in hot compressed water. From the conventional reaction model, heating rate should not affect the reaction product distribution, but heating rate actually affected the product, and its mechanism was explained. Other than the presentations shown here, introduction of various researches was made, so that mutual understanding was deepened.

On the second day, laboratory tour of Prof. Angelidaki and discussion on collaborative research were made. Ms. Bausager, Danish Ministry of Higher Education and Science had introduced "International Network Programme", that may be used for traveling of Danish researchers to visit Japan for the next workshop. Dr. Tsumoto, Director of Japan Society for the Promotion of Science (JSPS) Stockholm Office, introduced the program that can be used to send students and researchers from Danish Universities to Japan. We decided to maintain the framework of this collaborative project, making the best of these useful programs provided by Japanese and Danish governments. We also decided that we should not be waiting for the budget to be approved, but start from small projects that can be covered by the fundamental research budget of each researcher to publish co-authored papers, while applying for the competitive research budget.

It was also pointed out that we have to keep reminded about this project. Each researcher is busy with researches inside his/her country, but even when he/she is busy, quick and prompt response is sometimes very important for this kind of activity. For this purpose, small magnets with Japanese design were given to Danish main researchers from Japan. It is supposed that the magnet is placed on the researcher's desk so that he/she is reminded of this project. The next workshop will be hosted by Prof. Itaya, Gifu University, Japan.

For organization of this workshop, we owe a lot to Dr. Tadaharu Tsumoto, and Ms. Yuriko Kawakubo from JSPS Stockholm. Also, the workshop should not have been such a fruitful time without perfect arrangement and hospitality of Danish researchers. I would like to appreciate their effort and contribution at the end of this manuscript.

Alumni Club Meeting and Sweden-Japan Networking Event in February

Lars Öhrström, Professor, Chalmers University of Technology

On February 23rd, the JSPS Alumni Club in Sweden (SAC) held its annual meeting at the Royal Swedish Academy of Sciences (KVA), Stockholm, with a subsequent open seminar event with the theme *Future collaborations Sweden – Japan: towards sustainable societies and environments*. In a lively and highly visual keynote lecture, Prof. Susumu Kitagawa, Kyoto University, highlighted the important advances in green chemistry that can be made using metal-organic frameworks and porous coordination polymers, especially concerning gas technology. The title of his lecture was *Welcome to Small Spaces – Science of "Usefulness of Useless"*. Then, Dr. Andrew Kentaro Inge from Stockholm University talked about *Bismuth Coordination Polymers: From Centuries-old Medicines to Topological Monstrosities*. He gave us a more detailed account of these materials and how we study them, with emphasis on diffraction methods. Then, he also very pedagogically demonstrated these methods using a laser light and a perforated piece of paper. The first session was concluded by Assoc. Prof. Yuki Hasegawa, Saitama University and currently guest professor at Linköping University, who enlightened us about electrical engineering and its role in analytical chemistry: *Apple sensing with Applsens group in Sweden*.

After a short break, Prof. Helena Filipsson, Lund University, took us out and into the sea and told us about *How micropaleontologists in Sweden and Japan started to DISCO*, an engaging talk with an environmental emphasis. Then SAC board member Dr. Joel Peterson, University of Borås, told us about *Paper yarn textiles for the fashion industry* and Dr. Merima Hasani, Chalmers University of Technology, went even deeper into the structure and science of cellulose in the final talk of the seminar event *From wood tissue to defined nano-structures*.

SAC Chair Prof. Göran Thor, Swedish University of Agricultural Sciences, then gave some closing remarks, echoing the positive welcoming address of Dr. Tadaharu Tsumoto, Director of JSPS Stockholm Office, and the opening remarks by SAC board member and co-convenor Dr. Elin Palm, Linköping University.

It was also instructive to hear all participants talk about their relations to Sweden and Japan and how these bilateral collaborations came to be. This was also a good introduction for us who stayed on for the evening's much larger event; *The 5th Sweden-Japan Academic Network*, organized by the Royal Swedish Academy of Sciences (KVA), the Embassy of Japan in Sweden and the JSPS Stockholm Office.

After welcoming drinks, mingling and an interesting video with Japanese topics, Prof. Göran K. Hansson, Secretary General of the Royal Swedish Academy of Sciences (KVA), gave some introductory remarks followed by Dr. Tadaharu Tsumoto. Then there were two keynote lectures: Prof. Susumu Kitagawa, Kyoto University, on *Gas Science and Technology for Sustainable Future*, and Prof. Lars Öhrström, Chalmers University of Technology on *Collaborating with Japan: a perspective from a personal, a chemical and an international organisation point of view*. The following Q&A session with the speakers span from pure scientific questions to issues of how to work in different cultures, where the speakers emphasised the need to avoid assuming national clichés and being curious about "the other" as keys for success.

After the formal session, welcome remarks and a toast were given by H.E. Ambassador of Japan to Sweden Jun Yamazaki. The following networking was both tasty in terms of Japanese food and highly rewarding because of the variety of subjects represented and the enquiring and curious minds that represented them. An event surely not to be missed when it will be organised again in 2018!



Prof. Öhrström during his presentation at the Sweden-Japan Academic Network

Report from Japan Alumni and Researcher Assembly 2017 in Denmark

Gunhild Borggreen, Associate Professor, University of Copenhagen

The Japan Alumni and Researcher Assembly 2017 was held on a beautiful spring day March 10, 2017, at the excellent facilities of the Technical University of Denmark (DTU). The event was organised by two of the Japanese alumni associations in Denmark, namely the new Japan Society for the Promotion of Science (JSPS) Alumni Club in Denmark and the Tokai University Alumni Association in Denmark, as well the Embassy of Japan in Denmark, the JSPS Stockholm Office, and the DTU Executive School of Business. About 50 people attended the assembly.

