

JSPS Stockholm Newsletter

English Edition Vol. 25



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Face Neuron and Video (or Web) Conference

Tadaharu Tsumoto, Director, JSPS Stockholm Office

Talking about “face neuron” in the human and monkey brain at the very beginning might keep readers away from this prolog because of an anticipation of purely neuroscientific, boring description. However, the topic of face neuron is very instructive, if you consider the usefulness or limitation of the trendy video or web conference in place of the conventional face-to-face conference. In particular, questions of whether the video conference system should be adopted and if so, what types of conference are appropriate may be a critical issue to an organization or agency that performs global, international activities such as JSPS. In fact the JSPS Stockholm Office adopted the video conference system in an exchange of information among the Alumni clubs of Nordic countries and in discussion among the Board members of an Alumni club, as reported in the present newsletter.

In the early 1980s it was discovered that some neurons in the temporal lobe of the monkey cerebral cortex responded to presentation of human or monkey faces or even to cartoon faces, although they did not respond to similar stimuli if lines or components of the face contour were shuffled so as not to look like faces. These neurons were suggested to be specified for cognition of faces, and thus called “face neurons”. These neurons were found in the wide area of the inferior temporal cortex of the monkey brain. In the human brain it was found that the temporal cortical areas corresponding to those in the monkey brain and the nearby area called fusiform gyrus best responded to presentation of face stimuli. Therefore, it is believed that the human brain also has a large number of face neurons. This implies the importance of information about faces in communication with others in the human society. In fact, there are sayings in common among various languages such as “save face”, “lose face”, “turn face”, “new face” etc. in English as well as in Japanese. Recent studies also pointed out an important role of eye movements or gaze in facial expression. In humans the white (conjunctiva) of the eye is conspicuous while in monkeys there is no white eye, and thus eyes and eye movements are particularly important in communication among humans. In physiological recordings of the eye position it is found that gaze of a person who faces others is concentrated onto the eye of the others.

From this point of view, telephone conferences without viewing participants’ faces (including eyes) may not be an appropriate means of conference. Also the video conference system at the early stage of its development was not satisfactory at all because only small images of faces of participants were seen on the monitor screen and thus their facial expressions were not clearly recognized.

These points may be reasons why many people felt impatient with video conferences. Recently, however, these shortcomings have been improved in terms of both hard and soft wares. Therefore, video conference becomes useful if participants are already familiar with each other. There is a problem, however, in video conferences consisting of many participants. In such a large conference, for example, it is difficult to guess whether most of the participants are for or against the opinion of a presenter. In other words, it is desirable or even necessary to view the faces of all participants to guess whether the conference would reach a consensus of most attendants. Thus, the present video conference system in which facial expressions of all participants are not clearly recognized online with sufficient spatiotemporal resolution is not yet satisfactory as means of conference. In sum, the conventional face-to-face conference has still an advantage in the point that it is relatively easy to guess a consensus of participants.

However, face-to-face conferences have disadvantages such as requirements of long travelling of attendants, who might suffer from jet lags in some cases. Also a lot of expenses of travelling may be a big issue to the organizer of the conference. In this sense, recently available systems such as Skype or FaceTime may be useful, although there is a risk of leakage or dispersion of confidential information. Thus the frequency of video conferences may further increase to save time of participants and to save the expenses of the organizers. As mentioned above, however, there are some disadvantages as well as advantages in video conferences. To plan to hold a teleconference, therefore, we should consider the characteristic properties of our brain in which many detectors for face and gaze, such as face neurons, are equipped.



A crayfish with the traditional Swedish seasoning “krondill” and a paper decoration for the crayfish parties.

Photo of crayfish by Ylvers

[\(https://pixabay.com/sv/kr%C3%A4fta-krondill-skaldjur-%C3%B6d-434664/\)](https://pixabay.com/sv/kr%C3%A4fta-krondill-skaldjur-%C3%B6d-434664/)

KVA-JSPS Seminar with Prof. Osamu Nureki, Department of Biological Sciences, The University of Tokyo



Prof. Nureki lecturing at Stockholm University

On June 6 and 7, the KVA-JSPS Seminar was held at Stockholm University and at the SciLifeLab at Karolinska Institutet. Prof. Nureki, from the Department of Biological Sciences, The University of Tokyo, was invited as a lecturer for the two days. At Stockholm University, on June 6 (the photo above), he held a seminar called “Structural Basis for Molecular Mechanisms of Membrane Transporters” where he presented his recent achievement of molecular mechanisms of membrane transporters of ions, sugar, amino acids and

xenobiotics. Prof. Nureki presented his results of this research.

On June 7 Prof. Nureki held a seminar at the Science for Life Laboratory at Karolinska Institutet (on the photo below), called “Structure-based Development of Genome-editing Tool, CRISPR-Cas9 towards Medical Applications”, since his laboratory also conducts research about CRISPR. He showed the results from the latest data coming from the high-speed atomic-force microscopy. He also showed, in real time, a Cas9 protein sliding over DNA until it found and cut the specific sequence. This led to questions and discussions from and among the participating scientists.



Prof. Nureki lecturing at Karolinska Institutet

JANET Forum, Berlin

On June 29 and 30, Director Tsumoto and International Program Associate Kitajima of the JSPS Stockholm Office participated in the JANET Forum 2016 which was held in Berlin. JANET stands for Japan Academic Northern Europe Network. Since members from universities or institutions who work or have offices in all over Europe participated, it was decided during the forum that the word “Northern” should be taken out of the name, but that the word “JANET” will remain. The event was hosted by Freie Universität Berlin, JSPS Bonn Office and University of Tsukuba. On June 29, a reception at the Embassy of Japan in

Germany was held, and on June 30 the Forum was held. The program consisted of exchange of information, presentations by German Funding Organizations, Japanese Senior Researchers and representatives of universities and ended with information from JSPS and JANET. They focused a lot on cooperation among the universities and organizations that cooperate with JANET, as well as discussions concerning its future plan.



