

Kobe University

Brussels European Centre

A New Era of Japan - Europe Academic Cooperation

Opening Symposium

1 March - 7 March

2011

Square Brussels Meeting Centre
Brussels, Belgium



Kobe University Brussels European Centre Opening Symposium

Preface

As the President of Kobe University, it was an honour to have the opportunity to hold the commemorative symposium “A New Era of Japan — Europe Academic Cooperation” as an opening event for Kobe University Brussels European Centre.

The development of education and research in Japanese universities proceeded upon the basis of various strong academic ties forged and established between Japan and Europe. Particularly in recent years, there has been an increase in the number of joint researches, academic collaboration and exchange taking place on equal terms among researchers. These instances of educational and academic collaboration between Japanese and European universities have fundamentally been carried out on bilateral bases. However, in the course of the rapid integration of the European countries, education and research have been carried out in the form of such international frameworks as FP, the Erasmus Mundus programme, and with joint research facilities. A movement has also started in Japan to convert the form of international collaborations in education and research from a bilateral to a multilateral one.

The purpose of this symposium was to illuminate the new aspects of the developing Japan-EU academic cooperation and in this respect, I believe we have achieved this objective with the excellent presentations from the representatives of the governments and academics from both Japan and Europe. I would like to deliver my heartfelt appreciation to those who provided us enormous support and assistance in realising this symposium.

As His Excellency Mr Herman Van Rompuy, President of the European Council mentioned in his speech at the beginning of the symposium, we have just made the first day of a new era of Japan — Europe academic cooperation and we will pursue every possibility in promoting fruitful and productive collaboration between Japan and Europe in the years to come.

A handwritten signature in black ink, reading 'Fukuda Hideki'.

FUKUDA Hideki
President of Kobe University

Kobe University Brussels European Centre
Opening Symposium
A New Era of Japan — Europe Academic Cooperation

3 March 2011

European Economic and Social Committee
"Between Survival and Sustainability"

4 March 2011

Square Brussels Meeting Centre
"Japan — EU Education Policy Seminar
Internationalisation of Higher Education in Japan and the European Union"

"Japan Europe University Networks"

"Protein Kinase C: A key molecule from Kobe University"

"Historical role of Belgium and the Netherlands in European Integration"

"Bacillus biotechnology and its prospective future"

5 March 2011

Université libre de Bruxelles
"Roles of Culture in the Foundation of European Integration"

7 March 2011

Katholieke Universiteit Leuven
"Europe - Japan Technology Exchange toward Contribution of IRT to Medical Care and Welfare - From Physical Assistance to Cognitive Assistance"

1 March — 7 March 2011

The Culture and Information Center, the Embassy of Japan in Belgium
Panel exhibition "A New Era of Japan — Europe Academic Cooperation"

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The Arc 10:00 - 12:00

“Japan-EU Education Policy Seminar Internationalisation of Higher Education in Japan and the European Union”

PROGRAMME

- 10:00 Opening Address: Dr Hideki Fukuda, President of Kobe University
- 10:20 Speech: HE Mr Herman Van Rompuy, President of the European Council
- 10:35 Response speech: HE Mr Nobutake Odano, Ambassador of Japan to the European Union
- 10:40 Lecture: Mr Xavier Prats Monné, Deputy Director General, Education and Culture DG European Commission
Excellence and exchange - the value of EU-Japan academic partnerships
- 10:55 Lecture: Mr Laurent Bochereau, Acting Head of Unit, International Cooperation Policy, D/1DG for Research and Innovation, European Commission “EU - Japan S&T cooperation under the EU Seventh Framework Programme for Research and Technological Development”
- 11:10 Lecture: Mr Kiyoshi Shimizu, Vice Minister, Ministry of Education, Culture, Sports, Science and Technology, Japan “Current Situation and Policy Challenges in Japanese Higher Education”
- 11:25 Lecture: Prof Dr Paul Van Cauwenberge, Rector of Ghent University
“University research and education within the European context”
- 11:40 Lecture: Dr Hideki Fukuda, President of Kobe University “Japan - Europe collaboration of Higher education in Internationalization - importance of open network - ”



Conferral ceremony of Doctor Honoris Causa

Dr Hideki Fukuda, President of Kobe University conferred the Doctor Honoris Causa upon President Herman Van Rompuy of the European Council in recognition of his significant contribution to Kobe University. He was also presented with a scroll on which a Haiku was written in Japanese by a prominent calligrapher, Emeritus Professor Kazuaki Uozumi of Kobe University. The Haiku is the one President Van Rompuy quoted in the speech he gave upon his visit to Kobe University April last year.



HE Mr Herman Van Rompuy

President of the European Council



Let me start by saying a very simple word. A word which is maybe not used so often in politics: thank you. And let me even try it in Japanese: ありがとうございます = Dōmo arigatō !

Indeed, I should like to thank Kobe University for bestowing this honour upon me. It is a privilege. And I should also like to thank you, Mr. President, for your kind and generous words.

I do not know for sure whether I deserve the honour. But just in case I do not, I will certainly try, during the remainder of my mandate as President of the European Council, to make sure that I do deserve the honour by the time I leave office! *(So in that case, you will have made a good investment in the future!)*

I do think it is important to energise the relationship between the European Union and Japan. We should aim to do so at all levels: politically, economically and between our civil societies and universities.

As I said during my visit to Japan in April last year, I attach a great importance to our relationship. Both on the European and on the Japanese side, we maybe tend to underestimate its potential. And this is why the work which you, as Kobe University, are doing is so important. Your European Centre in fact is the first ever overseas office of a Japanese university in Brussels, and I should like to congratulate you on that. With this opening, you create a new hub for our relationship. A new and strong knot combining all the threads that link our two societies.

The political changes in the world — the rise of China, India and other emerging economies — affect both of us. They change the political landscape, our respective relationships with the United States for instance. However, we can benefit still more than ever from a strong relationship. It remains key to our prosperity.

The summit between Japan and the EU, which was held in Tokyo in April of last year, was for me one of the most interesting international meetings of 2010. **And not only because it was an inspiration for my haikus!**

It was a privilege to meet the Emperor and the then Prime Minister Hatoyama. Later last year, at the two G20 meetings, I met Prime Minister Naoto Kan. I am looking forward to receive the Prime Minister in Brussels later this year for the

EU Japan Summit. I hope to be able to bring a strong message on behalf of the European Council.

Some of you may be less familiar with the intricacies of the Brussels system. And I know it is not easy for outsiders to grasp it! However, the same is true for political life in Washington or Tokyo.

Complexity is a feature of almost any system of government. **Except for dictatorships!** One could see the European Council of the 27 Heads of State or Government as the Union's strategy body.

This distinguishes our work from what the Commission, the Parliament and the Council are doing at a daily basis: turning legislative proposals into rules for our 500 million citizens and our millions of companies.

The work of the European Council, of a more general and political nature, is about determining the direction, about setting the course. Where do we go? And by now I can tell you from experience: to get 27 Heads of State or Government in the same direction, is no easy task!

We succeed nevertheless. All 27 share the conviction that we belong together and have to work together. It is as true in economic matters as it is in dealing with the recent events in the rest of the Arab world. And it is also true for the way we see our relationship with Japan.

I just said that we can strengthen our relationship:

- in political terms;
- in economic terms;
- and in terms of the contacts between our societies.

Let me say a brief word on each of these three subjects in turn.

First on the front of politics proper. We have a lot in common, as I said. Japan is a peace loving country. You have never used force since 1945. You are a force of stability in a region where old-style power games reappear.

Both the European Union and Japan aspire to play a stronger role on the international scene. Yet our cooperation on political issues falls well short of what it should be. We could do more together, like we already do for police training in Afghanistan, or in fighting piracy off the Somali coast. Think of working together on counterterrorism or on non-proliferation.

Another such issue is disaster relief. In Europe we have noticed with interest the recent actions taken by Japan in this respect. For instance after the earthquake in Haiti and the floods in Pakistan, both during 2010. That's why one may appreciate the Japanese proposal of a Japan-EU cooperation in the field of disaster relief, the so-called "Ueta-initiative", which was tabled last month.

The second point, how to intensify our economic relationship? Even in the changing world of today, and even if we energise our political bonds, trade -- pure trade -- will remain the backbone of our relationship. An obvious way to intensify the trade between our two blocks would be a Free Trade Agreement.

The European Union is aware of Japan's strong interest in embarking on negotiating a Free - Trade Agreement. I think it would also be of interest for European businesses and consumers.

Today a High Level Group examines the possibilities and that work is still going on. Therefore it is still too early to say what the EU position will be at the next summit on the possible launch of a Free Trade Agreement process.

However, at this stage I can already make two general points. Such an upgrading of the trade relationship should be comprehensive and balanced. Comprehensive, because we

see trade in the terms of our overall political relationship. Balanced, because the kinds of barriers faced by EU and Japanese companies on the respective markets are different in nature. I will not speak in front of this audience about technical issues such as "non-tariff barriers", but this aspect should be taken into account. The benefits of abandoning tariffs should not all fall on one side. But we are open to discuss it. And I am convinced we will reach a good result together.

This brings me to the third point: the contacts between our two societies. Students, business people, travellers & tourists: the exchange of ideas and perspectives is key. And this of course is really what the Brussels European Centre of Kobe University is about.

I was pleased to learn that in the overseas institutes your University is establishing, this one here is only the second -- after the centre opened two years ago in Beijing (*which indeed, as the capital of your neighbour, may deserve a special place*.....). Therefore I take this Brussels Centre itself as a sign of your strong interest in establishing stronger relations with Europe and our Universities.

As you know, the very institution of the "University" was a European invention. Think of Bologna, Oxford, the Sorbonne, or Leuven: venerable places of learning going all the way back to the Middle Ages. And yet our universities from all over the continent are very strong global players, at the cutting-edge of innovation, and oriented toward the future.

A side remark. It is my conviction that our two societies share this unique capacity to link old experiences and ancient wisdom to the challenges of our own age. In Europe and in Japan, men and women do not only live in the present, forgetting about the past and walking blind into the future. No, we permanently build bridges from the past to the future, to allow us to step forward with confidence. This gives our societies an inner stability, an ability to deal with the many challenges and unknown elements which we face in the world of today, while keeping the core of our identity. People elsewhere may envy us for that.

The European Union welcomes the Japanese efforts of internationalisation of academic life. I was impressed to discover that your country wants to achieve, by 2020, to have 300.000 Japanese students abroad, and 300.000 foreign students in Japan. Compared to current numbers, these are certainly ambitious targets! You will thus no doubt attract more "global talent", people who can think on their own and bring new perspectives. The effect on society will be considerable.

Kobe University clearly shows this openness to the world already. By establishing this Brussels office. But also for instance by your role in the EU Institute Japan "Kansai"—the institute which it was my pleasure to visit last year.

We in the European Union have played an important role in the internationalisation of academic life. First, internally, we developed the famous "Erasmus Program" for student exchanges. Over the years, it has allowed more than 2 million students to study in another European country. More recently, we have developed a global variant: "Erasmus Mundus", which aims at enhancing international mobility.

However, too few Japanese students have benefitted so far from Erasmus Mundus. There is untapped potential and I do hope it will be explored by the younger generations.

This is how I see the possibilities for energising all the relationships between the European Union and Japan. On the political and the economic side, and at the side of our societies and universities.

I am very grateful for the work you, as Kobe University, do in this respect. And that is why I am very confident that the title

of your Conference will prove full of foresight. Today is indeed the first day of: "A new era of Japan - Europe Academic Cooperation".

