

Report

THE THIRD SWITZERLAND-KOREA SCIENCE AND TECHNOLOGY FORUM

7-8 June 2007

EPFL
Lausanne, Switzerland

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 Foundation for International Cooperation of Science & Technology, Korea
Swiss National Science Foundation, Switzerland
Korea Advanced Institute of Science and Technology, Korea
Ecole Polytechnique Federale de Lausanne, Switzerland

I. Overview

The Third Switzerland-Korea Science and Technology Forum was held at EPFL (Ecole Polytechnique Fédérale de Lausanne), Switzerland during 7~8 June 2007. The Forum program included one-day Technical Sessions and a half-day Field Trip. In the Technical Sessions, total 20 speakers, 8 speakers from Korea and 12 speakers 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 thematic subjects for JRC (joint Research Center) in three technical areas: micro/nano materials & systems, biomedical & bioengineering, and communication & networks. The Forum focused on the clustering of people and technology and on the technical interests and preparation plan for the establishment of JRC between the two countries. In the Field Trip, participants visited three EPFL research sites and facilities related with the three technical areas of micro/nano materials & systems, biomedical & bioengineering, and communication & networks, including Laboratory of Nanostructures and Novel Electronic Materials (Prof. L. Forro, A. Kulik), Center for Biomedical Engineering and Biotechnology (Prof. J. Hubbell), and Computer Vision Laboratory (Prof. P. Fua, J. Pilet).

II. Background and Description of Forum

1) Mission and Function

- Clustering of people and technologies 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 symposia, and/or other activities between two countries

2) 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, researcher exchange, joint symposia, and/or other activities between two countries
- Presentation of the interest groups, partners or candidates for potential future collaboration activities

3) Speakers

- 10~12 people 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 people from government, who are involved in the previous/present collaboration activity or interested in developing future collaboration between two countries.

III. Forum Programs

SCIENCE AND TECHNOLOGY FORUM

THURSDAY, JUNE 7, 2007

Room VITTOZ

09:00 Welcome
Jan-Anders MÅNSON, Ecole Polytechnique Fédérale de Lausanne (EPFL)

[Session 0] Science and Technology Policy (Session Chair: Prof. Jan-Anders Månson)

09:05 Claudio FISCHER, State Secretariat for Education and Research (SER)
S&T policy in Switzerland and the International collaboration

09:20 Sung Wook HWANG, Korea Foundation for International Cooperation of Science & Technology (KICOS)
Science & Technology Policy of Korea, KICOS's International S&T Collaboration Programs

09:50 Jan-Anders MÅNSON, Vice Presidency for Innovation and Valorisation (VPIV) - EPFL
EPFL: today - tomorrow

10:05 Young-Ho CHO, Korea Advanced Institute of Science and Technology (KAIST)
An Overview of Korea-Switzerland Collaboration Programs and Joint Research Center

10:20 Marius BURGAT, Vice-presidency for International Affairs (VPRI) - EPFL
International Relations at EPFL

10:35 *Coffee Break*

[Session I] Micro/Nano Materials & Systems (Session Chair: Prof. Jan-Anders Månson)

10:50 Matthias GÄUMANN, VPIV - EPFL
Research Programme NanoTera

11:10 Jong-Uk BU, SenPlus
Micro Projection Display for Mobile Devices

11:30 Andrzej KULIK, LNNME - EPFL
AFM-based Nanomanipulation

11:50 Sylvia JENEY, LNNME - EPFL
Photonic Force Microscopy

12:10 Sang-Joon CHO, Park Systems
SPM Technology and Requirements for BioMedical Research

12:30 Giorgio MARGARITONDO, VPAA - EPFL
Recent Progress in Coherence-based X-ray Imaging

12:50 *Lunch – Le Parmentier, Lausanne*

[Session II] Biomedical & Bioengineering (Session Chair: Prof. Young-Ho Cho)

14:20 Jong Eun IHM, LMRP1 - EPFL
Biomaterials technology for in vitro ovarian follicle maturation

14:40 Soo-Young LEE, KAIST
Neuromorphic Speech Processing with Silicon Cochlea and I&F Neuron Chips

15:00 Yann BARRANDON, LDCS1 - EPFL
Potential of squamous epithelial stem cells in regenerative medicine

15:20 Gun-Il IM, Dongguk University
Current Status of Stem Cell Research in Korea

15:40 Joel ROSSIER, DIAGNOSWISS
Interfacing microfluidic devices to standard life science robots: The missing gap for the acceptance of microfluidic devices in pharma and diagnostic testing