Booth for promotion of JSPS



Networking dinner reception, Director Tsumoto with microphone

ACF Activity Seminar with Prof. Takao Hanawa, Institute of Biomaterials and Bioengineering, Tokyo Medical and Dental University

On August 7-9, JSPS Alumni Club in Finland (ACF) organized an activity seminar called "2nd Bone and Biomaterials Workshop" to which they invited Prof. Takao Hanawa from the Institute of Biomaterials and Bioengineering at Tokyo Medical and Dental University as one of the speakers. The workshop was held in Inari in the northernmost part of Finland and researchers from several Japanese, Finnish and other universities participated and discussed recent research and advancements in the fields of biomaterials, orthopaedics and regenerative medicine. Director Tsumoto introduced the activities of JSPS Stockholm Office and JSPS' programs.

There have been significant advances in regenerative medicine, especially new concepts for biomaterials over the past few years. Workshops like this strengthen the cooperation between both universities and researchers as well as countries. During this workshop, the fruitful discussions following the seminars led to promises for future cooperation as well as the planning of a 3rd workshop that is to take place in Tokyo in two years.



Director Tsumoto introducing JSPS

(Please find the report by Prof. Takao Hanawa on page 5)

2. News (2) Alumni

JSPS Pan Nordic Alumni Club Chair Meeting

On June 22 the JSPS PAN Nordic Alumni Club Chair Meeting was held through Skype. The Swedish and Finnish Club Chairs discussed several topics with JSPS Stockholm Office. Unfortunately, the Danish Club Chair could not attend because of an urgent matter. The participants discussed the activities of the clubs, with the Alumni Club in Sweden (SAC) 10 Year-Anniversary Symposium as a good example, as well as the activity plans of FY2016, such as the upcoming Activity Seminar and the ACF All Alumni Meeting in October. Then JSPS Stockholm Office offered information from the Headquarter Office in Tokyo with suggestions on how the other alumni clubs manage to stay independently active. The Board chairs then explained the administrative roles within the Boards and JSPS Stockholm office added what administrative roles it has. Finally the attendants discussed how the clubs can do in order to activate their partners and partner institutions as well as how they deal with members living in other areas than the capital areas. It was a fruitful meeting with many good ideas and thoughts.

SAC Board Meeting

On July 14 a board meeting was held with the Alumni Club in Sweden (SAC) Board on Skype. The Board members and JSPS Stockholm Office discussed the SAC Activity Seminar that is to be held at KTH in October and the budget of FY2016. JSPS Stockholm Office presented changes that have been done in the FY2016 budget and the SAC Board agreed to the new changes. The Board also proposed that an extra seminar can be hold on the same day as the Sweden-Japan Academic Network, and started planning this event.

ACF Activity Seminar “2nd Bone and Biomaterials Workshop”

Takao Hanawa, Ph.D., Professor, Institute of Biomaterials and Bioengineering,
Tokyo Medical and Dental University

On August 7-9, 2016, the JSPS Alumni Club in Finland (ACF) held the ACF Activity Seminar “2nd Bone and Biomaterials workshop” in Inari, Finland, supported by JSPS Stockholm Office. This workshop was co-organized by Japanese and Finnish researchers and the local organizing committee was composed by Profs. Petri Lehenkari and Juha Tuukkanen, University of Oulu.

Twenty researchers from Japan, Finland and Sweden participated in the Workshop. Prof. Petri Lehenkari and I first offered opening remarks and JSPS Stockholm Office Director Tadaharu Tsumoto explained the way to support networking and activity by JSPS. Following self-introduction of the participants, the 11 attending Japanese researchers, 6 Finnish and 1 Swedish researchers each gave a 30-minute presentation and active discussions were carried out during the three days. Bone regeneration, interface phenomena between bone tissue and materials, and surface modification of materials to accelerate bone bonding and formation were deeply discussed and the significance of these researches to avoid failures of bone implant devices was re-recognized. The participants engaged together in a lively exchange of views and ideas.

After the workshop, participants have requested 3rd Workshop in a few years. During the brain storming, we decided to hold the next Workshop in October, 2018, in Tokyo, to maintain a continuous good academic relationship among the three countries. Embryos of new collaboration researches are generating after the Workshop.



Group photo of the workshop participants



The participants during the workshop



Participants listening to a presentation at Hotel Inari



Prof. Hanawa during the opening remarks

Courtesy Visits to JSPS Partner Institutions in Sweden

Since the arrival of JSPS Stockholm Office's new Director Tadaharu Tsumoto in June, he has made several courtesy visits to JSPS' partner institutions in Sweden in order to get acquainted with representatives and to discuss future collaborations.

JSPS Stockholm Office would sincerely like to thank our partner institutions for their time and hospitality.

2016.06.13

The Embassy of Japan in Sweden

The JSPS Stockholm Office paid a courtesy visit to the Embassy of Japan in Sweden. They met with Ambassador Jun Yamazaki, Counsellor Shinji Watanabe and First Secretary Masafumi Sato.

After Director Tsumoto had explained about JSPS Stockholm Office's activities to Ambassador Yamazaki they discussed and exchanged opinions about upcoming events, such as the 150th anniversary of the establishment of diplomatic relations between Japan and Sweden.