HE Mr Nobutake Odano

Ambassador of Japan to the European Union



A rich civilisation and cultural heritage have accumulated in both Europe and Japan for many centuries.

The success and achievements of both nations have been achieved through the determined efforts of our descending generations and their genius. Formal and informal education, tutoring and artisanship played an indispensable role in enriching our civilisation. In today's world University education is in

particular vital .

Today, Europe and Japan enjoy respectively stable and prosperous civil societies which are based on a set of fundamental principles and values, such as plural democracy and the rule of law, human rights, freedom of speech and an open market economy.

Japan and Europe must cope with global challenges including the economic and financial crisis, climate change, humanitarian assistance, WTO trade negotiations, and an aging population. Japan and the EU have also widened and deepened their bilateral cooperation.

The most recent example is a S&T cooperation agreement, which can inspire innovation for the future. Innovation is one of the key concepts for the EU 2020 strategy for sustainable growth.

We do not have to limit our cooperation to the immediate concerns of issues in the political, economical and social fields.

Japan and the EU can compare notes on education, by facilitating academic and student exchanges, promoting academic research and the exchange of innovative ideas with the future in mind.

Today, this educational seminar, is the start of such a collaboration. Kobe University took the initiative to organise this event in collaboration with the European Union and European universities.

I hope this initiative continues.

I would like to share with you a proverb or saying that President Van Rompuy introduced at the Belgium and Japan association meeting a few weeks ago; *Keizoku ha chikaranari*. It's a saying in Japanese, which means . continuity is a source of strength or persistence is a power or practice made perfect. This saying can be applied to Japan and the EU cooperation.

Persistence is a power. I do have high hopes, that the last twenty years of EU and Japanese strategic discussions can be further added too, to ensure substantial cooperation in the future. Let us now truly un-tap the potential of Japan and the EUs strategic cooperation and friendship.

"Excellence and exchange - the value of EU-Japan academic partnerships"

Mr Xavier Prats Monné

Deputy Director General, Education and Culture
DG, European Commission



Kobe University is a cosmopolitan institution that contributes to the global community through its institutional values and by creating knowledge in a spirit of integrity and freedom. Kobe University has set itself a target of global excellence by 2015 in the fields of education, research and its contribution to society.

It is a privilege for the European Commission to take part in the

opening of their Centre here in Brussels today. It is an indication that Kobe University thinks Europe can contribute to their mission statement and to their ambitions of excellence, and if this is indeed the reason why you set up this Centre, the Commission is ready to support you in whatever way it can. We recognise Kobe University as a friend of Europe. You co-host the EU Institute in Japan, Kansai and you have also created a Jean Monnet Chair in EU economic studies. But we will support you for other reasons as well, since for us it is obvious that academic cooperation between the EU and Japan is in our mutual interest and we, the EU and Japan, must rise to the same challenges in the field of education.

Let me just remind you what our challenges are.

We all recognise the economic value to society of a strong higher education system. But recently both our societies are very much aware of how important tertiary education is, the right type of tertiary education for the future development of society. Young people must have the right skills to adapt to a world that is rapidly changing, to new markets and new technologies and to far stronger competition among high-quality graduates. We have a rapidly shrinking cohort of young people in both Japan and Europe, and yet a growing need for research-based innovation and for tertiary education achievement. Both the EU and Japan will thus need to make better use of their human capital.

For example, in Europe since 2007 we have had more women graduates than men. Women in Europe have better academic results and a lower drop-out rate from secondary education. However, this strong presence of women disappears once you enter the labour market or a professional career in universities. This is the type of challenge we have to meet if we are going to use our human capital in full.

We need to make sure we increase of the relevance of our studies, otherwise you can spend a lot of money on education for precious little result. If very highly trained university students do not use their training or their skills when they start their productive life, they can become very educated and very frustrated young people.

Hence the need for increased transparency and increased internationalisation of our academic system. As President Van Rompuy mentioned, there is a need, within the context of internationalisation, for a strong drive towards autonomy and accountability of universities, to help increase the quality of our tertiary education.

Since 2004, Japan has made a very strong push to modernise tertiary education, and since 2009 the Global 30 campaign has supported greater internationalisation by Japanese universities. The European Commission is doing the same, most recently through the Europe 2020 strategy. Within this strategy, Europe has managed to squeeze a large

number of priorities into 5 simple objectives, 5 simple headline targets that Europe has to meet by 2020. Two of those targets are directly linked with education; what is more important, none of these 5 targets that Europe has identified as being key to its future can be reached without strong efforts to support human capital through education.

We are now in a very challenging time for the European Commission and for myself. Over the next 6 months, we have to establish two things: firstly, the proposal for the new generation of education programmes in the future budgetary period after 2013; secondly, we will present a strategy for the modernisation of higher education in September this year.

Certainly, there is no way to modernise higher education without this strong drive for internationalisation and international cooperation. We will continue to encourage cooperation between institutions in the EU and Japan and I hope this Centre will be not just an outstanding example in itself, but an example that other universities in Japan and the EU will follow.

"EU-Japan S&T cooperation under the EU seventh Framework Programme for Research and Technological Development"

Mr Laurent Bocheau

Acting Head of Unit, International Cooperation Policy,
Directorate General for Research and Innovation



EU-Japan S&T cooperation is mainly implemented through the EU Seventh Framework Programme for Research and Technological Development (FP7), the main instrument to fund research at European level. FP7 will run until 2013 and has a budget of over 53 billion euro. FP7 is organised in 4 main specific programmes the "Cooperation" which promotes collaborative research; the "Capacity" for the enhancement of

infrastructure, "Ideas" for sponsoring mainly frontier research in Europe; and the "Marie-Curie" to promote mobility within Europe and beyond FP7 is fully open to the participation of international partners on the basis of mutual interest and benefits.

Currently, Japanese research teams participate in 44 projects and 30 Marie-Curie fellowships were provided to Japanese researchers/institutions.

4 million euro in total is the contribution made by the European Commission to Japanese research teams participating in FP7 projects.

I now would like to introduce some of the examples in which Japanese research teams are involved:

1. SYNER-G: developing new systemic methodology for both economic and social aspects in vulnerability and risk analysis. A research team of Kobe University is participating in this project.
2. CO2CARE: developing CO2 site closure assessment
3. MODHEP: This is in life science for developing systems biology for liver cancer

I hope Kobe University Brussels European Centre will help promoting the participation of Kobe University and other Japanese research entities in the current and future FPs. A new era of EU-Japan S&T cooperation is about to start. After 6 years negotiation, a S&T agreement between the EU and Japan was signed in November 2009 and is expected to enter into force shortly. The first Joint Steering Committee meeting under the auspices of the agreement is foreseen to take place in mid June in Tokyo. We have strong expectations that the entry into force of the agreement will open the avenue for strengthening our cooperation in the future.

Following the publication of the EU 2020 strategy and the need to include innovation, the Commission in the past months has been busy discussing the future of European research programmes. I now would like to introduce our ideas for the new programmes which will succeed to FP7, at present called "Common Strategic Framework for Research and Innovation (CSF)". The priorities of the CSF are

1. Address societal challenges; Pool efforts to tackle societal challenges that have a global dimension.
2. Support EU competitiveness; enhance the international dimension of public-private partnerships and contribute to economic trade.
3. Support excellence of research; enhance the international dimension of European Research Council, Marie Curie Actions.

The Commission has recently published a "Green paper Towards a Common Strategic Framework for EU Research and Innovation funding". This Green Paper launches a public consultation on the key issues to be taken into account for future EU research and innovation funding programmes, including international cooperation. We welcome your feedback and comments to this scheme.

"Current Situation and Policy Challenges in Japanese Higher Education"

Mr Kiyoshi Shimizu

Vice Minister, Ministry of Education, Culture, Sports,
Science and Technology (MEXT) Japan



I will explain the following three points on Japanese higher education: 1. Circumstances surrounding the higher education in Japan; 2. Current policy challenges the Japanese government is tackling; 3. Future expectation in Japan-EU collaboration.

1. Circumstances surrounding the higher education in Japan
The entry rate for higher education in Japan has already reached universal stage, but as population

in Japan steadily declines, it would be necessary for institutions to provide education for those who have quite diverse background and views for their future.

2. Policy challenges in higher education

The Japanese government stipulated a Basic Plan for the Promotion of Education in 2008. The three fundamental issues were:

- 1) Guaranteeing and improving the quality of education; "Quality Assurance and Enhancement" system has been adopted. This is quite balanced system with prior evaluations and post facto evaluations, most of which are applicable to all kinds of universities including national, municipal and private institutions.
- 2) Formation of world-class centers of research and education
The Global COE (Center of Excellence) Program has been implemented and a new initiative to succeed the Global COE Program is under consideration.
- 3) Internationalization of Japanese universities
Considering special features for Asian countries which are different from that of the EU, we are taking initiatives in the following four elements:

I) Promotion of international exchange of students
We have more outbound students to the United States and Europe, while the inbound is mainly from Asian countries such as China and Korea.

II) Development of international cooperation between universities

On the institutional level, although the latest agreements are with Asian countries, more than 20 percent of the agreements are with Europe. There are over 50 agreements concluded between Japanese and Belgium universities.

III) Development of infrastructure to respond to globalization
New schemes are being proposed for the next fiscal year "Leading Graduate School" and "Strengthen universities' ability to expand around the world," and support for outbound and inbound of students, including very short-term visits.

IV) Regional cooperation in Asia

This initiative includes a kind of credit-transfer framework called "UMAP" with Asian and the Pacific countries", and "SEED-net" networking project which enables Japanese and Asian universities with equal footing to send competitive master-level graduate for the society and JSPS supporting schemes for high-profile students and researchers.

Furthermore, "Campus - Asia" project has been launched to promote university exchange with quality assurance and fair grading among Japan, China and Korea. JCK are preparing for launching pilot program this year.

In addition to those initiatives, various research cooperation programs are being implemented between Japan and Europe.
V) Researchers exchange between Japan and Europe
According to the survey of the MEXT, the number of researchers visiting Japan from Europe shows an increasing tendency since 2007, while the number of researchers from Japan to Europe has been leveling off. We see a tendency of so-called inward-looking attitude of Japanese young researchers.

VI) S&T cooperation between Japan and Europe
Japan Science and Technology Agency support research exchange and joint research in the fields of environment and superconductivity. Furthermore, collaborations in the fields of space (International Space Station etc), the oceans (Integrated Ocean Drilling Program etc), environment and nuclear powers (ITER etc).

VII) Japan-EU Agreement on S&T Cooperation
This Agreement was signed in November 2009. Based on the signing of this agreement, the possibility of future cooperation in such fields as realizing a low carbon society, climate change, researchers exchange, space, materials science and health/life science were discussed in a Preparatory Meeting on S&T Cooperation between Japan and the EU held in Tokyo last April. The first Japan-EU joint meeting on S&T cooperation will be held in Tokyo this year.

VIII) Japan — EU Summit

An agreement was reached particularly on strengthening cooperation on R&D in innovative technology and the promotion of cooperation in the joint statement which was made in Japan — EU Summit last April.

3. Expectation for Future Japan — EU Collaboration

Both Japan and EU have important issues in today's mature society, such as maintaining sustainable economy and social security system, adjusting to the aging society, social integration, and fierce competition in cutting-edge technology. The more close ties universities and research institutes in Japan and the EU can make, the more they will find the proximity on what they have to solve, and therefore they will ask for more collaboration with each other. The efforts such as today's symposium will be a real step on which many stakeholders including universities, research institutes, governments and civil organizations, proceed to launch good practice, share information, and make networking.

