



Science, Technology and Innovation in Europe

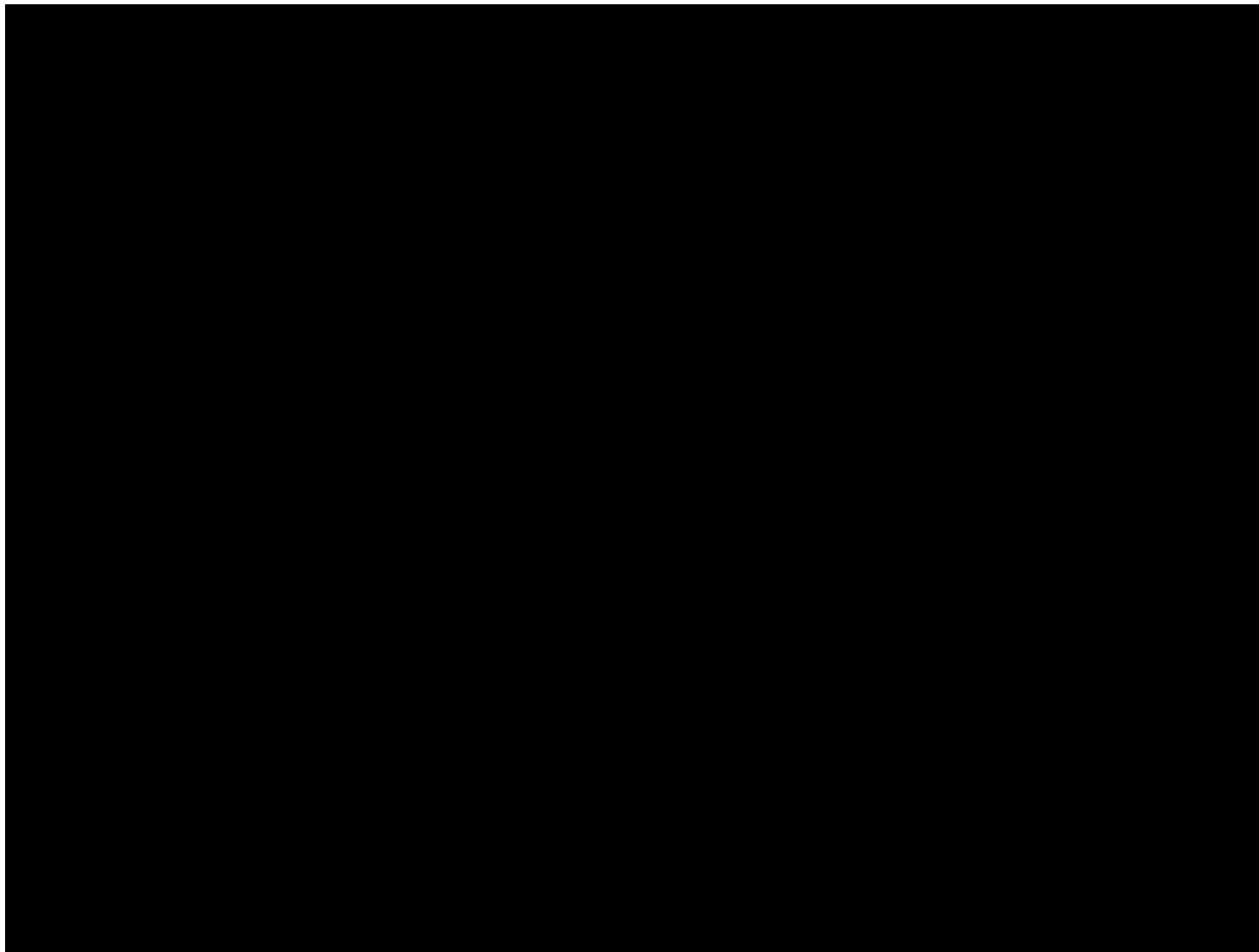
EU Research & Innovation Day

October, 2016

Peter Wijnhuizen

피터 웰하우즌







EU accounts for:

- 24% of the R&D expenditure
- 32% of the high impact publication
- 32% of the patent publications

170 countries have joined an EU R&D project



- Key focus areas in research and innovation
- 2016 cooperation with Korea
- Possible field of future cooperation
- Remarks