2016.06.14

Swedish Ministry of Education and Research

Director Tsumoto, Deputy Director Kawakubo and International Program Associate Nakakane visited the Ministry of Education and Research and met with Dr. Mattias Jennerholm who is the Head of Section at the Division for Research Policy. They discussed and exchanged opinions about collaborative relationships between Japanese and Swedish universities, the education budget, globalization of universities as well as the ratio of female researchers in higher education. Dr. Jennerholm also explained about the management of the Swedish Ministry of Education and Research.

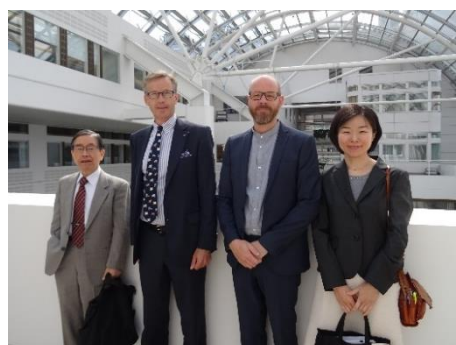


2016.06.15

Swedish Foundation for Strategic Research (SSF)

Director Tsumoto, Deputy Director Kawakubo and International Program Associate Kitajima visited the Swedish Foundation for Strategic Research (SSF) where they met with Chief Executive Officer Prof. Lars Hultman and Research Programmes Manager Dr. Joakim Amorim. SSF gave an explanation about the foundation and its projects.

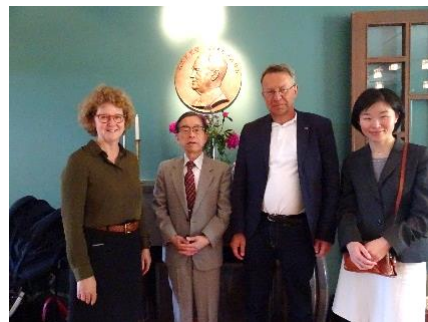
JSPS Stockholm Office explained about its international programs and its partner institutions. Additionally, they exchanged information concerning the exchange situation in the fields of scientific research, grants and fellowships.



2016.06.15

Lunch Meeting at Stockholm University

Director Tsumoto, Deputy Director Kawakubo and International Program Associate Nakakane visited Stockholm University and met with Deputy Vice-Chancellor for the Science Academic Area Prof. Anders Karlhede and Senior Advisor of International Relations Elisabet Idermark. They discussed the differences in Japanese and Swedish university environments, the internationalization of Japanese universities and future collaborations between Swedish and Japanese universities.



2016.06.16

Nobel Museum

Director Tsumoto, Deputy Director Kawakubo and International Program Associate Nakakane visited the Nobel Museum and met with Museum Director Dr. Olov Amelin, Administrative Director Eva Windrup and Research Director and Senior Curator Katarina Nordqvist. The staff from JSPS Stockholm Office were guided through the parts of the current exhibition that are dealing with Japanese Nobel Laureates. Museum Director Amelin told JSPS about the activities of the museum and the organization of the Nobel Foundation.



2016.06.16

Royal Swedish Academy of Sciences (KVA)

Director Tsumoto, Deputy Director Kawakubo and International Program Associate Nakakane visited the Royal Swedish Academy of Sciences (KVA) and met with Permanent Secretary Prof. Göran K. Hansson, Executive Director Dr. Per Hedenqvist and Scientific Secretary Dr. Heléne Sundström.

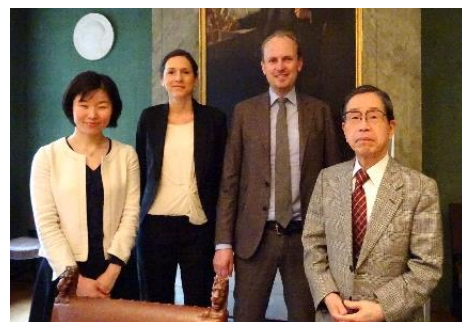
KVA is an independent organization whose aim is to promote sciences and strengthen their influence in society. JSPS and KVA have held several events and seminars together. They discussed the KVA-JSPS Seminars, the upcoming "The 5th Sweden-Japan Academic Network" and the JSPS Fellowship Programs. After the meeting, they got a tour of the KVA facilities.



2016.06.17

Nobel Media

Director Tsumoto, Deputy Director Kawakubo and International Program Associate Kitajima visited Nobel Media and met with CEO Mattias Fyrenius and Deputy CEO Laura Sprechmann. They discussed the general information about both organizations and their current activities. JSPS Stockholm Office explained about which areas they cover outside of Sweden and about the other JSPS overseas offices around the world. Since the Nobel Prize Dialogue Tokyo 2015 got a big success, JSPS expressed their gratefulness to the efforts of Nobel Media, who are happy to see that the Nobel Prize Dialogue will be held in Tokyo again in 2017. Both Nobel Media and JSPS reconfirmed that they have as the common mission to promote science, which makes them consider each other valuable in their partnership.



2016.06.21

The Swedish Foundation for International Cooperation in Research and Higher Education (STINT)

Director Tsumoto, Deputy Director Kawakubo and International Program Associate Kitajima visited the Swedish Foundation for International Cooperation in Research and Higher Education (STINT) and met with Executive Director Dr. Andreas Göthenberg, Programme Director Dr. Hans Pohl and Assistant Programme Manager Agneta Granlund.