"University research and education within the European context"

Prof Dr Paul Van Cauwenberge

Rector of Ghent University



In the light of my presentation about university education and research, I applaud the efforts of Kobe University to establish its European centre. A recent study of the European University Association shows that the majority of the European university rectors sees internationalisation as the most important policy in the last 5 years. It is hard to deny that universities worldwide live in an increasingly

open world under the influence of international standards. This competitive environment brings many challenges for university education and research. It goes without saying that all of the challenges can be tackled best through international university collaborations. Since Bologna much has already been done within Europe to break isolation in this increasingly open world, by now we can speak of the European higher education area and the European research area. The true value of the event today is in my opinion that it shows that all the European efforts and developments have created a real interest within certain countries and certain institutes outside the European Union for the European higher education and research areas. And if I am not mistaken this was one of the fundamental ambitions behind it all. I therefore thank Kobe University for crystallising the interest and to make us aware of the fact that we have arrived only at the beginning of university internationalisation.

International education at Ghent University is riding on the crest of student mobility. Thanks to the Erasmus

programmes, high numbers of students and staff are going back and forth between our university and our partners in Europe. Mobility opportunities in our university have expanded to some parts of the world through the different Erasmus Mundus partnerships. Currently Ghent University is coordinating several of those partnerships. However, none of these cover Japan yet. It is massive European Union funding complimented in some cases by regional funding that makes mobility possible. I believe various rationales can be seen behind public funding on such a huge scale. Ghent University as a higher education institution benefits from staff and student mobility which requires cross border, institutional networking, leading to share objectives, curriculum, learning and teaching methods, or management practices, and recognition of qualifications to work effectively. The European mobility programmes have made us much more aware of the importance of attracting good foreign students and sending our own students abroad. It ensures transparency in degrees and sets standards in the teaching and learning process and promotes quality. I therefore praise the announcement in 2010 of the MEXT's plan to standardise student evaluation methods with universities in Japan, China and South Korea. It gives my great pleasure that Japan is leading the way in this integration of the methods to evaluate students academic achievement and certify academic credits. This possible first step towards Japan and Asian student exchange programme shows that Japan is keen on internationalising its higher education system. The opening of KUBEC might be an indication that in the future the number of Japanese students studying in the European higher education area might become the pre-standard for Japanese higher education policy makers. Since some years Ghent University notices a shift in the mobility patterns of students. It seems that mobility for a shorter period has gradually been replaced by degree mobility. Most valuable examples of degree mobility are joint programmes. My university already invested heavily in the development of joint programmes. At this moment, Ghent University coordinates 7 Erasmus Mundus master courses, 1 Erasmus Mundus joint doctorate programme and participates in 2 other master courses. We believe that these programmes combine advantages of exchange with more profound quality. In the future, my institute would like to invest even more in joint international programmes maybe with Japanese universities because now there is no Japanese partner in one of these programmes.

Regarding research, internationalisation is also important. Our university sets internationally competitive research as a major objective. In 2009, our university launched 5 multi-disciplinary partnerships in the selection of our strongest research fields. These fields include photonics, biotechnology, immunology, neuroscience and bio-informatics. At our university, international collaboration is conducted everyday with the colleagues of universities around the world working on joint research, reviewing academic papers, organising conferences and giving seminars. Only a few involve Japanese institutions in both academic and non-academic actors.

Important objective of our university as a research policy is to attract as much research funding as possible and involve our researchers in prestigious international research projects. The most relevant instrument therefore is the European framework programme. Almost 11 % of Ghent University research spending or 24 million euro annually is based upon the European framework projects. We support our researchers in writing proposals, finding best partnerships, guiding them through the selection procedures and helping to manage the current research. Furthermore, we have chosen to implement several incentive measures to stimulate our researchers to take on a role of coordinator in EU projects by giving them an appropriate supporting staff and offering them permanent positions. For our university it is important to encourage its researchers to become more connected with global research communities in their disciplines.

I hope this KUBEC opening symposium and sessions within the next few days will be fruitful to lead to staff and student mobility as well as to international joint programmes and research collaboration.

"Japan - Europe collaboration in Higher education for Internationalization – importance of open network –"

Dr Hideki Fukuda

President of Kobe University



I will focus on the internationalization of research universities in Japan. I would like to start with the international mobility of Japanese higher education in regards to historical perspective. Geographical and cultural locations have heavily influenced the development of Japanese higher education. Japan is an archipelago at the end of

Eurasia. In the olden days, crossing the ocean was costly and as a result, Japan sent highly talented persons abroad to absorb new knowledge. This was mainly to China at first and in the last one hundred and fifty years to Europe and North America. These talented individuals did not only bring new knowledge back to the country, but they also modified Japan to adapt to these knowledge. It was a very effective way for Japan to achieve higher education and handled European thoughts as well as Asian thoughts in Japanese, our mother tongue. Many historians believe higher education in the Japanese language played a key point in Japan's attainment of its modernization and democratic society in such a short time. Today this structure makes a clear regional difference in international mobility: Europe, North America and Asia. International communication and mobility are the most important key elements to promoting higher level education and research. Development of ICT is reducing communication cost dramatically. Contrary to this international mobility is yet costly.

In order for researchers and students to leave their motherland to go to study in a foreign country, it is necessary that the benefit is greater than the cost they paid.

For this reason, Japanese universities are increasing benefits and reducing costs. The main approaches to increasing benefits are: strengthening specialty, course building and career path building. The main approaches to reducing cost are: increasing the number of courses taught in English, the standardization of regulation and the informative action. It is well known that there are two types of international mobility; the horizontal relation between developed regions and the vertical relation between developed and developing region. International mobility between Japan and Europe is a typical horizontal relation. We both offer similar undergraduate and postgraduate programmes. For this reason, it is not easy for students to find more benefit than cost. As you know, cultural distance or language difference is a big problem for many foreign undergraduate students, because undergraduate courses are taught mainly in the languages of that country in both Continental Europe and Japan. If they wish to learn or experience a totally different culture and society, the greater distance is directly connected to their benefit. However, this is not the case for young researchers and Post-Doc Fellows. Research specialty is the key to international mobility. If they find a suitable place to study, it is possible for them to receive more benefit than the cost they paid. Reducing matching cost is more important for them than for the undergraduate

students.

As a university located in one of the most important port cities connecting Japan with the rest of the world, we decided to play the role of a key institute for international exchanges and collaborations in education and research and to foster individuals who have an appreciation for diverse values, a deep understanding of other cultures and excellent communication skills.

We have promoted international education with emphasis on quality. Whereby, we created various joint education programmes including a double degree program.

We also tailor our plan to regional features considering the changing roles of international research and education in the regions under growing globalization. Thus, we made regional plans for Europe, North America and Asia. Promotion of collaboration and joint research on global issues with leading universities in Europe were the main actions taken in 2005. One of these was becoming the coordinating university of a consortium "EU Institute in Japan, Kansai" with financial support from the European Commission. EUIJ consists of Osaka University, Kwansei Gakuin University and Kobe University.

Moreover, we established overseas centers in Beijing and in Brussels with an aim to promote multilateral collaboration in education and research with universities and institutions in Asia and Europe.

We opened Kobe University Brussels European Centre or KUBEC in September 2010 as a centre with the aim of promoting international collaboration between Kobe University and universities and research institutes in Europe in the fields of Humanities, Social Science, Natural Sciences and Bio-Medical Sciences in hopes that it will act as a mutual Information Centre between Japan and Europe. Our academic staff will hold international symposia and workshops with their European colleagues regularly to enhance direct human relation. We believe these activities will promote future joint research projects and increase the opportunity for younger researchers and students to study abroad.

It will also work to further promote international exchange and programmes such as double degree programs, joint doctor programs and summer seminars; there are many possibilities. As former speakers, Mr. Prats Monné, Mr. Bochereau, Mr. Vice Minister Shimizu and Professor Van Cauwenberge showed, Europe has developed international collaboration framework in education and research and European universities achieve great results in this framework. Now considerable efforts on the part of the European and Japanese Government have expanded this framework to Japan.

I believe KUBEC is capable of playing an important role in this framework. We are ready to plant the seeds of international joint research and to promote research-based education. To achieve this, academic network based on KUBEC should have an Open structure and a Linkage to Asian academic network.

The Arc 13:30 - 15:00

"Japan-Europe University Networks"

Chair: Dr Hideki Fukuda, President of Kobe University

Coordinator: Prof Chiharu Nakamura, Executive Vice President of Kobe University

PROGRAMME

13:30	Introduction: Dr Hideki Fukuda, President of Kobe University
13:35	Presentation: Prof Hiroshi Takeda, Executive Vice President of Kobe University
13:50	Presentation: Prof Kiichiro Tsuji, Vice President of Osaka University
14:05	Presentation: Prof Jean-Didier Lecaillon, Vice Président de l'Université Panthéon-Assas
14:20	Presentation: Mr Michael Gaebel, Head of Higher Education Policy Unit, European University Association
14:35	Round-up: Prof Chiharu Nakamura, Executive Vice President of Kobe University
14:50	Closing remarks: Dr Hideki Fukuda, President of Kobe University



In response to the discourse in the morning session on the new way of mutual academic collaboration between Japan and Europe, this Japan-Europe University Networks discussed the approach or initiatives taken by individual institutions/organisation in the context of their country, society and culture. The initiatives of two Japanese national universities and an European institution were introduced by Vice Presidents of each institution and the European reform of higher education was reported by the representative of the European University Association.



Professor Hiroshi Takeda, Executive Vice President of Kobe University outlined organisation of international activities and research aspects. As a comprehensive university, Kobe University is establishing an integrated research base to promote multi-disciplinary advanced research to tackle with global issues, which will make a use of an advantage of international collaboration. The University has worldwide international research networks of which Professor Takeda introduced some examples including CERN in Geneva and Double Chooz experiment in France.



Professor Kiichiro Tsuji, Vice President of Osaka University introduced its strategies for internationalization. The University has 4 overseas centres in San Francisco, Groningen, Bangkok and Shanghai. Having a base in Groningen, the University is developing educational programmes including Erasmus Mundus and ICI-ECP in collaboration with their partners in Europe. They are also expanding their research networks with European institutions, in particular through their COE programmes.

Professor Jean-Didier Lecaillon, Vice President of Université Panthéon Assas mentioned that Kobe University is the first partner institution for Université Panthéon Assas and the University gradually has developed their partnerships with Japanese institutions. In order to enable foreign students in general, and Japanese students in particular, to come to Paris and



share pedagogical and reciprocal experiences by offering interesting prospects. One of the international programmes which is for the International Trade and Management Master course includes a foreign study trip and in the year 2009-2010, the University sent their students to Kobe University and companies in Kansai and Tokyo.



Mr Michael Gaebel, Head of Higher Education Policy Unit, European University Association, illustrated the developments in the reform of European higher education. EUA is an organisation who has over 800 members and its core task is to strengthen the European universities, with quality assurance and internationalization among the priorities for European universities. EUA has been involved directly — as a consultative party, representing Europe's universities - into the policy process of the Bologna Reforms and, in close cooperation with its memberships, it promotes its further development and implementation. The Bologna Process, including the 3 cycles of Bachelor, Masters and Doctorates, diploma supplement, recognition, quality assurance and other protocols, resulted in 2010 in the launch of the European Higher Education Area. In the framework of its global dialogue and internationalisation activities, EUA is exchanging and cooperating with Asia partners and has brought initiatives such as EU-Asia Higher Education Platform and contributed to the ASEM Education Process.