H.E. Ambassador of Japan to Denmark Toshiro Suzuki opened the event by emphasizing the relationship between Japan and Denmark in his speech. 2017 marks the 150 years anniversary for the diplomatic relationship between the two countries, and numerous cultural events and research gatherings such as this assembly will take place throughout the year in order to highlight the history of bilateral exchange and point out the trajectories for future collaboration.

The two research presentations that followed the speech of the Ambassador also focused on the mutual exchange and collaboration between research institutions and scientists in Japan and Denmark.

The first speaker was Prof. Masao Mizuno from Hokkaido University. Prof. Mizuno reported on his research on dairy products that he executed in collaboration with Danish scientists during two extended research stays in Denmark, first as an instructor at the Faculty of Health and Medical Sciences at the University of Copenhagen, and later as Director of the Research Unit at the Ribe County Hospital in Denmark, before assuming his current post as Professor at Hokkaido University. Prof. Mizuno specializes in muscle physiology and physical fitness sciences, and extends his interest into the fields of fitness, sports and exercise as lifestyle factors. For the presentation, Prof. Mizuno explained a number of scientific experiments on the importance of postexercise protein intake concerning muscle hypertrophy. In short: if you drink cow milk immediately after exercising, your muscles will build up faster and your body will feel less fatigue.

The second speaker was me, Assoc. Prof. Gunhild Borggreen from University of Copenhagen. I presented three examples of my research collaborations in Japan over more than two decades concerning the issues of robots and contemporary visual art. My collaborations in Japan include Gakushūin University, Osaka City University, and Tokyo University of the Arts. The overall theme of my research in Japan focuses on how contemporary artists include elements of social and cultural aspects in their works of art, including representations of robots. In recent years there has been a boom in socially engaged art in Japan, in which local residents participate in art projects, such project like Echigo-Tsumari Art Triennale or Benesse Art site Naoshima.

After the two research presentations Dr. Tadaharu Tsumoto, Director of JSPS Stockholm Office, presented the activities of JSPS as Japan's core research funding agency that supports the advancement of scientific research in all fields. This talk was followed by Mr. Jakob Skyt Jensen, who gave a brief outline of alumni activities at the Tokai University Alumni Association.

A generous reception with delicious snacks and drinks in the sunlit lobby completed the event. Mr. Sam K. Steffensen, Program Director at DTU Executive School of Business, who also acts as the Chair of Tokai University Alumni Association as well as the JSPS Alumni Club in Denmark, gave a toast. By representing the two major Japanese alumni associations in Denmark, Mr. Steffensen summed up the current high level of activities in research collaborations between Japan and Denmark.



Assoc. Prof. Borggreen during her lecture

JSPS BRIDGE Fellowship Research Report (SAC)

Petr Dejmek, Professor Emeritus, Department of Food Technology and Nutrition, Lund University

I am emeritus professor of Food Engineering at Lund University. Food engineering is the field of research creating the knowledge that is behind the machines that bake your bread, extrude and dry your noodles, press out juice from oranges, concentrate the juice and freeze it, or make your beer. I became fascinated with Japan on a business trip for a Swedish food engineering company in the 1970s, and some years later I was delighted when at a conference Prof. Miyawaki, the University of Tokyo, offered me the opportunity of a sabbatical at the University of Tokyo. Thanks to JSPS I was able to maintain contact with Japan, with Prof. Miyawaki and lately with Prof. Nakajima at University of Tsukuba and the National Food Research Institute (NFRI), a group with which I share common interest in new ways of forming and stabilizing food emulsions (mayonnaise and butter are emulsions). Our institution, the Department of Food Technology and Nutrition, which is fairly prominent in food research in Sweden, hosted and hosts JSPS sponsored researchers from NFRI and other institutions I have connected with during my previous stays in Japan, such as Mie University and Fukuoka University. The Tsukuba group is one of the world leaders in microchannel emulsification, a deceptively simple concept of pressing oil through an array of (very) small holes - but the devil is in the detail. Our group pioneered the use of small starch grains as the stabilizing agents in emulsions, and the goal of the joint research is to marry the two concepts. This time in Tsukuba I did some interesting experiments with less common starches, quinoa and kudzu, together with one of the local PhD students, with some good outcomes, but I have to admit that the student's experiments worked better than the professor's.

University of Tsukuba and NFRI feel almost as being home, but fortunately, I was also given the opportunity and time to create new professional contacts at Hokkaido University and Rakuno Gakuen University in Sapporo, on the first ever visit to Hokkaido.

For many foreigners, Japan is the country of Shinkansen, busy cities and fascinating castles, temples and shrines, museums, sumo and kabuki. Together with my wife who also has professional relations with Japanese researchers, in the field of medicine, we have of course enjoyed all of these, but we have also had the opportunity to see a less known face of Japan, the onsen hot springs and the nature. It is fascinating to see how Japanese people of all ages appreciate nature, we saw young couples, families with children and groups of very senior pensioners climbing the steep mountain paths (and saying *Ganbatte!*, 'good luck! or work hard!', when they pass us). Unfortunately, we were not able to repeat the climb of Mt Fuji this time, but the magnificent nature of Hokkaido, in particular the views of lake Toya and its active volcano, and of Daisetsuzan compensated well for that.