1. Key Focus in Research & Innovation

ICT, energy efficiency, renewable energy and smart energy infrastructure systems, green buildings, future of transport, smart production/factory, new materials, life sciences, humanities, social science + cultural science

2. 2016 Cooperation with RoK

Time / Venue	Title of Activity	Major Contents
5/2015	MOU	KIAT and FFG sign MoU to promote and facilitate joint RTI projects between companies, corporations, research organizations and universities from Austria and Korea
02/2016	Delegation	Innovation Bridge: 9 Austrian Start Ups visit Korea; exchange with Korean companies and organizations
06/2016	Business Mission	ICT delegation from Austria visits Korea
12/2016	Program	Global Incubator Network (GIN) supports innovative Start Ups to internationalize, South Korea is one of focus countries from end of 2016 onwards

Comments, ideas, questions?

please contact us:

**seoul@advantage
austria.org**

3. Possible future fields of cooperation

energy efficiency, renewable energy, green & smart building technologies, smart factory, life science + medical technologies, IoT, Start-Up exchange, forestry, social science, education, ...

4. Remarks

STI budget increase by 68 % in the past decade; target for 2020: increase R&D rate to 3.76 % of GDP + become innovation leader (2015 = 3 % of GDP)



1. Key Focus in Research & Innovation

Chemistry, Pharmaceuticals, Space



2. 2016 Cooperation with RoK

Time / Venue	Title of Activity	Major Contents
Starts Jan. 2017	FWO's agreement with the National Research Foundation of Korea	<ul style="list-style-type: none">• Exchange of young postdoctoral researchers• All scientific domains• Target Participants from the Belgian side: researchers with a PhD affiliated to a university in the Flemish Community (or university college of the association) or belonging to the scientific staff of the Dutch-speaking community of a scientific institute

3. Possible future fields of cooperation

Biotechnologies on the Ghent University Global Campus in Incheon



1. Key Focus in Research & Innovation for Denmark

Cleantech (Renewable Energy, Wind, Energy storage, Smart city solutions), ICT (Sound, Wireless tech), Life Science (Medtech, Clinical trials, Diabetes, Cancer, CNS), Polar/Arctic, Water, Food & agriculture

2. 2016 Cooperation with RoK

Time / Venue	Title of Activity	Major Contents
March 18-24	Camp	Electronic Vehicle and smart grid
April 11-12	Workshop	Arctic research Seminar
April 18-20	Conference	Societal Challenges (Social Welfare, Plant science, Arctic)
June 15	Call	Korea–Denmark Call for the bilateral collaboration (NRF)
October 24-28	Camp	Innovation camp for smart building & smart city
November	JSTCC	Joint committee meeting in Copenhagen



3. Possible future fields of cooperation

Renewable energy, Energy storage, Life science, Clinical trials, Arctic research, Food
 *Ongoing joint funded projects 2014-2016: Fuel cells and Bio energy

4. Remarks

Research and Innovation in Korea is facilitated by Innovation Centre Denmark in Seoul which is part of the Embassy



1. Key Focus in Research & Innovation

Social Sciences and Humanities, Environmental Sciences, Energy, Biological and Medical Sciences, Material Sciences and Analytics, Natural Sciences and Technology, E-Science and Mathematics, 5G, IoT, Big Data.

2. 2016 Cooperation with RoK

Time / Venue	Title of Activity	Major Contents
May 2016	Visit & Delegation	Visit to Korea by Minister of Economic Affairs and bilateral meeting with Minister of MSIP
May 2016	Seminar	Finland Innovation Day Seminar (ICT in focus)
September 2016	Meeting	Global Forum of National Advisory Councils for STI
September 2016	Joint Conference	Joint conference between Technical Research Center of Finland and KICT (smart building in focus)
All year round	Collaboration research	R&D Center Collaboration Project with Konkuk University and Technical Research Center of Finland

3. Possible future fields of cooperation

Several including: ICT; nano- and material technologies; manufacturing, especially ship building; and nuclear technology

4. Remarks

Strategic Government Programme: *Finland of Solutions*

Open Science as a national priority: *Roadmap for Open Science and Research in Finland 2014-2017*