In the end, a coordinator, Professor Chiharu Nakamura, Executive Vice President of Kobe University concluded the session with his comments on the globalized society: a paradigm shift in our society brought us 1) changing economic and social systems, 2) multi-polarizing world, and 3) globalization and internationalization. The key is cooperation and collaboration with partners by developing advanced and leading model systems and creating diverse and advanced intellectual property for the realization of the quality and safety for securing society. Furthermore, factors to foster creativity and originality are ability and aptitude of individual scientists and research surroundings. He also emphasized the role of hybridization (exchange) and integration as a driving force of evolution of our society.

Room 311 13:30 - 18:00

“Protein Kinase C: A key molecule from Kobe University”

Protein kinase C was found in Kobe University in 1977. This is a key molecule in the various cellular responses such as proliferation, differentiation and neuronal functions. We focus on the progress of PKC research in this symposium and promote the collaboration between Kobe University and various EU universities.

PROGRAMME

- | | | |
|-------|------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| 13:30 | Assoc Prof Fabienne Willems, Université Libre de Bruxelles | “Regulation of dendritic cell function by protein kinase C” |
| 14:10 | Prof Isabel Merida, Spanish National Council (CSIC) | “Diacylglycerol kinases put the brake on diacylglycerol-based signals.” |
| 14:50 | Prof Yasuhito Shirai, Kobe University | “Role of PKC ϵ in the keratinocyte differentiation ~focusing on its binding to Ral A~” |
| 15:30 | COFFEE BREAK | |
| 16:00 | Prof Naoaki Saito, Kobe University | “PKC γ and its involvement in neuronal diseases” |
| 16:40 | Prof Matthijs Verhage, VU Medical Center | “PKC-dependent pathways in synaptic plasticity of CNS nerve terminals” |
| 17:20 | Prof Godefridus Peters, VU Medical Center | “PKC β as a target and modulator for novel cancer therapies” |



Protein kinase C (PKC) was found in Kobe University in 1977 by Prof. Nishizuka and his colleagues. The discovery of this enzyme created a new scientific field and attracted many scientists all over the world to this new “signal transduction”. In this symposium “Protein kinase C: a key molecule from Kobe University”, four

(Amsterdam) revealed the importance of PKC in synaptic plasticity of nerve terminals. He demonstrated the evidence that phosphorylation of Munc 18-1 by PKC is necessary for the presynaptic plasticity using various knock-in mice. The final speaker, Prof. Godefridus Peters, talked about more clinical science. His finding using PKC β inhibitor clearly showed that PKC β can be a target for new cancer therapy. There were not so many audiences but all of them were very interested in the symposium. They were from UK, Belgium and other EU countries and discussion was active. Some of them, including MRCT, already proposed us to collaborate. The symposium was very fruitful to show the high quality of science in Kobe University and also our earnest interest in collaboration with EU universities as well as exchange of young researchers.

scientists from EU countries and two from Kobe had lectures about recent research about PKC.

First speaker was Dr. Fabienne Willems from Université Libre de Bruxelles. She presented new data that specific PKC subtype is individually involved in specific cytokine release from dendritic cells. Prof. Isabel Merida from Spanish National Council demonstrated the interaction of PKC and diacylglycerol kinase in T cells. She focused on the diacylglycerol, a PKC activator, and showed its spatio-temporal function in T cell synapses. Prof. Yasuhito Shirai from Kobe University showed the role of PKC ϵ in keratinocyte differentiation and demonstrated that RalA is a possible binding partner for PKC ϵ in differentiation. In the second part, Prof. Naoaki Saito from Kobe presented his recent studies of PKC in neuronal diseases. His talk was focused on PKC targeting mechanism at a single molecule level. Dr. Matthijs Verhage from VU Medical center



Room 313 15:30 - 18:00

"Historical role of Belgium and the Netherlands in European Integration"

Today, Brussels is considered by many as a kind of Capital of Europe and its centrality should be considered in historical context that Belgium and the Netherlands or Low Countries have played in the long process of European Integration. So this symposium focuses the function and structure of metropolitan cities in Low Countries from 14th to 17th century.

PROGRAMME

15:30	Opening address: Prof Takashi Okunishi, Kobe University "Theoretical understanding and Historical reality"
15:40	Keynote lecture: Prof Wim Blockmans, Universiteit Leiden "Metropolitan at the Northern Sea"
16:15	Lecture: Prof Bruno Blonde, Universiteit Antwerpen "The restructuring and diversification at the supply side and changing consumer patterns at the demand side."
16:50	Lecture: Prof Clé Lesger, Universiteit van Amsterdam "From Antwerp to Amsterdam. Differential growth and shifting centres of gravity"
17:25	Lecture: Prof Peter Spufford, University of Cambridge "The role of Belgium and the Netherlands is the development of European Financial Centres"

This symposium was organized by Takashi Okunishi (Professor of Kobe University) in order to make it clear that Belgium and the Netherlands or Low Countries have played as a centre in the long process of European Integration in focusing the function and structure of metropolitan cities in Low Countries from 14th to 17th century.

Firstly, Takashi Okunishi made the opening address; "Theoretical understanding and Historical reality" at 15:30 - 15:40.

He stressed that Brussels role as a kind of Capital of Europe and its centrality should be considered in historical context that Belgium and the Netherlands or Low Countries have played in the long process of European Integration. Some political historian have noticed Belgian role at reconciliation between France and Germany after second world war and they have related it with its location Border between Latin Culture and German Culture, or vestige of Frank kingdom. Role of Commercial and financial centre from late middle ages to early modern times has been noticed in a similar context by economic and social historians. In order to study the emergence, development and shifting of metropolis in Low Countries. We should collaboratively make a theoretical analysis with some key concepts such as Stochastic Fluctuation, Self Organization and Scale-Free Network and a substantive research of its multiple elements or historical reality.

Then, Wim Blockmans (Professor of University of Leiden) made the keynote lecture; "The Dynamics of the Metropolises at the North Sea" at 15:40-16:15.

He explained that the river delta of the Low Countries has been at the heart of the dynamics of the capitalist world-economy since the twelfth century. The locations of the metropolis shifted over time with imitation and innovation. Their capacity of adaptation to sustained growth is at the core of a noticeable continuity; 1. Delta connects buoyant regions, 2. High population density and urbanization, 3. Continuous demand and offer. Regional shifts implied structural adaptations to world-economy and political conditions, 4. Gateways integrate beyond boundaries. This reflects the evolution of the world-economy as a whole. Two lectures on Antwerp and Amsterdam followed Blockmans lecture.

Bruno Blonde (Professor of University of Antwerp) made his lecture; "Antwerp and the Material Renaissance; Reflections on the role of demand patterns and economic changes" at 16:15-16:45

He started a summary of historical study on consumer changes in early modern Europe. Then he described the detail of sixteenth-century Antwerp and the 'material renaissance' and made his conclusions; from the 'material renaissance' to the 'industrious revolution'; 1. Change: Late middle ages and long sixteenth century: Important **qualitative changes**: widespread acceptance of 'populuxe' goods. 2. Continuity: 'Consumer changes' of the 17th and 18th centuries matured in centuries-old process. 3. The material renaissance was marked by a falling income elasticity of 'new luxuries'; relative price changes, product and process innovations; high urban incomes > allocation of household resources. 4. Key role of urban societies and the middling sort of people ever since late middle ages.

Clé Lesger (Professor of University of Amsterdam) made his lecture: "From Antwerp to Amsterdam; Differential growth and

shifting centres of gravity" at 16:45-17:15.

He elaborated on the spatial economy of the Low Countries and the political turmoil during the Revolt. He used them to clarify the shift of the centre of gravity within the Low Countries from Antwerp to Amsterdam in the late sixteenth and early seventeenth centuries. Then he stressed the importance role of Amsterdam as Centre of information exchange and concluded his lecture with a picture of a Price current which showed that the price currents were long lists of commodities and their prices on the Amsterdam market. He explained that in the first decades of the seventeenth century the price-current gained a more official character, as it bore the coat of arms of the city and an announcement that the prices had been checked by five members of the brokers' guild and this emphasized the objectivity and reliability of the information it contained. The Amsterdam Price current was published every week and it was cheap as well. Nowhere in Europe price currents were published that matched the broad range of commodities and none matched the frequency and the low costs of the Amsterdam price currents. Amsterdam Price currents were also translated into Italian, French (the international language in commerce) and English. Finally, Peter Spufford (Professor of University of Cambridge) made his lecture; "The role of Belgium and the Netherlands is the development of European Financial Centres" at 17:15-17:50.

He summarized the history of shift of financial centre from late middle ages to modern times, then described several important economical social factors of the financial centres that Bruges, Antwerp and Amsterdam have provided from 15th to 17th century. In this explanation he compared them with those of London in later time. He stressed that London has remained the primary international centre, not only for Europe, but for the world as well, for well over two centuries. How much longer it will remain is problematical, since England has long lost its commercial and industrial importance. London, therefore, like Bruges, Antwerp and Amsterdam, has remained the financial centre long after losing its trade and industry. What has been remarkable about all these financial centres has been that the people involved have come from many different places. The City of London is today a country of its own within Britain. The same could be said in the past for Bruges, Antwerp and Amsterdam.

Q&A session was set after lecture session at 17:50- 18:15



Room 314 13:30 - 18:00

"*Bacillus* biotechnology and its prospective future"

The intimate EU-JP cooperation in *Bacillus* research was materialized in 1990 when the international consortium for genome sequencing was established and has been maintained involving the successful projects such as the EU-funded BACELL. In this session, five speakers present their expertise along with their international cooperative experiences and discuss about the future prospects.

PROGRAMME

13:30	Opening address: Prof Ken-ichi Yoshida, Kobe University
13:35	Prof Ken-ichi Yoshida, Kobe University "Functional genomics on <i>Bacillus</i> : strategy and application"
14:20	Prof Bernard Joris, Université de Liège "Engineering <i>Bacillus subtilis</i> genome"
15:05	COFFEE BREAK
15:30	Prof Colin Harwood, University of Newcastle "The <i>Bacillus</i> cell factory: stress and productivity"
16:15	Prof Jan Maarten van Dijl, University of Groningen "Challenges and opportunities for <i>Bacillus</i> research on protein production"
17:00	Dr Philippe Noirot, INRA, CRJ " <i>Bacillus</i> research in systems and synthetic biology"
17:45	Closing remarks: Prof Chiharu Nakamura, Kobe University Kobe University

Functional genomics on *Bacillus*: strategy and application

Ken-ichi Yoshida

Department of Agrobioscience, Graduate School of Agricultural Science, Kobe University, Japan



The entire genome of *Bacillus subtilis* comprising more than 4,000 genes was determined by the successful collaboration amongst European and Japanese researchers. Since then, this organism representing the *Bacillus* genus has been regarded as one of the model systems to study functional genomics both in basic and applied aspects. The genome is the entirety of hereditary

information of an organism, which is in fact divided into two categories of the "known" and "unknown" genes, and many of the researchers in the field of functional genomics are making efforts to turn the "unknown" into the "known". In the case of *B. subtilis* studies, the researchers took a cooperative strategy to increase the "known" genes, and now almost 60% of the genes are "known" as assigned a specific role whilst the rest 40% are yet "unknown" for their function. Then, how can we use functional genomics for application? The "known" genes are predicted to be assigned to "known" metabolic pathways, which can be modified to improve their original capacity to produce desired compounds. On the other hand, the "unknown" genes are functionally identified to discover "new" pathways, which can be enhanced and extended to produce new and additional targets. Our expanding knowledge of *B. subtilis* functional genomics now allows us to attempt possible rational approaches to develop biotechnology using the *B. subtilis* cell factory to produce a variety of chemicals to fulfill our demands in materials, food, and health.