Fate allowing, we will be back soon.

Host Institution in Japan: University of Tsukuba, Faculty of Life and Environmental Sciences
Host researcher: Prof. Mitsutoshi Nakajima
Fellowship period: 2016.09.01-2016.10.15



Group photo with the Advanced Food Technology Laboratory at NFRI



Prof. Dejmek delivering a lecture at Rakuno Gakuen University



Prof. Dejmek at Mt Usu



Prof. Dejmek in Daisetsuzan National Park

JSPS BRIDGE Fellowship Research Report (SAC)

Miquel Pericàs, Professor, Department of Computer Science and Engineering, Chalmers University of Technology

Modern computer systems are built from chips incorporating multiple processors, so-called “multicores”. This approach is designed to reduce the extreme heat generated by previous methods that mainly focused on large processors and high operating frequencies. However, the effective exploitation of multicore computers requires software specifically designed to handle multiple processors. Despite decades of research, questions on how to program multicore computers in an easy way,

how to achieve energy efficiency, and how to ensure that software will run efficiently on diverse platforms remain unsolved. One approach to these problems is to coordinate the hardware and software via a resource management subsystem called a “runtime system”. At Chalmers we are currently working on XiTAO, a runtime system that focuses on constructive sharing of resource such as cores and caches, and reduction of the costly data messages exchanged between processors.

Parallel computers composed of multicore chips are ubiquitous in computational science. The Fast Multipole Method (FMM) is a common algorithm for simulating the evolution of multiple-body systems such as molecules or galaxies. Prof. Rio Yokota from the Tokyo Institute of Technology is an expert in the FMM algorithm, and he is the developer of the exaFMM code, an FMM implementation that targets extreme scalability. During this JSPS BRIDGE fellowship I visited Prof. Yokota's laboratory in Tokyo to jointly work on a new version of exaFMM targeting our XiTAO platform. The visit has allowed us to further deepen our understanding of each other's work, and to develop initial strategies to execute a combined exaFMM+XiTAO on a high performance multicore platform based on the Intel Knights Landing processor.

The JSPS BRIDGE fellowship also supported several institutional visits during which I presented our team's research on parallel computer architectures and runtime systems to my colleagues in Japan. These visits included the University of Tokyo (Prof. Kenjiro Taura), the RIKEN Advanced Institute for Computational Science located in Kobe (Dr. Naoya Maruyama) and the Matsuoka Laboratory, also at the Tokyo Institute of Technology (Prof. Satoshi Matsuoka). As a result of these visits, further collaborations and plans for future exchanges have been developed.

Simulation and data analytics have become a cornerstone of modern science. With its excellent supercomputing infrastructure and current plans towards exascale, Japan is well equipped for scientific excellence into the next decade. I look forward to many years of fruitful collaborations in this exciting field of research!

I want to thank JSPS for this unique opportunity to travel back to Japan and reconnect with the many colleagues and friends I met during my JSPS postdoctoral fellowship from 2012-2014. I want to thank also Prof. Yokota and his students for hosting me and for the many research discussions and social events. Despite a busy agenda, I was also able to spend time with my old friends, enjoy delicious washoku and hike in the Chichibu-Tama-Kai National Park, a real treasure so close to Tokyo!

Host Institution in Japan: Tokyo Institute of Technology

Host researcher: Prof. Rio Yokota

Title of research in Japan: “Development of a scalable N-Body simulator on the XiTAO platform”

Fellowship period: 2016.11.23-2016.12.07



Prof. Miquel Pericàs in Mitake-san

JSPS BRIDGE Fellowship Research Report (ACF)

Elina Oksanen, Professor, Department of Environmental and Biological Sciences, University of Eastern Finland

My research focus is mainly on impacts of environmental change on forest trees. During my research career I have been working on many globally important environmental factors, such as increasing tropospheric ozone, carbon dioxide, warming climate and changes in precipitation, that cause harmful effects on forest trees and modify the function and structure of ecosystems. Besides the plant stress research, I have also established an innovative Spectromics laboratory (www.spectromics.org), where we develop novel imaging techniques for biological materials, including plants exposed to different abiotic and biotic stress factors. During the Bridge Fellowship I was re-visiting Tokyo University of Agriculture and Technology (TUAT), which is very active in environmental stress research. I also visited Saitama University, where optical methods are combined with plant stress research.

At TUAT, we discussed our recent and ongoing research projects at both institutes, possible new collaborations in climate change research and researcher exchange. The students of TUAT organized a seminar, where they were able to present and discuss their studies in English. I gave lectures about my research activities, e.g. recent ozone research project in India, molecular studies with ozone-stressed plants, impact of high humidity on plants, and application of novel imaging techniques in plant stress and environmental research in novel spectral imaging laboratory at UEF.

Host Institution in Japan: Tokyo University of Agriculture and Technology (TUAT)

Host researcher: Prof. Takeshi Izuta

Title of research in Japan: “Impact of environmental change and air pollution on plants”

Fellowship period: 2017.01.17-2017.02.01



A group photo at TUAT, together with the students and the host Prof. Takeshi Izuta. Prof. Elina Oksanen in the middle (red scarf)



Seminar with students at TUAT

(Continuing on the next page)

(Continuing from the previous page)

A field trip was done to Field Museum Tamakyuryo (Experimental station) of TUAT. The site has important infrastructure for air quality monitoring, ecological research and also ozone fumigation chambers. The site is also important for student training.