Director Tsumoto thanked STINT for their collaboration in the JSPS Fellowship Programs. JSPS Stockholm Office asked STINT about what they thought about the follow up for the Japan-Sweden University Presidents' Summit, and then, STINT showed JSPS Stockholm Office the situation for scientific exchange between Japan and Sweden through analytic data.

2016.06.21

Swedish Governmental Agency of Innovation Systems (VINNOVA)

Director Tsumoto, Deputy Director Kawakubo and International Program Associate Kitajima visited the Swedish Governmental Agency of Innovation Systems (VINNOVA) and met with Director and Head of International Division Dr. Joakim Appelquist, Manager of the International Division Dr. Henrik Fridén and Birgitta Boman who is in charge of programs.

JSPS Stockholm Office thanked VINNOVA for their cooperation on the JSPS Standard Postdoctoral Fellowships and Short-term Invitation Fellowship to which VINNOVA is one of the nominating authorities.



2016.06.27

The Royal Swedish Academy of Engineering Sciences (IVA)

Director Tsumoto, Deputy Director Kawakubo, International Program Associate Kitajima and First Secretary Masafumi Sato from the Embassy of Japan in Sweden visited the Royal Swedish Academy of Engineering Sciences (IVA) and met with CEO Dr. Björn O. Nilsson, International Coordinator Dr. Maria Dollhopf and General Secretary of the Sweden-Japan Foundation Edvard Fleetwood.

At the meeting, the theme and speakers for the upcoming IVA-JSPS Seminar was discussed. Director Tsumoto proposed the theme "Robot Technology" and IVA and the Sweden-Japan Foundation gave their approvals, and the theme was decided. Director Tsumoto presented candidate speakers who are achieving excellent results in robotic technology.



2016.05.13

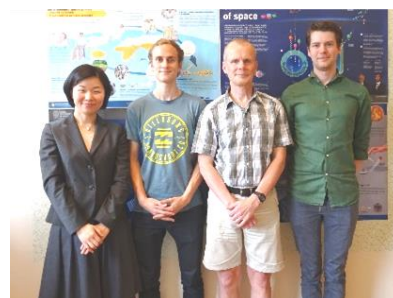
JSPS Center Director Meeting

Director Tsumoto attended the JSPS Center Directors' Meeting that was held in Tokyo together with the other overseas' offices' Directors (from Washington, San Francisco, Bonn, London, Strasbourg, Bangkok, Beijing, Cairo and Nairobi), Advisor (Sao Paulo) and representatives from the JSPS Headquarter Office in Tokyo. The directors presented their centers' activities in FY2015. The JSPS Headquarter Office presented JSPS' main directives and the JSPS Overseas Centers' mission, and administrative management. They also discussed topics like networking for Japanese researchers outside of Japan, information and security. They concluded with free discussions.

2016.06.03

Visit by Dr. Joel Peterson, University of Borås and SAC Board Member

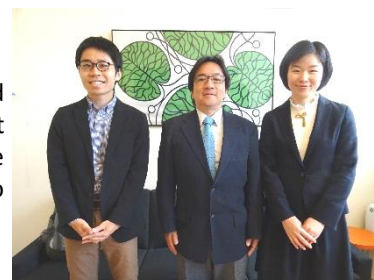
Dr. Joel Peterson visited the JSPS Stockholm Office with the purpose to discuss the upcoming SAC Activity Seminar "Paper Yarn Textiles and Fashion – A compostable raw material for the future" that is to be held on October 20 at Borås University. Dr. Peterson and JSPS Stockholm Office discussed the seminar's budget, accommodations and flights for the Japanese speaker and staff from JSPS and SAC board members. They also discussed how JSPS will be promoted during the seminar and finally Dr. Peterson told the JSPS Stockholm Office about his JSPS Fellowship Experiences. Deputy Director Kawakubo informed Dr. Peterson about which JSPS Fellowship programs are suitable for the students at Borås University.



2016.06.09

Visit by Prof. Osamu Nureki, University of Tokyo

Prof. Nureki was invited as a lecturer at the first KVA-JSPS seminar in FY2016 and paid the JSPS Stockholm Office a visit. Deputy Director Kawakubo explained about the main activities of JSPS Stockholm Office as well as the bilateral exchange programs, the Core to Core Programs and Fellowship Programs. Prof. Nureki also gave his opinions on the Kakenhi system.



Visit to the Embassy of Japan in Sweden

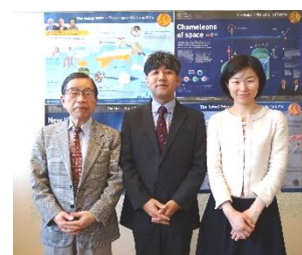
Prof. Osamu Nureki, University of Tokyo, and Deputy Director Kawakubo visited the Embassy of Japan in Sweden and met with Ambassador Jun Yamazaki and First Secretary Masafumi Sato. Prof. Nureki explained about the contents of his research: through analyses at an atomic level of cells, a deeper understanding of the dynamic process of the chemical reactions can lead to a better drug design. He also discussed necessary policies that are needed in order to develop his research in the future and the collaboration of research between the university and industries.



2016.06.23

Visit by Mr Yasuhiro Isobe, Hiroshima University, Research Administrator at the Organization for Research Promotion

Mr Yasuhiro Isobe visited the JSPS Stockholm Office while on a business trip to Sweden where he had visited Luleå University and KTH. He talked about the activities for the internationalization of Hiroshima University. Director Tsumoto presented JSPS Stockholm Office's main activities to Mr Isobe.



