

Report

THE SECOND KOREA-SWITZERLAND SCIENCE AND TECHNOLOGY FORUM

4-6 April 2006

Hotel Ritz Carlton
Seoul, Korea

Organized by

Young-Ho CHO (Korea) and Jan-Anders E. MÅNSON (Switzerland)

Sponsored by

Ministry of Science and Technology, Korea
State Secretariat for Education and Research, Switzerland
Korea Science and Engineering Foundation, Korea
Swiss National Science Foundation, Switzerland
Korea Advanced Institute of Science and Technology, Korea
Ecole Polytechnique Federale de Lausanne, Switzerland

I. Overview

The second Korea-Switzerland Science and Technology Forum was held at Seoul, Republic of Korea during 4~6 April 2006. The program included one and a half day Field Trip and one day Technical Sessions. In the Field Trip, participants visited and toured research facility at the three sites, including the Samsung Advanced Institute of Technology (SAIT), LG Electronic Institute of Technology (LG ELITE), and Seoul National University. In the Technical Sessions, total 17 speakers, 9 speakers from Korea and 8 from Switzerland, presented collaborative activities between the two countries. Government representatives from both Korea and Switzerland discussed the issues of science and technology policies and other international collaboration programs in their countries. The speakers also exchanged R&D interests in three technical areas: micro/nano materials & systems, biomedical & bioengineering, and communication & networks. The Forum focused on the clustering of people and technology for the establishment of a science and technology network between the two countries.

II. Background and Description of Forum

1) Forum Mission and Function

- Clustering of people and technology for the Korea-Switzerland collaboration activity, focusing on industry-academia links between two countries.
- Annual presentation of collaboration activity or plans, including previous or on-going joint research, researcher exchange, joint symposium, and/or other activities between two countries

2) Forum Scope and Focus

- Annual presentation of focal point activity and vision
- Presentation and introduction of government policy and strategy with respect to international scientific collaboration programs for each country
- Presentation of current collaboration activity between Korea and Switzerland, focusing on the fusion or integration of each country's scientific strength or technical excellence in, but not limited to, the technical areas of:
 - (a) Micro/Nano Materials & Systems
 - (b) Biomedical & Bioengineering
 - (c) Communication & Network
- Presentation of the status and results of individual collaboration activity, including previous or on-going joint research, exchange programs, joint symposia, and/or other activities between the two countries
- Presentation of the interest groups, partners or candidates for potential future collaboration activities

3) Forum Speakers

- 17 people from each country, including the Focal Point, 2 people from industry, 11 people from University, 2 people from National Laboratories and 2 Government representatives who are involved in the previous/present collaboration activity or interested in developing future collaboration between two countries.

III. Forum Programs

April 4 (Tuesday), 2006

Technical Program

- 09:00 Welcome Address
Cha Dong Kim, Ministry of Science and Technology
- 09:10 Congratulatory Address
Christian Hauswirth, Embassy of Switzerland in Korea

[Session I] Session Chair: Paul E. Zinsli (SSA)

- 09:30 S&T policy in Switzerland and the international collaboration
Claudio Fischer, State Secretariat for Education and Research
- 09:50 Science and technology policy in Korea
Joo Han Kim, Ministry of Science and Technology
- 10:10 Driving innovation in academic collaboration
Jan-Anders E. Månson, Ecole Polytechnique Fédérale de Lausanne
- 10:30 An overview of joint research center seed project
Young-Ho Cho, Korea Advanced Institute of Science and Technology
- 10:50 *Coffee Break*

[Session II] Session Chair: Jae-Chul Pyun (KIST Europe)

- 11:10 Haptics in biomedical robotics, examples for mini-invasive surgery training and MRI compatible instrumentation
Hannes Bleuler, Ecole Polytechnique Fédérale de Lausanne
- 11:30 Cooperative research network for stem cell research between SNU and EPFL
Jeong Mook Lim, Seoul National University
- 11:50 *Lunch Break*

[Session III] Session Chair: Hannes Bleuler (EPFL)

- 13:30 Bacteriophage therapy : avoidance of immune response by PEGylation
Kwang-Pyo Kim, Eidgenössische Technische Hochschule Zürich
- 13:50 Immunoaffinity biosensors for biomedical application based on nanomaterials
Jae-Chul Pyun, Korea Institute of Science and Technology Europe
- 14:10 Biomimetic gels in tissue engineering
Jong Eun Ihm, Ecole Polytechnique Fédérale de Lausanne
- 14:30 A NanoBioFluidic device and characterization
Young-Hyun Jin, Korea Advanced Institute of Science and Technology
- 14:50 Polymer nanocomposite encapsulation of organic light emitting and photovoltaic devices
Yves Leterrier, Ecole Polytechnique Fédérale de Lausanne
- 15:10 A Block copolymer thin films as a tool for nanodevices fabrication
Xavier Bulliard, Seoul National University
- 15:30 *Coffee Break*

[Session IV] Session Chair: Yong-Sung Eom (ETRI)