Climbing to air quality monitoring tower in the field station

A visit was done also to Blueberry Factory at TUAT. In this facility, year-round cultivation technologies are being developed for blueberries, strawberries and other fruit plants. Technologies are also being developed for automated harvesting, plant health monitoring, and non-invasive quality monitoring of fruits and berries.

At Optical Sensing Laboratory in Saitama University, Prof. Kadono and his research group told me about their laboratory, which has very sensitive nanometric optical interferometric techniques developed for plant growth measurement and environmental monitoring. We organized a seminar with the students and researchers of Saitama University and a visit to the Centre for Environmental Science (CESS). At CESS, there are excellent facilities for high-quality environmental monitoring and research, including atmosphere, soil, water systems and whole ecosystems. They also have special infrastructures for plant exposures (several kinds of growth chambers) and acoustic research (anechoic room).

The most important outcome of this BRIDGE Fellowship was the transfer of new knowledge between the researchers and changing ideas in environmental research. Ozone is the most important air pollutant in Japan, and more research is still needed to understand the mechanisms and interactions with other environmental factors such as climate warming and nitrogen availability. Potential applications of novel hyperspectral imaging systems were discussed, relating to environmental plant stress problems in Japan. The outcomes of the fellowship will promote sustainable development in several ways, for example, by increasing awareness on environmental problems in different parts of the globe and related strategies for climate change mitigation, by attempts to increase food security through tolerant cultivars, by more intense monitoring of air pollutants causing climate change, and by education.

JSPS BRIDGE Fellowship Research Report (ACD)

Carl Winsløw, Professor, Department of Science Education, University of Copenhagen

In 1994, I graduated as a PhD in pure mathematics from the University of Tokyo. After returning to Denmark, I became gradually interested in a special area of Applied mathematics, called Didactics of Mathematics, which investigates the conditions and constraints of mathematics as a topic for teaching at any level. Around 2000, during a visit to Japan (financed by the JSPS), I had the occasion

to visit the mathematics teacher education programme at Ochanomizu University in Japan, and experienced first hand the phenomenon of “lesson study” in mathematics. Around the same time, “The teaching Gap” (a book written by Stigler and Stevens) was published in the US and made lesson study world famous. Since then, I have been engaged in research on lesson study related research in mathematics, and dissemination of the phenomenon both in Denmark and in the French speaking world. And several visits back to Japan have helped sustaining this interest both with occasions for field visits to schools and other venues for lesson study activity, and with a variety of collaborations with Japanese colleagues, especially Dr. Miyakawa that I was also visiting during my tenure of the BRIDGE fellowship in 2017.

Previously, Dr. Miyakawa and I have published three papers in major international journals, and this time we finished the manuscript of a fourth, now submitted to one of the best international journals in Didactics of Mathematics. The topic of the paper is not lesson study in mathematics but the “infrastructure” around it - in short, the variety of factors, resources, institutions and venues which nurture, sustain and draw on lesson study activities of Japanese mathematics teachers. The motivation for investigating these infrastructures is that while lesson study is a common form of professional development in Japan, attempts to import and adapt it to other countries have so far been only partly viable. The formal, outward procedures of a lesson study may indeed be carried out with different experiences of the outcome, depending on the quality and novelty of didactic designs which the teachers achieve. While Japanese mathematics teachers may draw on - and disseminate in - specialized media and conferences, and lesson study is just one element in a whole system which allows their knowledge on school mathematics and its teaching to grow.

Besides working on this paper, I had the occasion to carry out a field visit for two days (Feb. 15-16) to experience the first experiments ever in Japan with “study and research paths”. It took place at a junior high school mathematics classrooms in Ōta (Gunma Prefecture), and was carried out by a masters student of Dr. Miyakawa. I was also invited to give a key note lecture at the APEC-Tsukuba conference “Innovation of Mathematics Education through Lesson Study”. This international conference was held at the Tokyo Campus of the University of Tsukuba from Feb. 9 to Feb. 12, with participants from Canada, USA, Russia, and most countries in Asia. Finally, I gave a seminar talk at Joetsu University of Education on Feb. 22 and participated in different local seminars during my stay.

Host Institution in Japan: Joetsu University of Education, Department of Mathematics

Host Researcher: Assoc. Prof. Takeshi Miyakawa

Title of research in Japan: “Paradidactic infrastructure for Japanese School Mathematics”

Fellowship period: 2017.02.09-2017.03.02



Field visit to school in Ōta (Gunma Prefecture)



Joetsu has a lot of snow in February



The host institution had nicely decorated the door of the guest office...



Keynote lecture at APEC-Tsukuba conference in Tokyo, Feb. 10

2017.02.16

Visit by JSPS Bonn Office Director Prof. Keiichi Kodaira

JSPS Bonn Office Director Prof. Keiichi Kodaira visited JSPS Stockholm Office and informed about this year's JANET Forum 2017, such as the stage of its preparations, the homepage and the other organizing institutions etc. Director Tsumoto and former Deputy Director Kawakubo expressed their opinions on the upcoming events. Then, they exchanged information and opinions on the situation of the local academic exchanges and alumni clubs that were relevant to the two JSPS liaison offices.



Former Deputy Director Kawakubo, Director Tsumoto and JSPS Bonn Office Director Kodaira

2017.03.23

Visit to the Embassy of Japan in Sweden

Staff from JSPS Stockholm Office visited the Embassy of Japan in Sweden and met with H.E. Ambassador Jun Yamazaki. Former Deputy Director Kawakubo, and former International Program Associates Nakakane and Kitajima expressed their gratitude for the support and cooperation from the Embassy of Japan, and informed that they are leaving Sweden in order to return to Japan. Currently arrived Deputy Director Yoshihara introduced himself to the staff at the Embassy.