2016.07.04

Visit to the Tohoku University Liaison Office at KTH Royal Institute of Technology

Deputy Director Kawakubo and Office Assistant Nielsen visited the Tohoku University Liaison Office at KTH Royal Institute of Technology and met with Prof. Toshiyuki Takagi, Institute of Fluid Science, Tohoku University and Associate Prof. Fredrik Lundell, KTH Royal Institute of Technology. Assoc. Prof. Lundell and Prof. Takagi explained about the functions of the liaison office and what kind of research and collaborations are being conducted there.



Japan – a Food Science Pioneer

Oskar Nielsen, JSPS Stockholm Office Assistant

Japan is a country that is well known for its healthy and delicious cuisine and that always has fascinated amateur food enthusiasts as well as professional nutritionists. Not only is Japan's cuisine beloved all over the world, the country is also one of the pioneering countries in food science, leading a global drive to create functional foods. One might ask what factor urges Japan in this research field, and it might have started with Japan's search for taste.

In the very beginning of the 20th century, the chemist Kikunae Ikeda (1864-1936) set out on a quest to find out what caused the savoury taste he felt in the soup stock *dashi*, which is essential for Japanese cooking. After having found out that the specific taste came from dried *kombu*, an edible form of kelp that is one of the fundamental ingredients in *dashi*, he simmered 38kg of it. When examining the chemical components of the simmered *kombu*, he found what caused the savoury taste: glutamic acid. This was in 1908 and Ikeda named this taste *umami*, which simply means "delicious" in Japanese. However, it was not until 2009, a century later, that British scientists could confirm the taste receptors in human umami taste and thus making it the fifth basic taste together with sweetness, sourness, saltiness and bitterness.



Kikunae Ikeda

Photo from:

https://commons.wikimedia.org/wiki/File:Kikunae_Ikeda.jpg?uselang=sv

Umami is found in a wide variety of food – shiitake mushrooms, fermented soy beans, dried meat, tomatoes, stored cheese, ketchup, dried bonito, fish sauce, miso, celery, beer, etc. The list is long.

Human beings are being exposed to the umami taste from birth since the umami tasting glutamic acid composes around half of the amino acids that is in the breastmilk. The reason humans like tastes like sweet and salt is because sweetness means there is a lot of energy in the food, and salt because we need it (however, humans do not need too much salt, which has made us dislike too salty food), and humans like the umami taste since it originally meant that there was a lot of energy and proteins in food that tasted like it.

Ikeda patented a method for creating a seasoning using glutamic acid as the main component, and this was the start of the huge Japanese seasoning company Ajinomoto Co, Inc.

Ajinomoto is together with Tokyo University of Agriculture and Technology, Tohoku University and Ryukoku University some of the main institutions where food research is being conducted. Even the Japan Aerospace Exploration Agency (JAXA) is collaborating with food manufacturers to develop food for life in space.

The food science discipline is taking a multidisciplinary approach, covering both basic and applied research, to its research that covers a vast range of fields including genomics, immunology and engineering. Recently food science has been transitioning from phenomenological to molecular approaches, which helps in the understanding to what lies behind the components that have created the term functional foods.

The population of Japan is ageing and this has become a public health issue. At Tokyo University of Agriculture and Technology, research concerning functional foods, is being done on a large scale. In 1991, a project at this university brought about the world's first policy approving commercialization of "Foods for Specified Health Use" (FoSHU). Today, FoSHU-approved products are filling the supermarket shelves with products and is a field that is advancing when it comes to food science. Functional food is always heavily scrutinized since the functional food research is having an effect of the quality of life, longevity and society.

At the Fukuoka Bio Cluster Project in Kyushu functional foods are being developed with a focus on the prevention of senile dementia, diabetes and anti-aging. However, the Japanese food science sphere needs to widen to a global scale since the number of researchers is limited.

4. Column

Japanese scientists have researched the positive aspects of umami and found out that, for example, umami sends signals to the brain that stimulates the digestion and absorption of proteins as well as it being a functional food. At Tohoku University, researchers have discovered that the ability to taste umami has benefits especially for elderly. The taste of umami promotes salivation which enhances the appetite and improves the health, since many elderly people feel a lack of appetite and do not eat properly. Similar research has been done in the healthcare sector where patients, especially cancer patients, loose appetite, which can be restored by adding acids and umami to the meals they are served.

Umami is therefore not only delicious, but it is also essential for human health and has revolutionized and in a way started food science.

Sources:

Nature – the International Weekly Journal of Science, Vol. 534, No. 7606, *Spotlight on Food Science in Japan*, commissioned and edited by the Naturejobs editor

<http://www.foodnavigator.com/Science/Study-confirms-umami-taste-receptor>

<http://fof.se/tidning/2008/7/umami-far-det-att-vattnas-i-munnen>



Dried kombu

Photo by Alice Wiegand (<https://commons.wikimedia.org/wiki/File:Kombu.jpg>)

The Inauguration of MAX IV

On June 21, 2016, at 13:08:55, the time of the year when the sun is at its highest point in the sky, the research facility MAX IV was inaugurated in Lund, Sweden. The inauguration was conducted by H.M. King Carl XVI Gustaf of Sweden and the Swedish Prime Minister Stefan Löfven.

The construction of MAX IV was started in 2010, and is, as the name suggests, the fourth synchrotron light facility in Lund. The first one was opened in 1986 and was used for conducting nuclear physics experiments. The new building of MAX IV can simply be described as a combination of a giant X-ray and a microscope, intended for materials research. The new facility produces the sharpest and most brilliant light of its kind in the world, which means that it can generate an X-ray beam with a high intensity.