16:00 *Coffee Break*

[Session III] Communication & Network (Session Chair: Prof. Young-Ho Cho)

16:15 Pascal EICHENBERGER, Logitech EPFL Incubator
Logitech's move towards open innovation – Key research areas

16:35 Yong-Sung EOM, ETRI
Wire and Wireless Communication System

16:55 Christof FALLER, LCAV1 - EPFL
Psychoacoustics and Spatial Audio Coding/MPEG Surround

17:15 Yun Hwi PARK, Samsung ElectroMechanics
Suppression of SSN by Embedded Decoupling Capacitor in LTCC Package

17:35

19:00 *Gala dinner*
Hotel Palace, Lausanne

FRIDAY, JUNE 8, 2007
Field Trip - EPFL

08:45 Meeting at the information desk (Yves Leterrier)

09:00 Computer Vision Laboratory (Prof. P. Fua, J. Pilet; room BC 306)

10:00 Laboratory of Nanostructures and Novel Electronic Materials (Prof. L. Forro, A. Kulik; room PHD 3444)

11:00 Center for Biomedical Engineering and Biotechnology (Prof. J. Hubbell; room AAB 039)

12:00 *Lunch – Le Parmentier, EPFL*

14:00

IV. Forum Speakers

Country	Name	Affiliation	Position
Korea (8 Speakers)	Sung Wook Hwang	Korea Foundation for International Cooperation of Science & Technology (KICOS)	Head of Global R&D Networking Department
	Young-Ho Cho	Korea Advanced Institute of Science and Technology (KAIST)	Professor
	Jong-Uk Bu	SenPlus	CEO
	Sang-Joon Cho	Park Systems	Principal Researcher
	Soo-Young Lee	Korea Advanced Institute of Science and Technology (KAIST)	Professor
	Gun-II Im	Dongguk University	Professor
	Yong-Sung Eom	Electronics and Telecommunications Research Institute (ETRI)	Principal Researcher
	Yun-Hwi Park	Samsung ElectroMechanics	Principal Researcher
Switzerland (12 Speakers)	Claudio Fischer	State Secretariat for Education and Research (SER)	Head of Bilateral Research Cooperation
	Jan-Anders Månson	Vice Presidency for Innovation and Valorization, EPFL	Professor, Vice-President
	Marius Burgat	Vice Presidency for International Affairs, EPFL	Assistant
	Matthias Gäumann	Vice Presidency for Innovation and Valorization, EPFL	Professor
	Andrzej Kulik	Institute of Complex Matter Physics, EPFL	Professor
	Sylvia Jeney	Institute of Complex Matter Physics, EPFL	Senior Research Scientist
	Giorgio Margaritondo	Institute of Complex Matter Physics, EPFL	Professor, Vice-President
	Jong Eun Ihm	Institute of Bioengineering, EPFL	Ph.D Student
	Yann Barrandon	Institute of Bioengineering, EPFL	Professor
	Joel Rossier	DIAGNOSWISS	CSO
	Pascal Eichenberger	Logitech EPFL Incubator	Director
	Christof Faller	Institute of Communication Systems, EPFL	Senior Research Scientist

V. Forum Organizers

Korea	Switzerland
<p>Prof. Young-Ho Cho Digital Nanolocomotion Center Department of Bio and Brain Engineering 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</p>	<p>Prof, Jan-Anders E. Månson Laboratory of Composite and Polymer Technology 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</p>

VI. Summary and Conclusions

The Third Switzerland-Korea Science and Technology Forum, held during 7~8 June 2007 at EPFL, provided excellent opportunities for the key researchers of both countries to exchange technical interests and to discuss in-depth collaboration on the integration of each country's scientific strength and technical excellence. Government representatives from both countries attended the program and showed the strong interests and support for the international collaboration. Forum participants discussed thematic subjects and collaboration methods for JRC and future collaboration; thus 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 will be also posted on the Homepage at <http://skistec.org> for public distribution.
- 2) Switzerland government presented feasible schedule and budget plan for Korean-Swiss Joint Research Center (JRC) as a long-term cooperation strategy. To this end, Switzerland government will contact Korean government in the year of 2007 and discuss feasible schedule and budget plan for JRC. Agreement between two countries will be also processed in 2007 through diplomatic channels. The Focal Points of both countries are responsible for the initial proposal preparation for JRC and the tentative schedule for the Science and Technology Forum and the Working Group Meetings in 2008.

The 4th Forum will be held in Korea during the first half of 2008. 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 forum speaker candidates will be recommended and discussed by Focal Points from those who were involved in the previous/present collaboration activity, as well as those interested in JRC Seed Projects and future collaboration activity.