Mr. Nakakane, Ms. Kawakubo, H.E. Ambassador Yamazaki, Deputy Director Yoshihara and Ms. Kitajima

2017.04.11

Visit by former Swedish Ambassador Stefan Noreén

Former Swedish Ambassador to Japan Stefan Noreén, currently Senior Adviser to the Minister for EU Affairs and Trade at the Foreign Ministry of Sweden visited JSPS Stockholm Office to meet with Director Tsumoto and Deputy Director Yoshihara. They discussed the upcoming 150 anniversary of diplomatic relations between Sweden and Japan, the Nobel Prize Dialogue and some upcoming projects between Japan and Sweden.

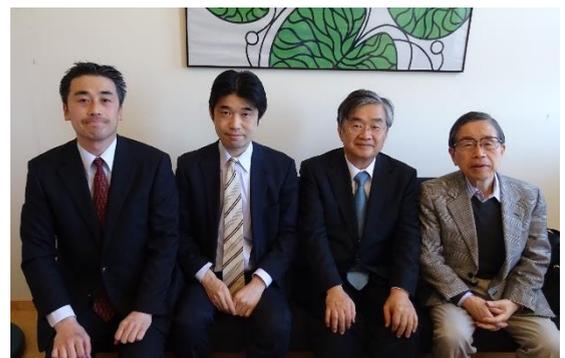


International Program Associate Okamoto, Deputy Director Yoshihara, former Ambassador Noreén, Director Tsumoto and International Program Associate Yamashita

2017.05.03

Visit by Prof. Kohei Miyazono

Prof. Kohei Miyazono, Dean of the Graduate School of Medicine and Faculty of Medicine at the University of Tokyo visited JSPS Stockholm Office and met Director Tsumoto, Deputy Director Yoshihara and Mr. Sato, First Secretary at the Embassy of Japan in Sweden. He came to discuss the Sweden-Japan Academic Forum which is planned to be held in September this year. This planned symposium will be held to celebrate the 150 years' anniversary of diplomatic relations between Sweden and Japan. It is planned to be co-organized by the University of Tokyo, Stockholm University, KTH Royal Institute of Technology, Karolinska Institutet and JSPS Stockholm Office. During the meeting they also discussed, among other things, the current situation of researcher exchange between Sweden and Japan.



Mr. Sato, Deputy Director Yoshihara, Prof. Miyazono and Director Tsumoto

2017.03.24

KTH Royal Institute of Technology

Director Tsumoto, Deputy Director Yoshihara, former Deputy Director Kawakubo and former International Program Associate Kitajima participated in a lunch meeting in a restaurant at KTH where they met with Prof. Sigbritt Karlsson, the new president of KTH, Prof. Peter Gudmundsson, former president of KTH and Mr. Torkel Werge, Advisor International Relations International Strategy Group. KTH has academic exchanges with several universities in Japan. They accept Japanese exchange students to KTH and send many exchange students from Sweden to Japan – and these exchange programs give clear results. JSPS Stockholm Office and the representatives from KTH discussed the situation of the researcher exchange between the Nordic/Baltic countries and Japanese universities, and talked about how to strengthen and further cooperation between JSPS and KTH in the future.



Deputy Director Yoshihara, Mr. Werge, Prof. Karlsson, Director Tsumoto, Prof. Gudmundsson and former Deputy Director Kawakubo

2017.04.21

Swedish Governmental Agency for Innovation Systems (VINNOVA)

Director Tsumoto, Deputy Director Yoshihara and International Program Associate Yamashita visited the Swedish Governmental Agency for Innovation Systems (VINNOVA) and met with Dr. Joakim Appelquist, Director, Head of International Collaboration & Networks, and Dr. Henrik Fridén, Program Manager. Dr. Appelquist presented VINNOVA's main activities for the staff from JSPS Stockholm Office. They also discussed the situation for researchers in Japan and Sweden.



International Program Associate Yamashita, Deputy Director Yoshihara, Dr. Appelquist, Dr. Fridén and Director Tsumoto

2017.04.27

Royal Swedish Academy of Engineering Sciences (IVA) and Sweden-Japan Foundation (SJF)

Director Tsumoto, Deputy Director Yoshihara, and International Program Associates Okamoto and Yamashita visited the Royal Swedish Academy of Engineering Sciences (IVA) and the Sweden-Japan Foundation (SJF). The new staff at JSPS Stockholm Office introduced themselves to President Björn O. Nilsson, Vice President Magnus Breidne, International Coordinator Maria Dollhopf of IVA and Secretary General Edvard Fleetwood of SJF. Then, they discussed and brainstormed about the theme of the next IVA-JSPS Seminar which is planned to be held this autumn. They also talked about future cooperation among IVA, SJF and JSPS.



International Coordinator Dollhopf, Deputy Director Yoshihara, President Nilsson, Director Tsumoto, Mr. Fleetwood and Ms. Okamoto

2017.05.08

Meeting with Ms. Lotta Lundqvist, Karolinska Institutet (KI)

Director Tsumoto, Deputy Director Yoshihara, and International Program Associates Okamoto and Yamashita visited Ms. Lotta Lundqvist, International Coordinator at Karolinska Institutet (KI). She explained about KI's activities and they discussed exchange programs between KI and Japan. They also discussed upcoming seminars and symposia.