In the MAX IV laboratory there are three so called accelerators: one linear accelerator of 250 meters and two storage rings. The large ring has a circumference of 528 meters and the smaller has a circumference of 90 meters.

The electrons are injected into the rings from the linear accelerator where they are made to move so fast

that they approach the speed of light. From the linear accelerator they are then inserted into the storage ring where their path is bended by the means of magnets. This process makes the electrons emit an intense light, which has the wavelengths from ultraviolet to hard X-rays. Then this immensely brilliant light is led from the rings to research stations through pipes, and is ready to be used in experiments.

Approximately 2000 researchers from both academia and industry are expected to visit the facility annually in order to engage in research projects in a wide range of disciplines. The X-ray light produced by MAX IV gives the scientists a chance to study materials on an atomic level. This will provide greater understanding of the material's structures and can provide benefits to the development of medicine as well as other products.

Sources:

www.sydsvenskan.se/2016-06-21/nu-invigs-framtidens-forskning

<https://www.maxlab.lu.se/node/211>



MAX IV. Photo by Roger Eriksson, ESS (<https://lu.exigus.com/file/461694#>)

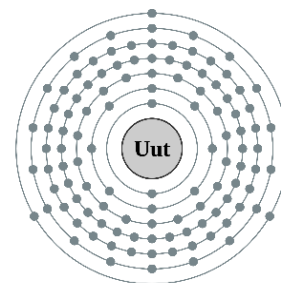
5. Academic Information

Nihonium - a new atomic element

A team of researchers at the Riken institute in Japan created and discovered the new atomic element 113 and named it "nihonium" in the beginning of June. The scientists made the name from the word "Nihon", which means "Japan" and gave the element the atomic symbol "Nh". This atomic element is not the only new one this year, but has company of moscovium, tennessine and oganesson, all named after the place in which they were discovered (except oganesson, which was named after the Russian nuclear physicist Yuri Oganessian, who was born in 1933 and is the second living human being after whom a new atomic element has been named).

All these new atomic elements were created several years ago, but in order to become a part of the periodic table of elements, two independent experiments that have confirmed the elements' existence, must have been conducted. When the atomic elements have been confirmed, the proposed name is sent to the International Union of Pure Applied Chemistry and the International Union of Pure and Applied Physics for review. So far, the names are preliminary, but the final decision will be made in November this year.

Nihonium has been created three times in 2004, 2005 and 2012 by a team led by Professor Kosuke Morita, currently in Kyushu University, by colliding zinc ions with bismuth. Nihonium is very heavy since it has 113 protons in its nucleus. However, the usage of these new atomic elements and their names might become scarce, since they only exist for a very short amount of time and the time of their radioactive decay is less than a millisecond.



Graphic of nihonium's composition

Sources:

<http://www.japantimes.co.jp/news/2016/06/08/national/science-health/japanese-scientists-plan-name-atomic-element-113-nihonium/>

<http://fof.se/artikel/nya-namn-pa-nya-amnen>

Graphic: Electron shell diagram for Ununtrium, the 113th element in the periodic table of elements. By Pumbaa (original work by Greg Robson), https://commons.wikimedia.org/wiki/File:Electron_shell_113_Ununtrium.svg

The Silvia Doctors of 2016

Dementia is one of the biggest endemic diseases of our time and a huge challenge for the health care system. H.M. Queen Silvia of Sweden is very dedicated in the research for helping people suffering from dementia, and in 1996 she inaugurated the foundation Silviahemmet. Silviahemmet is a non-profit foundation that is devoted to improving the quality of life both for persons who are affected by dementia and their families. Through Silviahemmet, research is being conducted and new doctors and nurses are being educated. And now the second batch of Silvia Doctors have graduated.

This specific educational program is held in English, since there is a global need for higher competence in dementia. The courses are offered online, so that the doctors can work on their respective clinics in their countries while studying and researching. This is being done so that it is possible for them to work with their patients during the course and directly can apply their new knowledges to their patients.

This year six new Silvia Doctors graduated, originating from four different countries – the first time with international graduates. The graduation ceremony took place on May 17 and was held at Aula Medica, Karolinska Institutet and at the same time Silviahemmet celebrated its 20th anniversary. H.M. Queen Silvia of Sweden handed out the diplomas to the new Silvia Doctors, who are Dr. Annette Ekström (Sweden), Dr. Björn Lennhed (Sweden), Dr. Stylianos Orphanides (Sweden), Dr. Jean-Claude Leners (Luxembourg), Dr. Ursula Sottong (Germany) and Dr. Junichiro Toya (Japan).

The graduation ceremony and anniversary celebration were attended by H.M. Queen Silvia of Sweden, minister of health and social affairs Åsa Regnér, president of the Silviahemmet foundation Wilhelmina Hoffman and vice-chancellor of Karolinska Institutet Karin Dahlman-Wright, as well as several representatives from the Karolinska Institutet Department of Neurobiology, Care Sciences and Society.

Sources:

<http://ki.se/en/news/new-silvia-doctors-received-their-diplomas>

<http://news.cision.com/karolinska-institutet/r/new-silvia-doctors-ensure-better-dementia-care-around-the-world,c2007948>

<http://www.silviahemmet.se/en/>

KI President Nomination Process

The nomination process for the next vice-chancellor at Karolinska Institutet started on June 1 and continued during the summer until August 15. During this autumn the candidates will be selected and interviews will be conducted. Since the expectations of the next vice-chancellor are very tough, the election committee accepts nominations from all around the world, with the new requirement that the nominated person does not need to speak Swedish. The person must however be internationally known, pedagogically highly skilled and sufficiently familiar with medicine as a discipline as well as understanding how a medical university interacts with the healthcare sector. The election board hopes to get a wide range of good candidates to choose from. The new vice-chancellor will take up office at Karolinska Institutet in early 2017.