Engineering *Bacillus subtilis* genome

Bernard Joris

Centre d'Ingénierie des Protéines
University of Liège - Belgium



The completion of the sequencing and annotation of the *Bacillus subtilis* 168 genome supply a complete view of the *B. subtilis* protein machinery, and this knowledge stimulates new approaches to analyze biochemical pathways. This postgenomic study requires genetic tools that allow the combination of several gene manipulations in the same strain. Classically, these chromosomal

modifications could be achieved by a method using a positive selection marker, usually an antibiotic resistance marker generated by the insertion of a selection marker gene in the *B. subtilis* chromosome. In this strategy, the introduction of a second chromosomal modification requires a second resistance gene, or, if the same resistance gene is used, the eviction of this gene by a single crossover event prior to further genetic manipulation. To overcome the problems listed above we have developed a novel method that combines the use of *blal*, which encodes a repressor involved in *Bacillus licheniformis* BlaP β -lactamase regulation, a *B. subtilis* strain that is conditionally auxotrophic for lysine and DNA cassette containing *blal* and the spectinomycin resistance genes and two short direct repeat DNA sequences, one at each extremity of the cassette. This strategy was successfully used to inactivate a single gene and to introduce a gene of interest in the *B. subtilis* chromosome. Two examples will be presented: the first will involve the production of lipopeptides from *Bacillus* and the second, the characterization of *B. subtilis* YoaJ protein involved in the interaction of *Bacillus* with plants.

The *Bacillus* cell factory: stress and productivity

Colin R. Harwood

Centre for Bacterial Cell Biology, Institute for Cell and Molecular Biosciences, Newcastle University, UK



Bacillus subtilis and its close relatives have been used extensively for the production of industrial enzymes, fine biochemical, vitamins and flavour enhancers. As a result of its commercial importance, and the fact that 50 years ago it was the first non-pathogenic bacterium to be successfully genetically transformed with isolated DNA, *B.*

subtilis has become one of the best-studied living organisms. Both European and Japanese scientists have a long and distinguished track record for studying the genetics and molecular biology of this bacterium and the extensive collaborations between these scientists that developed in the 1990's have helped to accelerate progress towards the potential for an even greater exploitation of this bacterium in the field of white biotechnology.

A key element in maximizing productivity is a clear understanding the behaviour of this bacterium during its cultivation. In particular how it behaves in response to the stresses imposed by manipulating its ability to overproduce proteins and metabolites and by the fermentation conditions used to maximise growth. To this end, *B. subtilis* has been subject to extensive studies aimed at understanding how it controls the production of its proteins at both the level of gene expression (transcriptomics) and translation (proteomics). Knowledge of the master cell regulators, and how their behaviour is coordinated, is key to optimising the *Bacillus* cell factory, and examples from the work of European and Japanese will be given to show the progress in this field.

Challenges and opportunities for *Bacillus* research on protein production

Jan Maarten van Dijk

Department of Medical Microbiology, University Medical Center Groningen and University of Groningen, the Netherlands



Bacteria secrete numerous proteins into their environment for growth and survival under complex and ever-changing conditions. The highly different characteristics of secreted proteins pose major challenges to the cellular protein export machinery and, accordingly, different pathways have evolved. These secretion pathways have been the focus of fundamental and

applied research both in Europe and Japan. While the main secretion (Sec) pathway transports proteins in an unfolded state, the twin-arginine translocation (Tat) pathway can

transport fully folded proteins. For a long time, these pathways were believed to act in strictly independent ways. In recent studies, we have employed proteogenomic approaches to investigate the secretion mechanism of the esterase LipA of *Bacillus subtilis*, using hyper-producing strains. While LipA is secreted via Sec under standard growth conditions, hyper-produced LipA is secreted predominantly via Tat through an unprecedented overflow mechanism. This overflow secretion mechanism raised the possibility that the secretion pathway choice can be determined not only by intracellular conditions, but also by environmental conditions. This idea was challenged by determining the effects of environmental salinity on Tat-dependent protein secretion by *B. subtilis*, since this soil bacterium can encounter widely differing salt concentrations in its natural habitats. The results show that environmental salinity determines the specificity and usage of the *B. subtilis* Tat pathway. Interestingly, the studies even identified an essential function of the Tat system for growth of *B. subtilis* under low-salinity conditions. Taken together, our findings show that both intracellular and environmental factors can determine the specificity, substrate spectrum and biological function of bacterial protein secretion via the Tat pathway. This opens up new avenues for biotechnological applications of *B. subtilis* in protein production.

Bacillus Research in Systems and Synthetic Biology

Philippe Noirot

Head of "Systems and Synthetic Biology", Institut Micalis, INRA, Jouy en Josas, 78352 France



Bacillus subtilis is one of the best studied bacterium, second only to *Escherichia coli*, and is the model organism for Gram-positive bacteria, a large group including pathogens causing diseases in humans as well as soil-dwelling bacteria heavily used in biotechnology. A vast body of knowledge about gene functions, cellular pathways, regulatory

networks, and cell architecture has been accumulated by the scientific community. Rapidly developing high throughput technologies provide information virtually on all cellular components. In combination, these facts have enabled the emergence of systems biology in *Bacillus* by attracting mathematicians and engineers who could build mathematical models based on existing data and test the model predictions by new experiments. A potent facilitator of systems biology in *Bacillus* is the long-standing and fruitful collaboration between European and Japanese researchers in the fields of functional genomics and tool development.

Here, I will review some of the milestones in the development of systems biology and more recently of synthetic biology in *Bacillus*. This research holds the promises of understanding how the cellular processes functionally integrate at the cell level and of rationally designing pathways to exploit the biosynthetic and degradative capabilities of microbes for human benefit.

BETWEEN SURVIVAL AND SUSTAINABILITY

THE CORPORATE SOCIAL RESPONSIBILITY
IN THE TIMES OF ECONOMIC CRISIS
(Experience of the EU and Japan)

3 March 2011

European Economic and Social Committee

Van Maerlant Building
Rue Van Maerlant 2
1040 Brussels
Room VM 3

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- From 14.00 p.m. Registration of participants**
- 14:30 — 14:40 Opening remarks**
Ms Eve Päärendson, President of the EESC Contact Group for Japan, Group I - Employers
Prof Hiromasa Kubo, President of the EU Institute in Japan, Kansai, Graduate School of Economics, Kobe University, Jean Monnet Chair Ad Personam
- 14.40 — 15.40 Session I - Impact of the global economic crisis on the perception of the Corporate Social Responsibility – time to re-define?**
- Moderator: **Mr Krzysztof Pater,** Member of the EESC Contact group for Japan, the EESC Various Interests' Group
- Speakers:
Mr Sandy Boyle, the EESC, President of the Section for External Relations
Prof Silke Bustamante, Berlin School of Economics and Law: "*CSR in Europe*"
- Prof Katsuhiko Kokubu,** Graduate School of Business Administration, Kobe University : "*CSR in Japan: What is social responsibility for Japanese companies?*"
Mr Richard Howitt, Member of the European Parliament, Rapporteur on CSR
Mr Thomas Dodd, CSR team, Directorate General Enterprise and Industry in the European Commission
- 15.40 — 16.00 Debate**
- 16.00 — 16.15 Coffee break**
- 16.15 — 17.15 Session II – New challenges for the companies and the stakeholders**
- Moderator: **Prof Masahiko Yoshii,** Vice-President of EU Institute in Japan, Kansai/Graduate School of Economics, Kobe University
- **Addressing the rising stakeholders' expectations towards companies (employers' point of view)**
- Speakers:
Mrs Vladimira Drbalová, member of EESC Employers Group
- Ms Yukako Kinoshita,** Japan Business Council in Europe (JBCE)
- **Fostering of the sustainable employment (employees' point of view)**
- Speakers:
Mrs Laure Batut, Member of the EESC Contact Group for Japan, the EESC Employees' group,
Associate Prof Yuki Sekine, Graduate School of Law, Kobe University: "*CSR and Employment in Japan*"- **CSR and good governance - environment, consumers' protection, transparency, etc. (various interests' group point of view)**

Speakers:
Mrs Evelyne Pichenot, EESC Various Interests' Group
Prof Hiromasa Kubo, President of the EUJ, Kansai, Graduate School of Economics Kobe University

17.25 — 18.10 Debate

18.10 — 18.30 Closing remarks

Ambassador Norio Maruyama, Political Section, the Mission of Japan to the EU

18.30 — 20.00 Reception offered by the EESC, Van Maerlant Building

BETWEEN SURVIVAL AND SUSTAINABILITY: THE CORPORATE SOCIAL RESPONSIBILITY IN THE TIMES OF ECONOMIC CRISIS

(Experience of the EU and Japan)

OPENING REMARKS

Ms Eve PÄÄRENDSON, President of the EESC Contact Group for Japan, Employers Group:

The Corporate Social Responsibility (CSR) is of high importance for the companies and societies of the EU and Japan and is increasing in public industrial policies as well as in corporate strategies.

Two similar seminars were held in Tokyo and in Kobe in 2009 on how to promote CSR among the SMEs. The objective of the seminar was to share and improve the understanding of European and Japanese approaches to corporate social responsibility and to see how to work more closely together to promote CSR among companies what role civil society organisations may have in this process and how respective civil society organisations could better cooperate on CSR.

Prof Hiromasa KUBO, President of the EU Institute in Japan, Kansai Kobe University, Jean Monnet Chair Ad Personam:

Stressed on the long history of cooperation with EESC and underlined that the Japanese and European companies have to act in a more responsible way. He mentioned that the European and Japanese companies don't have the same vision of CSR and emphasized that both sides can learn from each other.

SESSION I: Impact of the global economic crisis on the perception of the Corporate Social Responsibility — time to re-define?

Moderated by Mr Krzysztof PATER, Member of the EESC Contact Group for Japan, the EESC Various Interests1 Group

Mr Richard HOWITT, Member of the European Parliament, Rapporteur on CSR:

Regardless the global economic crisis, CSR should not be redefined: one should rather focus on practical implementation of CSR (On the contrary, sustainable social approach for business is needed, the ISO 20600 responsibility is crucial. Mr Howitt noticed that transparency is crucial to develop greater social environmental responsibility. The human rights aspect is to be operationalised in business.

Mr Sandy BOYLE, the EESC, President of the Section for External Relations:

CSR should not be redefined, but different definitions and strategies should be implemented; CSR is not a cost, but an investment. When multinational companies are concerned, their stakeholders are customers and staff working within the industries; exposure to human rights risks for investment activities is a question of governments. European multinationals are operating good standards of CSR, but they are not uniform in their application: sustainable terms of trade as well as implementation of internationally recognised health and safety standards are just examples of issues, which should be considered.