International Program Associates Okamoto, Yamashita, Deputy Director Yoshihara, Director Tsumoto and Ms. Lundqvist

Ancient Literature Used to Predict Space Weather

Oskar Nielsen, JSPS Stockholm Office Assistant

A team of researchers and scientists from Kyoto University, Japan, has started to study ancient Japanese and Chinese literature that describes weather phenomena connected to space in order to help today's space weather scientists to predict and prepare for major solar storms in the future.

Solar flares have the potential to cause many problems on Earth, such as knocking out the satellites in orbit, GPS, the internet and other communication systems, which are essential for our digitalized world. However, the solar flares leave very few physical traces, which makes it difficult for scientists to study them. One more problem is that no one knows when the next major solar storm will hit the Earth, which is why the scientists have started looking at unconventional sources for clues.

The research team from Kyoto University wondered if authors hundreds of years ago had noted events that correspond to space weather phenomena that are beyond today's scientific instruments. Even though fictional texts often are being ignored in science in terms of scientific or factual content, some works might contain important pieces of information that scientists can receive data from. The Japanese researchers have studied two historical oeuvres – the Japanese *Meigetsuki* ("The Record of the Clear Moon") and the Chinese *Song Shi* ("History of Song") – which cover the period from the 10th to the 14th centuries.

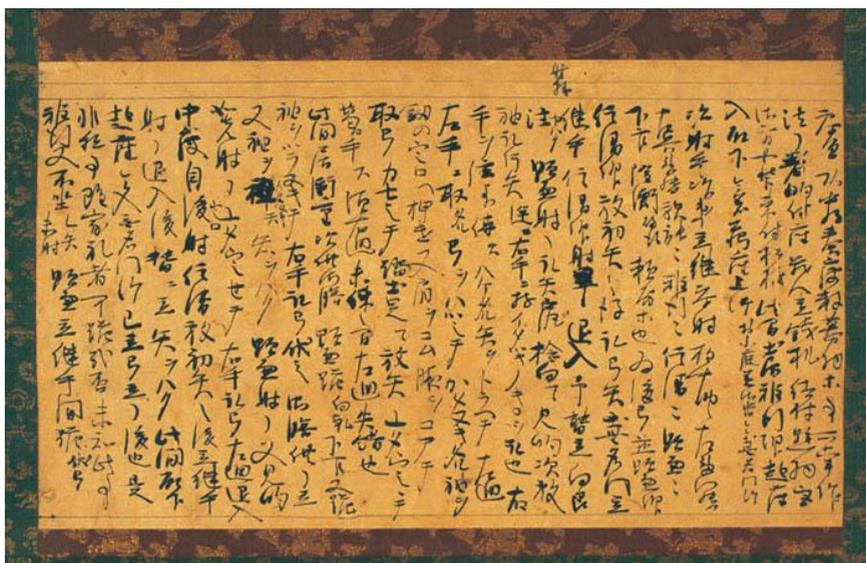
The Japanese poet Fujiwara Sadaie writes in *Meigetsuki* about seeing red and white vapor in the sky, which the scientists interpret as a sign of a magnetic storm hitting Earth. In *Song Shi*, a large sunspot, which is a sign of increased magnetic activity on the sun, is described. The scientists have also found notes about 10 prolonged auroras during the time these oeuvres were written.

In order to understand these text and data, the scientists combine the literature, tree ring dating and space observation to understand the patterns of the solar flares. They take the dates from the literature and compare them with radiocarbon data from tree rings from the period. When doing so, they found out that the tree rings showed signs of decreased levels of carbon-14, which is an indication of increased solar activity.

These two texts, *Meigetsuki* and *Song Shi*, have enabled space weather researchers to create a chronology and outline of space weather activity. They have understood that auroras are more prevalent when the greatest amount of solar activity occurs and the solar cycles reach their maximal phases. This might help the researchers – and us – to better predict and prepare for the next major solar storm.

Source:

<http://www.sciencealert.com/how-ancient-poetry-could-help-predict-the-next-massive-solar-storm>



One page from Meigetsuki

Picture by 1117Japan1117

<https://commons.wikimedia.org/wiki/File:%E9%87%8D%E8%A6%81%E6%96%87%E5%8C%96%E8%B2%A1%E3%80%8C%E6%98%8E%E6%9C%88%E8%A8%98%E3%80%8D.jpg>

Prime Minister Abe Presented Free Higher Education Plan

In January, Japan's Prime Minister Shinzo Abe held a policy speech during which he expressed a willingness to find out how the Japanese government should do to procure funds to make universities and junior colleges tuition-free. He talked about an introduction of government bonds for education that would be needed to cover the JPY 3.1 trillion that would be necessary to allow free higher education each year. However, this has caused a lot of heated discussions within the ruling Liberal Democratic Party. Some members within the party mean that this plan only will pass on debt for the generations to come and are rejecting the idea. This makes it hard for the members to find a common ground. The Liberal Democratic Party established a special task force that will discuss the financial aspects of free higher education, as well as how to fund it in detail.

Source: <http://www.universityworldnews.com/article.php?story=20170311061725441>

Foreign Talent Prioritized in Japan

In June 2016, the Japanese government set a goal of raising the employment of foreign students in Japan from 35% of those graduating to 50% by 2020. This is a part of the Japan Revitalization Strategy 2016, in which the Japanese government encourages Japanese companies to hire foreign talented students who have graduated from Japanese universities. The government is offering new incentives such as subsidized company internship, help with finding jobs after graduation, Japanese language courses and they are also working on simplifying the work visa application process after graduating from a Japanese university.