Karolinska institutet's flag
Photo by Holger Ellgaard

Source:

<http://ki.se/en/news/even-tougher-expectations-of-the-next-vice-chancellor-at-ki>

KTH's New President Proposed

The new president of KTH Royal Institute of Technology has been proposed. Out of the 58 candidates that were considered in an extensive election process, the university's nominating committee proposed Professor Sigbritt Karlsson for the president of KTH. Professor Karlsson will become the first female president at KTH, and she has the ambition to take KTH to the next level and make the university even more competitive on a global scale. Professor Sigbritt Karlsson will succeed the current president of KTH, Professor Peter Gudmundson and she will assume office on November 12, 2016.



Prof. Sigbritt Karlsson. Photo: Adam af Ekenstam

Source:

<https://www.kth.se/en/aktuellt/nyheter/sigbritt-karlsson-foreslas-som-ny-rektor-for-kth-1.627324>

Inventor and IT Entrepreneur Stina Ehrensvärd Awarded the KTH Great Prize

KTH's Great Prize is rewarded to one person each year by the KTH Royal Institute of Technology. In 1944 KTH received a donation from an anonymous donor that finances the prize, which now stands at 1.2 million Swedish kronor. It is awarded either to someone who has done discoveries and created values that promotes Sweden's continued material progress, or someone who through scientific research has discovered valuable principles or methods that are useful for applications for the promotion of Sweden's continued material progress, or a person who through artistic activities has a big influence on the spiritual life of her/his own people. The prize has been awarded to a wide range of people, such as Assar Gabrielsson (the creator of Volvo), Evert Taube (artist and poet), Alva Myrdal (politician and diplomat), Christer Fuglesang (the first Swedish astronaut), Gunilla Pontén (fashion designer), Daniel Ek (the creator of Spotify) and Robyn (artist and music producer), just to mention a few.

This year the inventor and IT entrepreneur Stina Ehrensvärd will be awarded the KTH's Great Prize. In a world where digital security becomes more and more important and crucial for companies as well as individuals, Ehrensvärd's developed Internet security standard solution YubiKey, will be warmly welcomed in the years to come. The YubiKey is a small and highly

secure USB and NCF device that supports multiple authentication and cryptographic protocols. As it stores passwords and other sensitive data extremely safely, it has been called "a hacker's nightmare". Some of the customers of Ehrensvärd's company, Yubico, are Google, Facebook and the U.S. Department of Defense – and millions of individuals use her other solutions.

Even though the big IT companies like Google, Facebook and Microsoft have offices and some development in Sweden, the main developers and offices are located in the United States, which became the main reason for Ehrensvärd to move to the U.S. However, when she moved across the Atlantic her business took off and became the profitable and innovative company that we see today.

The JSPS Stockholm Office wants to congratulate Stina Ehrensvärd on her great achievements.

Sources:

<https://www.kth.se/en/forskning/artiklar/it-entreprenor-far-kth-s-stora-pris-1.655751>

<http://www.kth.se/om/fakta/fame/kths-stora-pris/samtliga-pristagare-1.3972>



Stina Ehrensvärd

Photo:

<https://www.kth.se/en/forskning/artiklar/it-entreprenor-far-kth-s-stora-pris-1.655751>



Ehrensvärd's innovation, the YubiKey

Photo from YubiCo's homepage

(<https://www.yubico.com/products/yubikey-hardware/>)

Polar Research Conference for Strengthening Cooperation between Japan and Norway in Tokyo

Japan and Norway are two nations with a long tradition of polar research as well as a wide variety of shared interests in the Arctic region, being two countries heavily depending on the ocean. Since they both have a lot to gain from collaborating and working closely together, the conference “Japan-Norway Arctic Science and Innovation Week 2016” was held in the beginning of June in Tokyo.

When Japan launched a new research strategy for the Arctic in 2015, Prime Minister Shinzo Abe emphasized that Japan needs to be active in designing international regulations relating to the Arctic, as well as strengthening international and bilateral cooperation on issues concerning the northern areas of the globe. And since Norway is the fifth largest nation in polar research in the world, and the third largest in Arctic research, according to how many research publications are being published, the country is a relevant partner for Japan. The new research strategy is opening up a lot of opportunities for developing the cooperation between these two nations, which was one of the main reasons the conference was initiated.

The overall theme for the program of the conference was sustainability and it was treated during different sessions throughout the conference with the themes Arctic maritime operations and societal needs, Marine environment and resource management, The coupled Arctic climate system and its teleconnections with midlatitudes, Climate processes and the role of Antarctica in the global climate system, and Energy and

infrastructure for sustainability in the Arctic.

The conference’s program was the result of collaborations between Japanese and Norwegian delegates. From the Norwegian side, representatives from the scientific community helped with the design of the program, and from the Japanese side, representatives from Japan’s National Institute of Polar Research, the Japan Agency for Marine-Earth Science and Technology and Hokkaido University helped designing the program.

The conference was held in Tokyo on June 2-3, 2016, and was organized by the Research Council of Norway together with the Royal Norwegian Embassy in Tokyo, the Norwegian Centre for International Cooperation in Education and Innovation Norway. Representatives from several Norwegian and Japanese universities and research institutions attended.

