TECHNICAL REPORT

1st APEC-PPSTI “APEC Centers” Cooperation Conference

Date: 9th - 11th of June 2016
Venue: APCTP Headquarters, Pohang, the Republic of Korea
Host: Asia Pacific Center for Theoretical Physics
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Day 0: 9th of June 2016

TECHNICAL TOUR

POHANG ACCELERATOR LABORATORY

Pohang Accelerator Laboratory (PAL) was established in 1988 on Pohang University of Science and Technology (POSTECH) campus. Then the construction of Pohang Light Source (PLS), which was completed in 1994, was initiated by Mr. Tae-Joon Park, the founding chairman of the Pohang Iron and Steel Company (POSCO), and Dr. Hogil Kim, the first President of POSTECH, with financial supports from POSCO and the Korean Government. Operated by PAL, PLS provides services to both domestic and international research groups, with a total of approximately 35,000 users and 4,400 projects from the first year of operation in 1995 until the year 2015. Synchrotron radiations generated from PLS can be used for a wide range of research areas such as life science, surface science, material science, Nanotechnology, etc. (source: pal.postech.ac.kr/paleng)
A welcome remark by Dr. Ki Bong Lee (second from right), the Director of PAL

Beam operation center
The storage ring and beamlines

Hard X-ray Experimental Hall
Day 1: 10th of June 2016

PARTICIPANTS FROM APEC CTF, THAILAND

1. Dr. Surachai Sathitkunarat, Executive Director, the APEC Center for Technology Foresight (APEC CTF), Director of Department of Energy and Environment, the National Science Technology and Innovation Policy Office (STI), Ministry of Science and Technology (MOST)

2. Dr. Apichat Aphaiwong, Policy Researcher, the APEC Center for Technology Foresight (APEC CTF), the National Science Technology and Innovation Policy Office (STI), Ministry of Science and Technology (MOST)

From left: Dr. Surachai Sathitkunarat, Dr. Apichat Aphaiwong
WELCOME, OPENING REMARKS, AND INTRODUCTIONS

The opening remarks were given by Associate Professor Woo-Sung Jung, Senior Director, the Asia Pacific Center for Theoretical Physics (APCTP), Ms. Rongfang Wang, Director of Division of International Organizations and Conferences, Ministry of Science and Technology, China (on behalf of Mr. Linhao Chen, the Chair of the Policy Partnership on Science, Technology, and Innovation (PPSTI) Working Group), and Mr. Alex Rogers, Director (Program), APEC Secretariat. The conference would focus on roles, standards, operations, and future cooperation between APEC Centers and long-term mechanisms under PPSTI Working Group.

Opening remarks by Dr. Woo-Sung Jung, the President of APCTP
INTRODUCTION OF APEC CENTERS AND LONG-TERM MECHANISMS

ASIA PACIFIC CENTER FOR THEORETICAL PHYSICS (APCTP) – REPUBLIC OF KOREA

The Asia Pacific Center for Theoretical Physics (APCTP) was established in 1996, relocated to Pohang in 2001, and marked the 20th anniversary in 2016. The current president of the center is Professor Bum-Hoon Lee, Sogang University. APCTP has 15 member economies, namely, Australia, China, India, Japan, Kazakhstan, Lao PDR, Malaysia, Mongolia, the Philippines, the Republic of Korea, Singapore, Chinese Taipei, Thailand, Uzbekistan, and Vietnam. The mission of APCTP is to advance physics in the Asia Pacific region, and the main functions are scientific activity hub, in-house research, and Physics outreach.

APEC VIRTUAL CENTER FOR ENVIRONMENTAL TECHNOLOGY EXCHANGE – REPUBLIC OF KOREA

The APEC Virtual Center for Environmental Technology Exchange (APEC VC) was approved as an official APEC projects at the APEC conference in Osaka in 1995. APEC VC is composed of 12 member economies, namely, Japan, Australia, Chinese Taipei, New Zealand, China, Vietnam, the Philippines, Thailand, Indonesia, Chile, Malaysia, and Republic of Korea. The goal of the APEC VC roadmap for 2013-2017 is on-offline exchange of environmental technologies to assist SMEs and developing economies. The vision is to build an environmental technology exchange network to bridge the gap between developing and develop economies. Member economies open their VC websites to create a global network, aiming at users from the government, academia, industries, and the public as beneficiaries. APEC VC Korea is under the National Environmental Information Center, Korea Environmental Industry and Technology Institute (KEITI). The APEC VC Korea website has established more than 20,000 database since 1999.
The APEC Center for Technology Foresight (APEC CTF) was established as a project of ISTWG within APEC in 1998. Then in 2012, APEC agreed to broaden the mandate of the former ISTWG to include issues of innovation policy development and intensify cooperation among governments, businesses, and academia, thereby, transforming the ISTWG into the PPSTI Working Group. APEC CTF is now hosted by the National Science Technology and Innovation Policy Office (STI), Thailand, with 10 International Advisory Board (IAB) and 10 staffs. The center aims to develop and diffuse foresight capability and leading edge planning tools to prepare APEC economies for rapid change and major societal challenges, by conducting APEC-wide foresight studies, providing consulting and trainings for public and private sectors, and organizing conferences on foresight and emerging technologies. Currently, APEC CTF is implementing a project entitled “Innovation Futures in APEC: Competitiveness and Grand Challenges” to identify a list of key technologies through foresight techniques and to formulate a policy recommendation based on key-technology readiness for the next decade. This project started in November 2014 and is expected to be completed in July 2016.
APEC COOPERATION FOR EARTHQUAKE SIMULATION (ACES) – JAPAN

The APEC Cooperation for Earthquake Simulation (ACES) project was endorsed at the Industrial Science and Technology Working Group (ISTWG) meeting in Singapore in 1997. The originating economy was Australia, and the sponsoring economies were China, Japan, and the USA. The objective is to study mechanisms of earthquake and tsunami generation in Asia Pacific region, to develop science and technology network and share technologies on earthquake and tsunami simulation, and to establish assimilation technology of numerical modelling for the prediction of future earthquake and tsunami disasters. One main activity is to organize biennial international workshops. The latest workshop was in Chengdu, China with more than 100 participants.