Finland's Strategy and roadmap for research infrastructures 2014-2020

New guidelines for internationalisation of higher education and research coming by the end of 2016



1. General Background

- Science and Technology cooperation agreement signed in 1981
- Regular meetings of the Science & Technology Joint Committee since 2002 (6th in April 2016)
- France-Korea Action Plan for the 21st Century adopted in November 2015 in the framework of the 130th anniversary of the establishment of diplomatic relations: higher education, science and technology cooperation as one of the main priorities
- France is the 7th scientific partner of Republic of Korea

2. Main Fields of Cooperation

- New Materials & Nanotechnologies
- Health & Economics of Ageing
- Aeronautics & Space
- Life Science & Biotechnologies
- Information & Communication Technology
- Environmental Sciences, Climate & Oceanography

3. Programs

- STAR mobility program with NRF (since 2003) & Blaise Pascal scholarships (since 2005)
- Institut Pasteur Korea created in 2004 & a dozen of joint laboratories in Korea involving CNRS, French and Korea universities but also companies (Air Liquide, Arkema, Danone, Sanofi, etc.)
- French Tech Hub (since March 2016) to foster business partnerships with start-ups from both countries
- Bilateral Symposium for Higher Education, Research and Innovation (1st edition on 17 October 2016)



1. Key Focus in Research & Innovation

Digital economy and society, sustainable economy and its energy, innovative workplace, healthy living, intelligent mobility, civil security

2. 2016 Cooperation with RoK



Time / Venue	Title of Activity	Major Contents
June 2016 (annual, since 2007)	Bilateral Call German-Korean Mobility Programme	Bilateral programme, Korean and German partner required, mobility support for scientist
March 2016	3 rd Bilateral Call for joint R&D Projects for SMEs	Joint R&D projects, focusing on developing innovative products and applications in all technological and application areas
End of September 2016	2+2 Bilateral Call	Support of university-industry R&D Cooperation
17 November 2016	8 th Korean-German Joint Conference Engineering for our Future	Micro- and Nanoelectronics, Robotics, E-Health, Future Mobility, 5G, Tactile Internet
Since 2008	ADeKo-Alumni Network Germany-Korea	Various activities, workshops, seminars, conferences

3. Remarks

Numerous German universities as well as many institutes of the Fraunhofer-Society, the Helmholtz Association, the Leibniz Association, and the Max Planck Society and other research institutions are cooperating on individual project basis with Korean Partners.



1. Key Focus in Research & Innovation

Nanoscience, Computer Science and Materials Sciences, Immunology, Animal and Dairy

2. 2016 Cooperation with RoK

3.1 Joint Activity (JSTCC, event, conference, etc.)

Time / Venue	Title of Activity	Major Contents
March 2016, Sejong City	MoU Signing	NAACC (Sejong City) and UCC (Irish University) formalise discussions on co-operation in the development of pharmacy education and medical/biotech research
October 2016, Seoul National University		Planned discussion of Irish – Korean collaboration in Nanoscience with Irish Vice-Minister for Innovation, Skills, and Training



3. Possible future fields of cooperation

Nanoscience (linked to IoT), Agri-food, Computer Science, Med Tech, collaboration on research-to-market initiatives

4. Remarks

There are ongoing collaborations between Science Foundation Ireland (SFI) funded researchers and Korean researchers, but no joint government programmes as yet. There is also association-led cooperation, e.g Irish-Korean Smart Grid MoU, and DERI-KISTI web research cooperation



1. Key Focus in Research & Innovation

Life sciences, biotechnology; Aerospace, aeronautics; Biomedicine; Engineering; Food sciences; Oil industry; Microelectronics; Physics; Material sciences; Advanced materials; ICT; Robotics; Environment and energy; Transportation; Automotive

2. 2016 Cooperation with RoK

Time / Venue	Title of Activity	Major Contents
March / KIGAM	Symposium	Landslides and landscape monitoring
May / Hanyang Univ.	Symposium	Grapheme and other innovative materials
May / Sejong Univ.	Symposium	Astrophysics and cosmology: cosmic background matter
Sept / DGIST	Symposium	Transnational plant research
Oct / The Plaza	S&T mission of Trentino Region	Advanced materials, neurobiology, biotechnology, energy
Nov / Lotte Hotel	Forum	Personalized medicine
Nov / KIST	Symposium	Bioactive plant derivatives

3. Possible future fields of cooperation

ICT: Big-data, IoT, Cloud; Aerospace: Galileo; Graphene and beyond; Aerospace; Biopharma & Biotechnology; Energy: renewable wind and solar; Management and research on radioactive wastes

4. Remarks

Italy has recently renewed the bilateral S&T joint Executive Programme (2016-2018).
New initiatives have been launched by the Embassy in Seoul such as the young researchers travel grants.