Sources:

<http://injapan.no/arctic2016/>

http://www.forskningradet.no/en/Newsarticle/Strengthening_polar_research_cooperation_between_Norway_and_Japan/1254017514203/p1177315753918

Upcoming Seminars and Symposia

Seminar on student and PhD candidate mobility between Norwegian University of Science and Technology (NTNU) and Japan

NTNU Alumni and NorAlumni Japan will hold the seminar in cooperation with Norwegian Centre for International Cooperation in Education (SiU) and NTNU's Japan Office. The main objective of the seminar is to inspire and to encourage increased mobility between NTNU and Japan for university students and to provide practical information about exchange and internship opportunities.

Date and time: September 7, 2016, 12:00-16:15

Venue: Rådssalen, Main Building, Gløshaugen Campus, Trondheim, Norwegian University of Science and Technology (NTNU)

Joint SPring-8 – MAX IV Laboratory Workshop on New Light Sources and Biological Applications

A workshop will be cohosted by MAX IV Laboratory, Institute for Protein Research, Osaka University, Japan Synchrotron Radiation Research Institute (JASRI), RIKEN Spring-8 Center, Department of Cell and Molecular Biology, Uppsala University and JSPS Stockholm Office. The theme is new light sources and their biological applications

Date and time: September 8, 2016: 9:00-17:15

September 9, 2016: 9:00-12:30 (optional MAX IV tour in the afternoon)

Venue: Lecture Room, MAX IV Laboratory, Lund University

3rd Tokyo Tech – Uppsala University Joint Symposium

This symposium is cohosted by Tokyo Institute of Technology, Uppsala University and JSPS Stockholm Office. The seminars' topics are: "Energy and Environmental Technology", "Material Sciences", "Energy Systems and Analysis", "Entrepreneurship and Innovation", "Mathematics", "Applied and Nuclear Physics", "Serious Games and Human Interface" and "Digitalization".

Date: 12-13 September, 2016

Venue: Uppsala University, Ångström Laboratory

Registration: <http://www.teknat.uu.se/research/uu-tt/>

All interested are welcome to participate and registration is free.

Japan-Lithuania Joint Life Science Symposium

This is the third joint scientific event organized by JSPS and the Research Council of Lithuania.

Date and time: September 13, 2016, 9:30-13:00

Venue: Meeting Hall No. 211, Research Council of Lithuania, Gedimino pr. 3, LT01103 Vilnius

Registration: <http://www.clst.riken.jp/en/topics/event/160929seminar/>

No charge to participate

Life Sciences Baltics Forum 2016

Life Sciences Baltics Forum 2016 is the only international forum in the Baltic countries for experts from all around the world to present world-class biotechnology, pharmaceutical and medical device, as well as broaden their horizons and exchange ideas and network.

Date: September 14-15, 2016

Venue: Lithuanian Exhibition and Congress centre LITEXPO, Laisvės ave. 5, LT-04215 Vilnius, Lithuania

Registration:

Information for registration can be found here:

<http://www.lsb2016.com/en/registration>

Upcoming Seminars and Symposia

KI Cancer Retreat

Karolinska Institutet, The University of Tokyo and JSPS Stockholm Office will hold a symposium with the theme of cancer research.

Date: September 26-27, 2016

Venue: Djurönäset

The 3rd RIKEN CLST Karolinska Institutet SciLifeLab Joint Symposium

This joint symposium was initiated with the objective to build a broader and closer partnership between RIKEN CLST, Karolinska Institutet and SciLifeLab. This year's symposium is entitled "Frontiers in Life Science Technologies – Decoding Health and Disease".

Date and time: September 29, 2016, 9:30-17:15

Venue: Karolinska Institutet Campus, Stockholm, Sweden.

Webpage and registration:

<http://www.clst.riken.jp/en/topics/event/160929seminar/>

No charge to participate

KVA-JSPS Seminar

The KVA-JSPS Seminar is held in collaboration between The Royal Academy of Sciences (KVA) and JSPS Stockholm Office.

Dates and venues: 2016.10.13 (Lund Observatory)
2016.10.17 (Stockholm University)
2016.10.18 (Uppsala University)

Speaker: Professor Shigeru Ida, Earth-Life Science Institute, Tokyo Institute of Technology

SAC Activity Seminar at KTH

The JSPS Alumni Club in Sweden and JSPS Stockholm Office will hold the seminar with the theme "Novel Methods for Using Music Interaction to Address Wellbeing and Health Improvement in Training and in Leisure".

Date: October 11

Venue: KTH Royal Institute of Technology

SAC Activity Seminar at the University of Borås

The SAC Activity Seminar "Paper Yarn Textiles and Fashion – a compostable raw material for the future" will be held at the University of Borås. Prof. Hideaki Morikawa from Shinshu University is invited to give a lecture, and the company OJI Fiber from Tokyo will also attend.

Date: 2016.10.20

Venue: Textile Fashion Centre, University of Borås, The Swedish School of Textiles

6. Notice

Upcoming Seminars and Symposia

KVA-JSPS Seminar

The KVA-JSPS Seminar is held in collaboration between The Royal Academy of Sciences (KVA) and JSPS Stockholm Office.

Date and venue: 2016.10.26 (Uppsala University)
2016.11.01 (Stockholm University)
2016.11.03 (University of Gothenburg)

Speaker: Professor Masatoshi Sato, Kyoto University, Institute of Theoretical Physics

ACF All Alumni Meeting

The ACF All Alumni Meeting will be held with the Alumni Club in Finland, Hokkaido University Helsinki Office and JSPS Stockholm Office.

Date: October 27, 2016

Venue: To be decided

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



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