- 15:50 Nanoimprint lithography : toward a polymer photonic crystal nano-system
Choon-Gi Choi, Electronics and Telecommunications Research Institute
- 16:10 Some aspects of micromanufacturing research at EPFL
Jacques Giovanola, Ecole Polytechnique Fédérale de Lausanne
- 16:30 Nano technology in Samsung
Jong Min Kim, Samsung Advanced Institute of Technology
- 16:50 Next generation VoIP and audio reproduction
Christof Faller, Ecole Polytechnique Fédérale de Lausanne
- 17:10 Piezoelectric MEMS technology for advanced information and telecommunication applications
Hyo-Jin Nam, LG-Electronics Institute of Technology devices
- 17:30 *Wrap up*

April 5 (Wednesday), 2006

Field Trip

- 10:00 Samsung Advanced Institute of Technology (SAIT), Giheung, Gyunggi-do
- 12:00 *Lunch*

April 6 (Thursday), 2006

Field Trip

- 09:30 LG Electronics Institute of Technology (LG Elite), Seoul
- 12:00 *Lunch*
- 14:30 Seoul National University (SNU), Seoul

IV. Forum Speakers

Country	Name	Affiliation	Position
Korea (9 Speakers)	Joo Han Kim	Europe & Oceania Cooperation, Ministry of Science and Technology	Director
	Young-Ho Cho	Department of BioSystems, Korea Advanced Institute of Science and Technology (KAIST)	Professor
	Jeong Mook Lim	Division of Animal Genetic Engineering, Seoul National University (SNU)	Professor
	Jae-Chul Pyun	Korea Institute of Science and Technology (KIST) Europe	Senior Scientist
	Young-Hyun Jin	Korea Advanced Institute of Science & Technology (KAIST)	Researcher
	Xavier Bulliard	Seoul National University(SNU)	PhD
	Choon Gi Choi	Electronics and Telecommunications Research Institute (ETRI)	Project leader
	Jong Min Kim	Electronics and Telecommunications Research Institute (ETRI)	Vice President
	Hyo-Jin Nam	LG Electronics Institute of Technology (LG ELITE)	Chief Research Enginner
Switzer- land (8 Speakers)	Claudio Fischer	State Secretariat for Education and Research (SER)	Head of Bilateral Research Cooperation
	Jan-Anders E. Månson	Ecole Polytechnique Fédérale de Lausanne (EPFL)	Professor, Vice-President
	Hannes Bleuler	Ecole Polytechnique Fédérale de Lausanne (EPFL)	Professor
	Kwang-Pyo Kim	Eidgenössische Technische Hochschule Zürich (ETHZ)	PhD
	Jong Eun Ihm	Ecole Polytechnique Fédérale de Lausanne (EPFL)	PhD
	Yves Leterrier	Ecole Polytechnique Fédérale de Lausanne (EPFL)	PhD
	Jacques Giovanola	Ecole Polytechnique Fédérale de Lausanne (EPFL)	Professor
	Christof Faller	Ecole Polytechnique Fédérale de Lausanne (EPFL)	PhD

V. Forum Organizers

Korea	Switzerland
Prof. Young-Ho Cho Digital Nanolocomotion Center Department of BioSystems Korea Advanced Institute of Science and Technology 373-1 Guseong-dong, Yuseong-gu Daejeon, Korea Tel: +82-42-869-8691 Fax: +82-42-869-8690 E-mail: mems@kaist.ac.kr	Prof, Jan-Anders E. Månson Laboratory of Composite and Polymer Technology (LTC) Institute of Materials (IMX) Ecole Polytechnique Fédérale de Lausanne IMX-LTC, MX-G341, Station 12, CH-1015 Lausanne, Switzerland Tel: +41-21-693-4285 Fax: +41-21-693-5880 E-mail: jan-anders.manson@epfl.ch

VI. Summary and Conclusions

The Second Korea-Switzerland Science and Technology Forum, held during 4~6 April 2006 in Seoul, Korea provided excellent opportunities for the key researchers of both countries to exchange technical interests and to discuss in-depth collaboration on the fusion or integration of each country's scientific strength or technical excellence. Government representatives from both countries attended the program and showed the strong interests and support for the international collaboration. Forum participants discussed planning and methods for JRC Seed Project and future collaboration, making the following agreements and decisions.

- 1) Focal Points collect the presentation materials of the Forum and distribute the copies to Forum attendees. The copies of proceedings are to be posted on the Homepage at <http://skistec.org> for public distribution.
- 2) Both governments agreed to work on Korean-Swiss Joint Research Center (JRC) as a long-term cooperation strategy. To this end, a Seed Project will be pursued from the year 2006 to 2007 before the start of JRC in 2008. The Focal Points of both countries are responsible for implementing a Seed Project under the financial support of both governments.

The 3rd Forum will be held in Switzerland during the first half of 2007. Focal Points will prepare and exchange the list of 10~12 speakers from each country, including the Focal Point, 3 people from industry, 2 or 3 people from university, 2 or 3 people from national laboratories and 2 or 3 Government representatives. The speakers will be selected from those who were involved in the previous/present collaboration activity, as well as those interested in JRC Seed Projects and future collaboration in industry sectors.