Prof. Silke BUSTAMANTE, Berlin School of Economics and Law: "CSR in Europe: The impact of the global financial crisis

on the perception of CSR":

CSR should be considered as a cure to market failures (also those which caused present economic crisis: moral hazard; asymmetric and hidden information, free-rider problem). It has always to be defined in reference to the stakeholders; social order is not guaranteed by public actors (that is the reason why the recognition of CSR is needed), definition of responsibilities in CSR is very important. The four major drivers of CSR are: society, business/economy, politics/law and technology/environment. The crisis influenced expenses on CSR initiatives (its impact being focus on banking and financial sector only, neglecting other areas at the same time)

Prof. Katsuhiko KOKUBU, Graduate School of Business Administration, Kobe University: "CSR in Japan: What is social responsibility for Japanese companies?"

CSR is seen in Japan as a three-way satisfaction strategy: benefits to the seller, to the buyer and to the local community, companies and societies being a single entity. Human rights issues, labour practices, consumer issues, fair operating practices are perceived as ones where the public authorities should play a role, therefore not very much disclosed in companies' reports. Introduction of ISO 26000 may enlarge Japanese companies' and stakeholders' recognition of CSR

Mr Thomas DODD, CSR team, Directorate General Enterprise and Industry in the European Commission:

Debate on CSR is a debate on the purpose of business. If one agrees the purpose is to maximize the value for shareholders, then CSR is not needed. That is why it is important to define the purpose and potential of business.

SESSION II — New challenges for the companies and the stakeholders

Topics:

- Civil Society and CSR in Japan
- Addressing the rising stakeholders' expectations towards companies Fostering of the sustainable employment
- CSR and good governance environment, consumers protection, transparency

Moderated by: Prof. Masahiko YOSHII, Vice-President of EU Institute in Japan, Kansai/Graduate School of Economics, Kobe University

- Addressing the rising stakeholders' expectations towards companies (employers' point of view):

Mrs Vladimira DRBALOVÁ member of EESC Employers Group: "How to change the mindset":

CSR is a part of day-to-day companies' activity, of their management system. Depending on the size each company has to define and to use different methods of how to be socially responsible (the concept of CSR is not and should not be static). It is necessary to respect the CSR's voluntary nature. Depending on its size, each company has to define its own methods on how to be socially responsible. Real needs of stakeholders should be balanced. The primary role of the European Commission should be to target and to reconcile

stakeholders' expectations towards companies. Transparency is a fundamental element of companies' business strategies, unique transparency indicators could be counterproductive, however.

Ms Yukako KINOSHITA, Japan Business Council in Europe. (JBCE): "Japan Business Council in Europe, CSR Committee: Priorities and recent activities":

The study group was created within the CSR Committee of Japan Business Council in Europe with the objective to facilitate dialogue with European institutions and Japanese CSR players. The main priority is to be transparency potential use in achieving common goals of sustainable development. The main challenge is to define how far should go transparency and the best way for a company to disclose.

- Fostering of the sustainable employment (employees' point of view)

Mrs Laure BATUT, Member of the EESC Contact Group for Japan, the EESC Employees' Group:
In spite of growing number of legislative measures addressing the "social" issues, there is still a need of criteria by which the consumers, workers and other stakeholders could assess the performance of the companies. Although it improves the quality of relations between the enterprise and its internal and external stakeholders, CSR should by no means replace the dialogue between employers and trade unions. A new form of CSR is needed, which would develop the skills of workers to provide the employer with necessary skills. Sustainable job should be defined as the one that respects production process, offers decent wages, good working conditions.

Associate Prof. Yuki SEKINE, Graduate School of Law, Kobe University: "CSR and Employment in Japan":

The CSR perception by Japanese companies is welfare-oriented and aims at high consumer satisfaction. CSR should be more stakeholder-oriented, focused more on diversity of the work force and family friendliness. CSR in Japan at the present is short- term oriented, life-time employment does not exist anymore

- CSR and good governance environment, consumers protection, transparency (various interests' group point of view)

Mrs Evelyne PICHENOT, EESC Various Interests' Group:

CSR should involve all stakeholders (external as well), their multilateral interests, take into consideration interests of sub-contractors. A constructive dialogue on how to manage the mutual interests and expectations is to be realized by negotiations, consultations and meetings. Transparency is a

key role for responsible management strategy.
Prof. Hiromasa KUBO, President of the EUJ, Kansai, Graduate School of Economics, Kobe University: "Civil Society and CSR in Japan":

Presented a history of labour movements in Japan. Civil society organizations in Japan are not very developed due to different obstacles: lack of resources, bureaucratic burdens, long administrative procedures. Japanese companies are recognizing the importance of CSR increasingly.

CLOSING REMARKS

H.E. Norio MARUYAMA, Ambassador — Political Affairs, Japan's Mission to the EU: Reminded the necessity of strengthening the EU-Japan partnership to implement the joint efforts in growth strategy for creating sustainable development. Civil society involvement in the co-operation could become an inspiration for the way the bi-lateral co-operation will develop.

Ms Eve PÄÄRENDSON, President of the EESC Contact Group for Japan, Employers Group:

The EU and Japan are facing similar challenges and goals: competition from emerging economies, climate change, macroeconomic constraints, the need to promote innovation etc. People-to-people contacts are of highest importance for the EU and Japan relations especially in the context of creation the new co-operation framework. Should bi-lateral trade relations be advanced, the pattern of EU -South Korea FTA should be followed with civil society forum as one of the key element of the bi-lateral dialogue. There is a strong link between CSR and growth strategy. CSR is key for sustainable development. CSR's concept as set by ISO 26000 is respected in 100%. There is dilemma however, between the rising taxes ratio and social responsibility of the governments (which the companies are expected to take over as well). The diversity of stakeholders plays important role in proper implementation of CSR.



Roles of Culture on the Foundation of European Integration

5 March 2011
Université Libre de Bruxelles

PROGRAMME

Opening address: Takashi OKUNISHI
(Director, Kobe University Brussels European Centre)

Speech: Tomokazu SAKANO
(Dean, Graduate School of Intercultural Studies, Kobe University)

Speech: Paul ARON (Université Libre de Bruxelles)

Gilles FERRAGU (Université Paris Ouest Nanterre la Défense)
"Religious values in the European being"

Isabelle MEURET (Université Libre de Bruxelles)
"Literary journalism in Europe: Alternative voices narrating history"

Satoshi TERAO (Kobe University)
"Freedom of movement and conservation of the diversity of the culture: The principle of territoriality vs. the principle of personality"

Helmut EBERHART (University of Graz)
"Pilgrimage as an event of encounter: Possibilities and chances for an interreligious dialogue and for a new identity construction in Europe"

Discussant: Salvatore SOMMA (University of Naples "L' Orientale")
Discussant: Shinnosuke MATSUI (Kobe University)

Concluding remarks: Kazunari SAKAI (Kobe University)

Résumé

Which role does culture play in the process of European integration? While you can suppose it plays a positive part as the pivot of unification, you can also think it plays a negative one that produces a barrier between the inside and the outside and prompts friction and opposition. Today, we tried to investigate these kinds of culture functions in the development of the European Union.

Contents

Professor Ferragu, specialist on International relations history and roles of Christianity, revealed, at first, the historical fact that the European society banded together just like Christendom through battles against Muslims since the Middle Ages. He also indicated that Christianity has not been the only, but one of several core factors which have unified the European society.

Quoting the Turkish case Professor Ferragu distinguished two categories in Europe concerning the roles that Christianity played in the foundation of European integration: 1) Europe as an "identity", and 2) Europe as a "project". Europe as an identity is the awareness of a community, in which Christianity has played an important role. Europe as a project is based on a political will to establish permanent peace and prosperity overcoming war and conflict, where Europe should be in charge of promoting European common and fundamental values, i.e. human rights, democracy and rule of law, to areas outside Europe as well as inside. Here Christianity doesn't play a major role directly but Europe (especially referring to the EU) functions as a propagator or

mediator of such values in order to overcome or prevent wars and conflicts. Europe has the potential to build a peaceful coexistence with the Muslim world close to and incorporated in the EU.

From the point of view of the transfer of thoughts, of the way of communication, of the diffusion of ideas, the possibilities of "literary journalism" presented by professor Meuret are very stimulating and interesting. She defined it and developed that: "Literary journalists are writing history; not mainstream history; rather, they address the question of the representation of reality from a different perspective. Reportage [which is a typical example of literary journalism] is journalism in action; it implies that writers travel, discover new cultures, observe different mores, and transfer that information to potential readers."

We can recognize that, at the heyday of literary journalism, 1) different traditional ways of journalism converged gradually and many models of "reportage" were produced, which describe important changes of the culture which had made up "Europe". 2) literary journalism contributed to send individuals' voices as alternatives to tell history.

It is difficult to say that literary journalism itself developed European integration but it indicated that intercultural contacts are very productive in Europe where different cultures coexist. Picking up voices in the margin in Europe and sharing values with them, it has attracted considerable public attention, showing the entire and real figure of Europe.

Professor Terao developed the discussion from the point of view of socio-linguistics and history: how the European Union protects minority languages in the situation of a "liquifaction" of an international society i.e. the remarkable increase of migration is evident in a globalized era.

He focuses on "territoriality", which is a political and social principle Europe innovated and diffused all over the world in the process of formation of the modern sovereign state system. Although its deconstruction (free movement of people beyond borders) has been developed only in Europe through the formation of the European Union, in the context of reinforcement of borders between the inside and the outside, territoriality has been strengthened. He criticized that the distinction between "protected minority languages" and "non-protected ones" was made according to the origins of the languages from inside Europe or outside Europe. Indicating the contradiction between "principle of territoriality" and "principle of personality" is caused through language rights and human rights, Prof. Terao analyzed to which degree the territoriality should be relativized in the European integration, in comparison to the situation of the regional integration in Eastern Asia.

Professor Eberhart focused on "pilgrimage" and presented a view to analyze the European integration from the perspective of cultural anthropology. Taking the example of a church of pilgrimage, Mariazell, he analyzed the meanings of the Christian pilgrimage in Europe and also the pilgrimage phenomena around the world.

One can see that the activity of visiting a sacred place has been practiced gradually in the secular context rather than the traditional religious one, i.e. the activity has become worldly and popularized. Many secular elements as well as religious ones have been incorporated into the pilgrimage activity. Here, what is important for the analysis on the foundation of European integration is especially intercultural dialogues beyond difference of religions and new identity formation in Europe through contemporary pilgrimage. It should focus particularly on the movement of people in Eastern Europe in the process of joining the EU. "Practicing the pilgrimage through the routes of the Middle Ages, they have become new citizens of the European Union."

For these 4 lectures, some significant comments and questions were posted to presenters by two discussants, Dr. Matsui and Mr. Somma. Through those questions, to which were added many questions and comments from the floor, discussion was deepened about the session's theme: the roles of culture in the foundation of European integration, its past, present and future.

Finally professor Sakai concluded the session raising some results and future perspectives.

Europe has always had a mainstream culture and minorities, and has suffered from difficulties to harmonize this cleavage, but managed to overcome it. In this context, it has produced several philosophical and/or subjective attachments among them, which must have been cultural (but there could have been negative aspects of culture which made the situation worse). So it is necessary to investigate how they found solutions to these problems, in which the research of both of social sciences (institutional aspects, for example economy and political regime) and humanities (philosophical and contents aspects) has been necessary, as well as the collaboration among them.

This is only the kick-off of the research cooperation about the cultural aspects of the foundational level of the EU between scholars from European universities (who are the parties concerned) and from Kobe University (who can be objective observers from the outside). It is advisable to continue the cooperation and furthermore develop today's discussion from more focused views.