1. Key Focus in Research & Innovation - possible future fields of cooperation

1. Knowledge-based bio-economics
2. Bio-medicine, medical technologies, bio-pharmacy and biotechnologies
3. Advanced materials, technologies and engineering systems
4. Smart energy
5. Information and communication technologies

2. 2016 Cooperation with RoK

Time / Venue	Title of Activity	Major Contents
Annual	University Cooperation	The Riga Technical University and the University of Latvia cooperate with major Korean universities
7 June, 2016	Memorandum of Understanding	Ambassador of Latvia Mr Pēteris VAIVARS signed the Memorandum of Understanding with Kangwon National University on promoting cooperation with institutions of higher education in Latvia
July, 2016	Visit	Mr Leonīds RIBICKIS, President of Riga Technical University, visited Seoul National University, Hanyang University, Pukyong National University, Yonsei University



3. Remarks

To encourage the exchange of knowledge and experience of new scientists, Korean researchers in cooperation with Latvian higher education and research institutions are welcome to submit project proposals to the research programme "Support to Postdoctoral Research" (deadline: 30 November 2016, <http://viaa.gov.lv/eng/>).



1. Key Focus in Research & Innovation

Agro-food, chemistry, creative industries, energy, high tech systems & materials, life science & health, logistics, horticulture, water.

2. 2016 Cooperation with RoK

Time / Venue	Title of Activity	Major Contents
24 February	Workshop	Single photon detection/ color x-ray imaging
27~28 April	Seminar	Start up session
June 30	Networking	Korea-Netherlands Business Night
24-26 August	Game Jam	48 hour game producing competition
19~22 September	DGTA	Gas Turbine mission to Korea
September	Seminar	Off shore wind industry
Sept/Oct. 2016	Course	UHPC development
Sept 2016	Delegation	Visit of Prime Minister to Korea



3. Possible future fields of cooperation

Big-data, sea weed, aerospace, neuroscience, cyber security, medical imaging, intelligent transport systems, air pollution, virus detection, artificial intelligence

4. Remark

The Netherlands has a high success rate for Horizon2020 and Eureka applications.



1. Key Focus in Research & Innovation

Fisheries; Marine and Freshwater Biology; Materials Science-Composites; Ocean Engineering; Agricultural Engineering; Applied Chemistry; Oceanography; Ceramic Materials; Biomaterials; Thermodynamics; Civil Engineering; Chemical Engineering; Textile Materials Science and Construction and Building Technologies

2. 2016 Cooperation with RoK

No specific event

3. Possible future fields of cooperation

- ICT sector associated with smart cities and electric mobility
- Space technologies, including development of joint satellites – AIR (Azores International Research Center)
- Nanotechnologies – collaboration with the International Iberian Nanotechnology Laboratory - INL
- Research in the field of Culture –better understanding of East/West civilizations

4. Remarks

STI Cooperation with the Republic of Korea has been developing, namely, under the different MoU/Protocol of Cooperation signed between South Korean and Portuguese Higher Education Institutions together with mobility programmes. South Korea and Portugal have also been participating in H2020 and EUREKA projects.



1. Key Focus in Research & Innovation

Materials and nanotechnology, Biomedicine and Biotechnology, Environment and agriculture, Sustainable energy

2. 2016 Cooperation with RoK

Time / Venue	Title of Activity	Major Contents
October 2016	Joint Committee Meeting on S&T	

3. Possible future fields of cooperation

Materials and nanotechnology, Biomedicine and Biotechnology, Environment and agriculture, Sustainable energy

4. Remarks

So far, the cooperation between Republic of Korea and Slovakia in the field of S&T has been developing mainly through various mobility programmes, minor individual projects and multilateral research platforms. However, year 2016 promises a new breakthrough on bilateral level. Based on the Agreement on S&T cooperation between the governments of both countries that entered into force in 2014, the first joint committee is scheduled for October 2016 to boost the cooperation.