The Ministry of Education, Culture, Sports, Science and Technology has offered a scheme for new measures on how to make the foreign graduated students stay in Japan. The proposals include support offices backed by municipalities and local companies. The ministry might act as an intermediary between foreign students and small businesses in different regions across Japan. The cost of Japanese language courses to make it easier for the foreign students to work in Japan might also be covered under this scheme.

However, it is not only the Japanese government that works for internationalization of the workforce. The Ritsumeikan Asia Pacific University, APU, in southern Japan, has been internationalizing Japan's workforce for a long time. Today, APU has more than 50% foreign students. APU Vice-President and Executive Dean Kenji Yokoyama says that the foreign students are attractive to local companies because of their Japanese knowledge, their familiarity with the Japanese culture and also because of their language knowledges and international network. Multilingual workers are sought for among many Japanese companies. Vice-President and Executive Dean Yokoyama also says that since APU is such a diverse university, many Japanese students are drawn there as well.

In 2015, a record of 15,657 students found jobs upon graduation in Japan based on the issued work visas, according to statistics from the Ministry of Justice. This number of workers is a 21% rise from 2014 and double the number from 2005. 90% of the graduated students who found a job come from China, South Korea and Vietnam, and they mostly work in sales and marketing, translation and interpretation, and in the IT sector. The foreign workers are still a very small portion of the Japanese national workforce, and some of the problems they are facing are the kind of jobs they are offered. These jobs are usually specific jobs, often in the IT sector or as interpreters in duty free zones such as international airports, that are offered to them in order to protect local employment for Japanese citizens. Vice-President and Executive Dean Yokoyama says that "if Japanese companies want to hire the best foreign graduates they must be given the same opportunities as their Japanese counterparts when it comes to promotion and decision-making positions".

Sources:

<http://www.universityworldnews.com/article.php?story=20170316184126205>

<http://www.universityworldnews.com/article.php?story=20170124202453458>

Prof. Imre Pázsit Received the Order of the Rising Sun, Gold Rays with Neck Ribbon

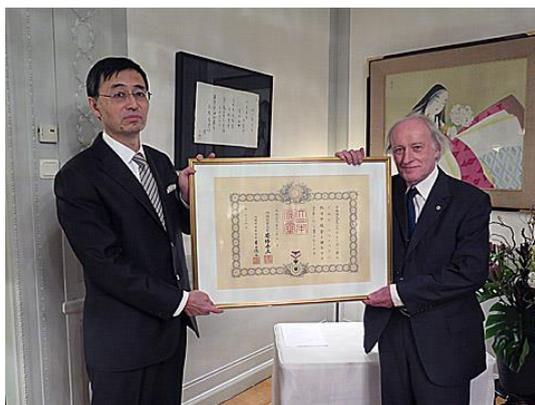
On November 3, 2016, Prof. Imre Pázsit was awarded the Order of the Rising Sun, Gold Rays with Neck Ribbon for his “contribution to the promotion of scientific and technological exchanges and mutual understanding between Japan and Sweden”. Prof. Pázsit is a former professor of the Department of Nuclear Engineering at Chalmers University of Technology in Gothenburg, Sweden, and he is also a board member of the JSPS Alumni Club in Sweden. The ceremony for the bestowal of the decoration was held on March 17 at the residence of H.E. Ambassador Jun Yamazaki. Director Tsumoto and former Deputy Director Kawakubo attended this ceremony.

Sources:

http://www.se.emb-japan.go.jp/aktivitet_170317.html

http://www.se.emb-japan.go.jp/nyhet_161103.html

http://www.se.emb-japan.go.jp/press_release_decorations_autumn_2016.pdf



*H.E. Ambassador Yamazaki and Prof. Pázsit.
Photo reprinted from the Embassy of Japan in
Sweden's homepage*

Some Ways the Introduction of Fees for Non-EU Students Have Changed Swedish Academia

In 2011, the Swedish government introduced tuition fees for foreign students from outside EU. This change has only had a marginal change in the higher education budget, but it has been a game-changer in a majority of Swedish institutions of higher educations.

The first year after the tuition fees had been introduced, the numbers of foreign students from the affected countries dropped by over 60%. And among those who were admitted to universities in Sweden, only 30% actually came. There are factors that resulted in these admitted students not taking up their places, such as complicated bureaucracy, the obligation to pay the first year's fees before receiving a study visa and delayed communication between the institutions.

The introduction of tuition fees has also involved extra administrative tasks for the Swedish institutions of higher education, and the legislation allows for full compensation for the costs of building up such an administrative apparatus. The tuition fees have also been criticized by the Swedish National Union of Students, which have the opinion that the fees should be abolished immediately since they make higher education in Sweden an opportunity for fewer people.

Although, as previously stated, the economic changes of this introduction are minimal, however, according to a report made by the Swedish Higher Education Authority (UKÄ) on request by the Swedish government, 36 out of 38 institutions report that the outcome of this reform is that they have started working on their internationalization issues more and taking them more seriously since 2011. This has made this change have a significant impact on the Swedish higher education institutions and system.

Source: <http://www.universityworldnews.com/article.php?story=20170123164911144>

Doubled Number of PhD Students in Denmark - No Change in Quality

In 2016, the Danish Ministry of Higher Education and Science conducted an analysis of the quality and effects of the increased intake of PhD students during the period 2003-2010. The analysis, called *PhD Training and its Quality and Relevance*, was published on March 3, 2017, and based on an extensive set of data from different reports as well as responses from approximately 9,000 PhD students, supervisors and international researchers.