Europe-Japan Technology Exchange toward Contribution of IRT to Medical Care and Welfare -from Physical to Cognitive Assistance-

7 March 2011
Katholieke Universiteit Leuven

PROGRAMME

Opening

- 10:00 E.Vander Poorten Welcome word by workshop organizers K.U.Leuven
10:05 Yasuyoshi Yokokohji Brief introduction of Kobe University and its IRT research activities Kobe University

Session 1 Physical assistance for medical and welfare applications

- 10:15 Herman van der kooji Lower extremity powered (wearable)assistive and therapeutic exoskeletons T.U.Twente
10:35 Zhiwei Luo On RI-MAN Shock-Physical Interaction between Human and Robots Kobe University
10:55 David A.Abbink Sharing control through haptics:feeling is believing T.U.Delft
11:15 Thierry Janssens VESALIUS laparoscopic robot K.U.Leuven
11:35 Sarthak Misra Robotically Steering Flexible Needles T.U.Twente
11:55 Lunch

Session 2 Cognitive assistance for medical and welfare applications

- 13:15 Bernard Pauwels Building and home technologies for people with disabilities and elderly InHam
13:35 Hiroshi Kawaguchi Low-Power Signal and Information Processing for Speech Communication Kobe University
13:55 Marie-Elisha Lerouge Zenio elderly monitoring Verhaert
14:15 Wolfgang Eberle Variations on brain-computer interfaces in medicine and pharmacology:in vivo and in vitro IMEC
14:35 Coffee Break
14:50 Eric Demeester Cognitive assistance for powered wheelchair navigation and the RADHAR project K.U.Leuven
15:10 Yasuyoshi Yokokohji Method for Extracting Support Needs from People with Early-Stage Dementia to Maintain Their Social Living Kobe University

Session 3 Japan-Europe Collaboration funding opportunities(FP 7 -ICT-HEALTH)

- 15:35 Takashi Okunishi Introduction of Kobe University Brussels European Centre(KUBEC) Kobe University
15:45 Herman Bruyninckx European Robotics Network K.U.Leuven
16:05 Zhiwei Luo Health Engineering for Aging Society Kobe University
16:25 Coffee Break
16:45 Greet Bilsen & Stijn Delauré Japan EU Collaboration in FP 7 ICT and Health Programs Leuven LRD & D.O.C.
17:05 Stephan Pascall Japan-EU collaboration in ICT EC
17:30 Panel Session:E.Vander Poorten,Y.Yokokohji, Z.Luo, H.van der Kooji, H.Bruyninckx, Stephan Pascall
17:55 Yasuyoshi Yokokohji Closure of meeting and welcome to the reception. Kobe University

Reception

1. Introduction

Japan and Europe are both facing a rapidly ageing society. They need to urgently address similar challenges if both want to maintain the current quality of living for their citizens.

Information and Robotics Technology (IRT) is seen as an essential instrument in order to face these challenges and both Japan and Europe are strong players in this field. Collaboration between Europe and Japan on IRT development to assist people not only physically but also cognitively could speed up developments, resulting in more general applicable and sound solutions to the common challenges posed by our ageing societies.

This workshop, organized by Kobe University and K.U.Leuven, is a part of the Opening Symposium of the Kobe University Brussels European Centre in short KUBEC (<http://www.office.kobe-u.ac.jp/opie/kubec/>). The goal of this workshop is to get an idea of activities on these issues in Europe and respectively Japan and to see how/if/when collaboration could be possible. The objective of this workshop can be seen in the following statement shown in the workshop brochure:

"Information and Robotics Technology (IRT) is expected to play a vital role in dealing with the aging society, by assisting people not only physically but also cognitively. European countries are very advanced in the field of medical care and

welfare, and many research activities dealing with IRT are ongoing. Also in Kobe University a healthcare engineering research group was established. The group includes not only engineers, but also health science researchers. The aim of this group is to utilize IRT effectively to progress healthcare and welfare. In this workshop, we will exchange ideas between Europe and Japan, aiming at the contribution of IRT to medical care and welfare. We will also discuss Europe-Japan Collaboration funding opportunities."

This report is a short summary of the ideas that were exchanged during this one day workshop in the mechanical engineering department of the K.U.Leuven (Heverlee, Belgium).

2. Program

The workshop can be divided in three sessions. Two research oriented sessions covered activities in EU and Japan on respectively physical and cognitive assistance technology. The target of the third session was to get an idea of how this type of research activities are currently conducted/ supported/ funded in EU and Japan and whether/how collaboration on these issues between EU and Japan could/should take place. A panel session on this issue concluded the meeting.

3. Participants

About 50 people participated in the workshop. The participants include professors and researchers from K.U.Leuven, U.Libre de Bruxelles, T.U.Delft, T.U.Twente, and Univ. of Hasselt etc. Researchers and engineers from some private companies such as IMEC, Maxon Motor, Verhaert, InHAM also participated. It should be noted that we have a participant from European Commission who is in charge of the European Framework Program on ICT and we could have an opportunity to discuss on research collaboration between Europe and Japan in the workshop. From Kobe University, four professors participated, Prof. Takashi Okunishi (Director of KUBEC), Prof. Zhiwei Luo, Assoc. Prof. Hiroshi Kawaguchi, and Prof. Yasuyoshi Yokokohji (co-organizer of the workshop).

4. Summary of the talks

Session 1 Physical assistance for medical and welfare applications “Lower extremity powered (wearable) assistive and therapeutic exoskeletons” by Prof. Herman van der Kooij

The session was started by the talk by Prof. van der Kooij. He presented the LOPES (Lowe-extremity Powered ExoSkeleton) project. The goal of the LOPES project is to develop a robotic device (LOPES) for gait training and assessment of motor function in stroke survivors. This involves designing the mechanical setup of the exoskeleton as well as its control structure. LOPES will be used to optimize the functional outcome of (robot-aided) gait training in chronic stroke survivor.

“On RI-MAN Shock - Physical Interaction between Human and Robots” by Prof. Zhiwei Luo

Prof. Luo presented the development of a human care robot RI-MAN. He emphasized that to support human care tasks, it is more important to estimate the cared person's motion ability as well as his/her emotion. The influence from engineering support to the human's motor function should be taken into account.

“Sharing control through haptics: feeling is believing” by Prof. David A. Abbink

Prof. Abbink introduced the concept of haptic sharing, shared control by human and machine through haptic information. He first showed haptic gas pedal of automobile where the reaction force of gas pedal changes depending on the distance from a car in front. Important point is that the system just indicates the possibility of collision in the future and the driver can keep the current speed if he wants by resisting the reaction force and keeping the current angle of gas pedal. He then introduced a new application to steering control. Adjusting neutral position and stiffness of the steering wheel, it is possible to guide the driver to keep the lane, changing the next lane, and changing the lane in either way to avoid the collision.

“VESALIUS laparoscopic robot” by Dr. Thierry Janssens

Dr. Thierry Janssens (K.U.Leuven), member of the Robot Assisted Surgery group of the K.U.Leuven <https://www.mech.kuleuven.be/en/pma/research/ras>, introduced the recent developments around the VESALIUS surgical robot platform, developed at K.U.Leuven. This patent-pending platform is used for surgical assistance during minimal invasive laparoscopic interventions. Compared to the famous Da Vinci® robot, this is a compact, low-cost solution, with reduced functionality. The robot features a compact adjustable remote centre of motion. This is necessary to align the remote center of motion created by the robotic mechanism with the entry-point in the human's body. This is where a lot of space is gained as compared to the Da Vinci®

robot that relies on voluminous arms to position the remote center of motion (patent by Blumenkranz). Next to a robot for laparoscopic laser surgery, which is being commanded through a writing pad, a laparoscope holder and a passive version of this system were developed and tested. Experimental results showed fast learning effects and improved operation effectiveness as compared to manual laparoscopic interventions.

“Robotically Steering Flexible Needles” by Dr. Sarthak Misra

Dr. Misra presented a unique needle insertion system by using a needle with asymmetric bevel tip. Needles with asymmetric bevel tips naturally bend when they are inserted into soft tissue. By rotating the needle, it is possible to control the bending direction and let the needle tip reach the designated location in the tissue. He presented an analytical model for the loads developed at the bevel tip during needle-tissue interaction. The modeled transverse force developed at the tip was compared to forces measured experimentally.

Session 2 Cognitive assistance for medical and welfare applications “Building and home technologies for people with disabilities and elderly” by Dr. Peter Deboutte

Dr. Deboutte introduced the activities of In-HAM vzw. In-HAM provides opportunities of crossing a bridge between the technology (construction, mobility, communication, home automation) and the solution that assistive technology supplies for the disabled and elderly person. In-HAM promotes research on existing and new building and home technologies taking into consideration the critical judgment of the end-user, his closest environment and the therapist. In-HAM also offers services to users with disabilities to achieve a qualitative adaptation of their living environment, to building constructors from the care and housing industry to the industry that gets opportunities to develop products that stand a real chance to be commercialized. The end-user will have an opportunity to test existing and recently developed aids on their validity. The end-user experience is a feedback for the manufacturer and a way to optimize the product through which the developed technology has more chance for a significant use. Dr. Deboutte also introduced a companion robot developed by a European project in which In-HAM was involved.

“Low-Power Signal and Information Processing for Speech Communication” by Prof. Hiroshi Kawaguchi

Prof. Kawaguchi covered two topics in his speech. After talking about research on ubiquitous sound acquisition and processing through a microphone array network, Prof. Kawaguchi introduced current research on a large-vocabulary speech recognition system. An ubiquitous sound acquisition system has as major benefit that it can record high-quality sound from any location within a room, without the need for a nearby microphone. E.g. speakers are do not longer need to be conscious of a microphone or its location. Through noise reduction and speech enhancement techniques non-relevant sounds can be filtered out. Sound is captured through a large array of microphones located at the walls of a room. These locate the sound source, record and process the data. Prof. Kawaguchi introduced a distributed processing scheme that allows fast calculations while maintaining a good quality. Once data is captured speech recognition techniques can be applied. Also in this domain Prof. Kawaguchi is active. During the second part of the speech a hardware approach for speech recognition developed at Kobe Univ. was introduced. The developed algorithms realize speech recognition at high accuracy, low power, yet cover a large-vocabulary database. It is not hard to imagine how these techniques when they become available at low price could result in domestic

applications that help people to live longer in an independent way.

“Zenio elderly monitoring” by Dr. Marie-Elisha Lerouge

Dr. Lerouge introduced Zenio Fall Detector developed by Verhaert. The intelligent fall detection device was developed in collaboration with Antwerp University. This intelligent device can detect 2 phases fall and recognize more than 10 different types of fall, eg. forwards, side wards, backwards, falling/gliding from chair, sliding, falling out of bed etc. Main features of this device include smart fall detector, emergency alarm button, Bluetooth connection, call (using a mobile phone) and SMS messages. The benefits of this device are reducing fear for falling and providing reassurance and more confidence to maintain an active, independent and self-sufficient lifestyle. The device is very user friendly with LED indication and buzzer, large panic button and allowing deactivation of alarm by a user. It has Zen inspired design. It is extremely reliable and provides permanent monitoring. Dr. Lerouge also mentioned a next generation of fall detector which is integrated with PDA or cell phone.