1. Key Focus in Research & Innovation

Bio Technology including Health; Green Technology including Energy; Smart City and Transportation; Information and Communication Technology; Nanotechnology, Materials and New Production Technology; Aerospace

2. 2016 Cooperation with RoK

Time / Venue	Title of Activity	Major Contents
October / Madrid	Steering Committees	Steering Committees MSIP & MOTIE
November / Madrid	Workshop	Smart City
December / Madrid	Info Day	Info Day in Int'l R&D flagship Korea
April 2017 / Barcelona	Eureka Day	Info Day & B2B
March 2017	Call for Proposals	Joint R&D Call for proposals

Comments, Ideas & Questions

please contact us:

jordi.espluga@cdti.es

3. Possible future fields of cooperation

ICT: Big-data, IoT, Cloud; Aerospace: Galileo; NMP: Graphene & Manufacturing 4.0; Health: Medical equipment & Pharmacy; Energy: Renewable Wind and Solar; Environment; Smart City

4. Remarks

Spain is taking the **Chairmanship of Eureka from July 2016 ~ July 2017**. Proposals/ideas/suggestions from the Korean administration, Research Institutes and Enterprises are encourage



1. Key Focus in Research & Innovation

Clinical therapy research, medicine and health, biodiversity, chemistry, electronics, astronomy, biotechnology, mathematics, environment, agricultural sciences, spatial planning

2. 2016 Cooperation with RoK

Time / Venue	Title of Activity	Major Contents
26 September 2016	Roundtable & Reception	Smart Manufacturing Delegation, September 2016

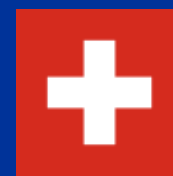
3. Possible future fields of cooperation

Life Sciences, Bioengineering, Materials Sciences & Technologies, Information, Communication & Systems Technologies (ICST), Computational Sciences and Applied Mathematics

4. Remarks

From January 1 2017, the local Science & Innovation Counselors and local staff in Seoul will be working directly for the Swedish Ministry of Enterprise and Innovation.





1. Key Focus in Research & Innovation

Life Science, Medical Technology, Start-ups, Innovation, Exchange, MEMS



2. 2016 Cooperation with RoK

Time / Venue	Title of Activity	Major Contents
April 2016	Start-ups	Swiss medtech start-ups delegation visit to Korea
July 2016	Symposium	The 3 rd Swiss-Korean Life Science Symposium – Digital Healthcare Innovation
Aug 2016	Research Call	Switzerland-Korea Bilateral in innovation R&D Call (KIAT)
Dec 2016	Exchange programme	PhD exchange programme call opens (NRF)

3. Remarks

For more information on Swiss-Korean collaboration, education, research & innovation, please visit to www.stofficeseoul.ch



1. Key Focus in Research & Innovation

Global health and life sciences, ICT, new and advanced materials, advanced manufacturing and engineering, nuclear and renewable energy, smart/future cities.

2. 2016 Cooperation with RoK

Time / Venue	Title of Activity	Major Contents
29-30 Nov 2016 (TBC)	Conference	London Health Forum (UK-Korea acad/ind health cooperation)
01 Dec 2016 (TBC)	G-2-G Meeting	UK-Korea Joint Committee Meetings on S&T Cooperation (JCM)
Jan 2017 (TBC)	Research Call	MRC-KHIDI Partnership Awards (health sciences) call opens
2016-2017	Project Events	MSIP UK-Korea Focal Point Programme (various themes)

3. Possible future fields of cooperation

Precision medicine, Anti-Microbial Resistance (AMR), nuclear decommissioning, big data/IoT, low carbon transportation, collaboration within Mission Innovation. Open to new thinking based against themes in Section 1 above.



4. Remarks

New UK National Innovation Plan to be published later in 2016, and the 2016 JCM (UK: BIS; Korea: MSIP, MOTIE, MOHW) will determine new priority collaboration fields.



- EU is serious about STI cooperation with Korea
- Many bilateral events are already taking place
- MS have indicated many fields of possible future cooperation



On behalf of my EU colleagues

Thank you