The number of PhD students has doubled because of an agreement in the Danish parliament regarding the distribution of the so called "Globalisation fund" that was done in 2006. This agreement resulted in that 0.5% of the GNP was transferred to higher education and research internationalization. This fund has resulted in an increase of PhD students, both from Denmark and from abroad. The intake of PhD students has more than doubled during the years 2003-2010, which are the focal points for the analysis conducted by the Danish Ministry of Higher Education and Science. As 10 years have passed since the adoption of this agreement, some of the effects of the PhD increase have started to materialize as well as spurred a debate on the quality of the PhD programs and graduates.

Denmark has the fifth highest rate of employment among PhD graduates and 19 of 20 are employed after graduation. 41% of the international PhD candidates still live in Denmark 5 years after graduation. The analysis shows that the strategy conducted by the Danish government in 2006 was a big success and that the quality of the research or program hasn't changed.

Sources: <http://www.universityworldnews.com/article.php?story=20170306231754151>
<http://ufm.dk/publikationer/2017/filer/ph-d-uddannelsens-kvalitet-og-relevans.pdf>
(English summary on pages 7-11 in the second URL)

Finland Cuts Funding for Universities

In 2015, when the Finnish economy became weaker than before, the Finnish government announced that the basic funding for the 15 universities and 26 polytechnics in Finland, would be reduced by approximately 500 million EUR over the coming four years. At the same time they also announced that 100 million EUR for research funding would be cut.

Finnish academics fear that these cuts of the government funding might result in long-term damage for Finland's higher education sector, since there has been an increased number of Finnish highly educated persons leaving Finland and moving abroad. Statistics Finland has shown that the number of PhD-educated Finns who have left the country has increased by 37% between 2011 and 2015. This is particularly seen in fields like the humanities and natural sciences where it can be harder to find related jobs outside the academia.

The cuts of the basic funding for the universities and polytechnics has forced, for example, the University of Helsinki, to cut its staff numbers by approximately 1,000 by the end of 2017 in order to reduce its budget. Aalto University has been forced to cut its staff by 350 positions. Prof. Tuula Teeri, the president at Aalto University means that Finnish universities are vulnerable since most of the universities are smaller.

The Finnish academics also believe that the government's cuts will create damage that will be very hard to repair. The trust between the academic community and the government might be hard to regain.

Source: <https://www.timeshighereducation.com/news/finland-funding-cuts-catastrophe-research>

Expert Group Recommends Change in Research Funding in Norway

The Norwegian government appointed a group of experts in June 2016 and gave them the mandate to examine and propose changes in the distributions of funding from the Research Council of Norway (RCN). They were also asked to investigate if the administrative costing of RCN could be made more effective. The expert group handed in the report of their findings to the Ministry of Education and Research and the Ministry of Finance on February 7.

The expert group points out that Norwegian research has developed positively over the past decades, both when it comes to citations and peer reviews. However, there is still space for improving the quality of the research. One of the group's recommendations was that scientific quality need to be given higher priority in the funding distribution. When applying for funding from the RCN, the applications are reviewed and then rated on a one to seven graduation scale, where one is the lowest. The expert group analyzed 6,194 applications sent in during 2014-2015, and they found out that the large number of applications and the low application success rate might become a challenge. Therefore, they recommend that the RCN should collaborate with, for example, other research institutions in order to find ways to reduce the number of weak applications and thereby enhance the scientific quality of those accepted.

Apart from the point about the scientific quality, the expert group also recommends that the regulations and administration of the distribution of funds from the RCN have to be simplified, as well as a redistribution of the administrative costs within RCN.

Source: <http://www.universityworldnews.com/article.php?story=20170209110657833>

New Form of Governance of Norwegian Universities

The Norwegian government is trying to reform the governance of the Norwegian universities. The method of the reform is widely called "New Public Management", which is a kind of central control system that borrows ideas from the private sector and applies them to the public sector. Initially the New Public Management has been supported by the academia and the general public, since it was going to change the universities' old bureaucratic systems. However, these ideas have been criticized by Norwegian people from the academia and university sectors. This New Public Management resistance has historically been stronger in Norway than in the other Scandinavian countries. Many of the critics mean that this kind of governance doesn't bring freedom or autonomy to the academics since they will become more or less controlled by the government to a degree because of resource allocation. Because of the stricter allocation of money, and therefore applying more pressure upon the scientists, the scientists might not dare to take the risks. This contravenes creative thinking and scientific progress and therefore might prevent scientific breakthroughs from occurring. However, since the work pressure at universities, both in Norway and in many other countries across Europe, is growing, new forms of governance and management are needed.

Source: <http://www.universityworldnews.com/article.php?story=2017030918094136>

Upcoming Seminars and Symposia

JSPS Japan-Norway Symposium 2017

“Past, present and future of the Antarctic and the Arctic”

This symposium will bring together Japanese and Norwegian scientists to discuss the Japan-Norway collaboration on polar science and climate change. This symposium is a follow up to the Japan-Norway Arctic Science and Innovation Week 2016 which was held in Tokyo in June 2016.

Date: June 6-8, 2017

Venue: University of Bergen, Norway

Please note that this information is tentative and might change. For the most up-to-date information, please check our webpage before the seminar.

Please find more information on <http://www.jsps-sto.com/activities.aspx>

The next issue of JSPS Stockholm Office's newsletter is planned to be released in the end of August, 2017.

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