“Variations on brain-computer interfaces in medicine and pharmacology : in vivo and in vitro” by Dr. Wolfgang Eberle

Dr. Wolfgang Eberle is Program Manager of IMEC’s Cell Interfacing Technology and Manager of Bioelectronic systems. In this talk Dr. Eberle talked on variations on Brain Computer Interfaces in Medicine and Pharmacology. At present a plethora of brain-computer interfaces exist with different levels of invasiveness. IMEC is actively investigating a bottom-up approach for brain computer interfacing starting from interfacing a cell and molecular level. Depending on the purpose at hand: cellular function, disease research, drug discovery, medical therapy, interfaces need to be made at different levels. With different kind of cells or tissue types : neuronal, cardiac, fibroblast, auditory or olfactory,... under different conditions: dissociated cells, cell cultures, acute slices, cultured slices, acute in vivo or even chronic in vivo. In his speech Dr. Eberle went into more detail into two types of applications. First he discussed ‘in vitro platforms for drug screening and pharmacology’ talking about interaction @ single-cell level, cell-on-chip to brain-on-chip. Next he talked about implantable Microsystems for pharmacology, therapy and neuroscience on methods to improve deep brain stimulation therapies and finding new targets.

“Cognitive assistance for powered wheelchair navigation and the RADHAR project” by Dr. Eric Demeester

Dr. E. Demeester introduced work by K.U.Leuven on cognitive assistance for powered wheelchair navigation. The division of PMA has a long tradition in developing assistive technology for people with physical and cognitive disabilities, through participation in several national and international projects (EU projects on this matter were MAIA, MOVEMENT , Ambience). Recently, K.U.Leuven is coordinating the RADHAR project to develop techniques for robot adaptation during user assistance. In his speech, Dr. Demeester indicated the current state in wheelchair navigation assistance and clarified the targets of RADHAR to progress the state of the art. Wheelchairs will online identify the user characteristics (w.r.t. navigation capability) and will automatically adapt the level of assistance, presenting each user the just amount of assistance needed for safe and smooth navigation in a 3D-world.

“Method for Extracting Support Needs from People with Early-Stage Dementia to Maintain Their Social Living” by Prof. Yasuyoshi Yokokohji

In the area of welfare engineering, various technological

research and developmental efforts have been made to support people with dementia. However, it is not clear if these efforts are based on the real needs of these people. When providing support to people with dementia, it is essential to know exactly what their needs are. Nevertheless, it is not easy to obtain appropriate answers from these people by simply asking “How can we help you?” In addition, it is unlikely that answers from those people will cover all of their support needs.

In this talk, Prof. Yokokohji presented a new method based on the “Person-Centered Care” concept for eliciting the support needs from, and determining their priorities for people with early-stage dementia who are eager to maintain their social living despite coping with various difficulties.

Session 3 Japan — Europe Collaboration funding opportunities (FP7-ICT-HEALTH)

“Introduction of Kobe University Brussels European Centre (KUBEC)” by Prof. Takashi Okunishi

Prof. Okunishi, Director of KUBEC, introduced the background how Kobe University opened the KUBEC. He also introduced what H.E. Mr. Herman Van Rompuy, President of the European Council, mentioned in the opening symposium held in the last week. Prof. Okunishi emphasized the last word by Mr. Van Rompuy: “Today is indeed the first day of: “A new era of Japan - Europe Academic Cooperation”.”

“European Robotics Network” by Prof. Herman Bruyninckx

Prof. H. Bruyninckx, coordinator of the European Robotics Research Network gave an overview of robotics research at European level. The main stakeholders in robotics research in Europe are EURON (academic focus, gathering 229 member institutes), EUROP (industrial focus, including 120 member companies), euRobotics (a recent initiative to put one single face to European robotics) the European Commission and of course the general public. Prof. Bruyninckx discussed current activities between these different stakeholders, including the writing of a Strategic Research Agenda for robotics (SRA). This RSA is available online at <http://www.robotics-platform.eu/cms/index.php?idcat=26>. European industry and academia formulated their vision how to shape European robotics to establish a viable robotics industry in Europe by 2020. This is summarized in this SRA. Increased intercontinental research on robotics could be interesting, needed to tackle aspects related to differences in culture and differences in human physiology.

“Health Engineering for Aging Society” by Prof. Zhiwei Luo

This talk presented the health engineering research activities. Aging problem is widely recognized as one of the most serious social problems that have never been suffered in human history. In order to activate the aging society, establish of Health Industry is necessary. Our research aims to construct the solid scientific foundation for innovation of health engineering. We mainly target on following applications with respect to the human’s health levels: (1) Welfare support of healthy elderly people so as they communicate and contribute to the societies more easily and safely with happiness, (2) Training and health promotion, (3) Disease prediction and prevention, (4) Human care support, and (5) Rehabilitation of human motor functions and high order cognitive functions, by developing novel sensing and information technologies, virtual reality and robotics.

“Japan EU Collaboration in FP7 ICT and Health Programs” by Dr. Stijn Delauré

Dr. Stijn Delauré is Head of unit of the International Research Policy Unit of the Research Coordination Office of the K.U.Leuven. After a short introduction of the University of the K.U.Leuven, Dr. Delauré gave a brief overview on the R&D at K.U.Leuven discussing the policy context and indicating the international perspective. K.U.Leuven participates in International Networks such as the ‘Coimbra group’ the ‘European University Association (EUA)’ and LERU that binds 21 research intensive European universities. At present a number of academic collaborations between K.U.Leuven and Japan exist:

- Centrally: bilateral agreement for student & staff exchange with ‘Kansai University’.
- Faculty-level: bilateral agreements on student mobility with : Osaka University (School of Engineering), Waseda University (Philosophy), Nihon University (College of Engineering) and Universities of Rikkyo, Kyushu, Shinhu, Seijo (Arts).
- Networks for cooperation: Kansai University with K.U.Leuven Faculty of Arts (Japan-EU Research Centre) and Osaka University, Hokkaido University, Keio University, University of Tokyo with K.U.Leuven Dept. of Mechanical Engineering (2003-06) .
- Large-scale collaborative research projects took place with
 - Ritsumeikan University and K.U.Leuven Dept. of Physics (FP7-INFRA)
 - Keio University, Osaka University and K.U.Leuven LICOS (FP7-KBBE)
 - Kobe University and K.U.Leuven Dept. of Pharmaceutical Sciences (FP6-NMP)K.U.Leuven supports joint project applications between EU and Japan that start from a bottom-up researcher's initiative.

“Japan - EU collaboration in ICT” by Dr. Stephan Pascall

Dr. Stephen Pascall, Advisor to the Director Directorate C “Policy Coordination and Strategy” of DG Information Society and Media of the European Commission, recently returned from a diplomatic mission to Japan with exactly this purpose, explained some issues related to setting up a framework for future ‘structural’ collaboration on ICT between EU and Japan (top-down).

- For example it was noted that bi-lateral programs between Japan and one EU-member country (e.g. Germany, France) exist, but that similar programs between Japan and the EU as a whole are almost absent.
- Establishing structural collaboration between EU-Japan can only be successful under certain conditions.

Despite above conditions not being met at this point in time, an ‘Agreement between the European Community and the Government of Japan on Cooperation in Science and Technology’ (but still needs to be ratified by European Parliament) was made. The agreement includes the ‘Establishment of a Joint Committee on Scientific and Technological Cooperation’ to

- exchange of information and views and S&T policy, addressing past present and future cooperation activities;
- review access to funding programming and projects;
- bearing in mind the principle of reciprocity (access to each other's R&D funding programs).

This agreement is only a start. At the moment there are no easily accessible joint programs in the field of IRT and there are no big breakthroughs to this end. On the long term under above conditions collaboration schemes could be established, although experience thought this will not happen easily.

5. Short summary of discussion during panel-session:

After the talk by Dr. Pascall, the panel-session started. The discussions mainly went on why structural (top-down) collaboration is not possible now, how we can collaborate (bottom-up) and on which topics collaboration could/should be done.

Examples of current collaboration are bottom-up organized research activities initiated from the research groups themselves. Some examples were given of projects including Japanese companies and European universities:

- Prof. Abbinck and T.U.Delft had successful collaboration with Japan, starting from a student contract, moving towards a PhD. Being satisfied with the results the Japanese company (Nissan) pursued a continuation of the collaboration. The collaboration is still ongoing at both parties satisfaction.
- Prof. Van der Kooij also collaborates with Japan, on continuously extending contracts. These were two bottom-up approaches with a Japanese company.
- It was generally perceived that collaboration between universities is more complicated as to when money comes from industry. Some sporadic FP7 projects do include Japanese partners. But hereto this Japanese partner should possess a unique expertise at world level. Recognized excellence might not be enough. Also, as medical care and well fare is concerned, collaboration could prove invaluable to come up with generally applicable and sound solutions even without being able to prove unique expertise.
- Some remarks were made on the importance of ‘Europe’ for Japan. Europe is obviously in competition with South-east Asia (mainly Korea and China) and U.S., where the latter two are probably of higher importance to Japan. It was noted that it could be interesting to look and learn from existing Japan-U.S. collaboration schemes. Note that in well fare and medical care Europe and Japan have a common adversary, namely Intuitive Surgical (which could end up like a Microsoft for surgical robotics)...
- Prof. Van Brussel argued that there is actually already a structured collaboration taking place between EU and Japan (and others), namely on ‘Intelligent Manufacturing Systems’ <http://cordis.europa.eu/ims/>. The simplest approach is to expand this type of collaboration and cover other relevant topics relating Welfare and Ageing. After this, some thoughts were shared on how to shape future collaboration, so that successful applications could be prepared:
- Prof. Bruyninckx emphasises on the cultural differences and the need to make machines that are designed/acceptable for/by different cultures.
- Prof. Luo believes that agreements between universities are the way to go. Where collaboration takes place on mutual research topics. Also Japan is very interested in the EU education system. Japan wishes to have standardized education system with the rest of the East-Asian countries. Since EU has lots of experience in standardizing the education systems of different countries it could be interesting to give advice on this matter.
- Prof. Okunishi comments that FP7 participation for Japanese universities is at present too hard. Most Japanese universities that do apply for the FP7 are usually rejected. The problems are administrative costs also. He is going to contact the minister for possible collaboration. Mr. Pascall argued that there are plenty of companies that are

active in the 'proposal writing business' that help shaping proposals for a moderate price and suggested that interested Japanese universities should contact such companies and invest some money.

- Dr. Pascall stressed that a critical mass is essential to justify structural collaboration. He also mentioned that Robotics or IRT in general is probably a topic that both Europe and Japan could support.

6. Conclusion

The workshop was concluded with great success. The outcome of this workshop can be summarized as follows:

- Participants obtained a better view on existing possibilities for collaboration on IRT subjects between EU and Japan. Basically, at present
 - through bi-lateral agreements between Japan and member countries (not discussed in detail) or
 - bottom-up, through initiatives between European research institutions and Japanese companies, or
 - sporadic EU funded projects where the Japanese partners possess a unique expertise in a topic that falls within EU funding scope;
 - more structurally organized (top-down) collaboration is at present not possible but required in the future.
- IRT for medical care and well fare seems an ideal field for collaboration, because
 - global solutions are needed taking into account cultural differences,
 - the topic is of interest of both EU and Japan who face imminent problems triggered by their ageing societies.



Panel exhibition “A New Era of Japan – Europe Academic Cooperation”

1 March — 7 March 2011

The Culture and Information Center, the Embassy of Japan in Belgium

Posters to introduce advanced research projects and results conducted by 5 universities of EU Institute in Japan, Kansai (Kobe University, Kyoto University, Osaka University, Kwansai Gakuin University and Kansai University) were exhibited. This exhibition

received high interest from researchers and students in Belgium and also other European countries and contributed to raising the profiles of those universities for their research advancement.



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