APEC CENTER FOR TECHNOLOGY TRANSFER (APECTT) – CHINA

The application to establish the APEC Center for Technology Transfer (APECTT) was approved at the 22nd ISTWG meeting in 2002. APECTT aims to provide integrated support for SMEs to enhance their STI capacity, including STI support events for private sectors and academia, breakthrough course for regional technology managers and practitioners, and technology commercialization services. The center has conducted 4 APEC forums/workshops, 5 APEC-support projects, and 1 ISTWG meeting (the 37th APEC ISTWG Meeting in 2009). The latest project is “the Co-establishment of an Online Service Platform for Collaborative Innovation of SMEs in APEC Member Economies” or Joinew. This online portal is to facilitate communication between researchers, specialists, technology transfer agencies, enterprises, institutes, technology managers, and patent owners. APECTT has proposed to initiate a long-term project entitled “Maximize Efficiency of Technology (MET)”. The goal is cooperation with relevant organizations in APEC region and capacity building and networking for companies and practitioners in STI.
APEC CLIMATE CENTER (APCC) – REPUBLIC OF KOREA

The APEC Climate Center (APCC) was endorsed by ISTWG and SOM and established in 2005. The mission is to utilize scientific knowledge and apply innovative climate prediction techniques to enhance the socio-economic well-being of member economies by developing a reliable real-time climate prediction system, acting as a center for climate data, helping build the capacity of member economies, and coordinative research on climate-environment-socio-economic system model. APCC has developed a climate prediction system based on a Multi-Model Ensemble (MME) technique which collects seasonal forecast data from 17 institutes in 9 countries. MME forecast products are monthly 3-month and 6-month climate prediction information, and BSISO forecast, scaling up from seasonal to intraseasonal forecasting. Other climate information services include accessing APCC forecasts, Climate Information toolKit (CLIK), and APEC Climate Center Data Service System (ADSS). APCC also organizes training programs, CLIK training workshops, young scientist support programs, APEC climate symposiums, APCC expert workshops, international conferences.

APEC MENTORING CENTER FOR THE GIFTED IN SCIENCE (AMGS) – REPUBLIC OF KOREA

The APEC Mentoring Center for the Gifted in Science (AMGS) promotes Mentor-Mentee network among scientists, science education professionals, and gifted students in science from APEC economies through exchange programs and joint research activities. One main program is the “Cross Mentoring Research Activity”. The objective is to provide a mentoring education program to high school students, freshman and sophomore college students by scientists, researchers, and science educators through an online system. The “APEC Youth Scientist Journal” is a program to verify and review researched contents from those who join the “Cross Mentoring Research Activity” by qualified scientists and researchers in APEC economies. In addition, the “APEC Future Scientist Conference” is a program to present results of researched contents, provide opportunities for academic exchange, and encourage network between mentors and mentees.
APEC RESEARCH CENTER FOR ADVANCED BIOHYDROGEN TECHNOLOGY (APEC-RCABT) - JAPAN

The APEC Research Center for Advanced Biohydrogen Technology (APEC-RCABT)’s goals are to solve problems of air and water pollutions by creating a science-based collaboration framework, to promote sustainable environment and green growth by converting organic wastes to high value-added products and clean energy technologies, to provide a new policy model by integrating STI with APEC regional collaboration framework, and to improve the dissemination effect and further connectivity of technologies by APEC platform. The Center is currently experimenting an innovative Hydrogenesis and Methanogenesis Technology (HyMeTek). This technology can convert agricultural wastes, industrial wastes, and kitchen wastes to carbon dioxide and hydrogen gas, and eventually, to methane gas. The advantages of HyMeTek are high loading, reduced facility cost, reduced amount of sludge, efficient COD removal, enlarged energy recovery, and increased water recycle.

APEC RESEARCH CENTER FOR TYPHOON AND SOCIETY (APTS) – CHINESE TAIPEI

The concept of the APEC Research Center for Typhoon and Society (APTS) was raised at the 37th ISTWG meeting in 2009, jointly proposed by Chinese Taipei and the Philippines. Then the center was opened in Taipei in November 2010 and in Manila in September 2011. ACTS has 10 Steering Committee members from Chile, China, Chinese Taipei, Japan, Republic of Korea, the Philippines, and Vietnam. The mission of the center is to improve scientific understanding of typhoon and heavy rain, to promote socio-economic awareness on typhoon-heavy rain impacts and social vulnerabilities, and to establish a platform that will facilitate experience sharing. From 2010 to 2015, ACTS has held 5 Typhoon symposiums, 10 training workshops, and 1 forum, with over 2,000 participants from 10 APEC member economies.
DISCUSSION ON ENDORSEMENT/RATIFICATION OF “CENTERS” AND OPERATION/ MANAGEMENT OF “CENTERS”

CHAIR: MS. RONGFANG WANG, MINISTRY OF SCIENCE AND TECHNOLOGY, CHINA

The objective of this session was to clarify standards and procedures that would be established for monitoring and evaluation of APEC PPSTI centers and their activities. The approach for discussion was bottom-up with consensus among the centers. The expected outcome was “Guidelines/Policy Recommendation”, which would be submitted for consideration at the next APEC PPSTI meeting in Lima (2016).

Major points of discussion for “Guidelines/Policy Recommendation” were as followed:

- Definition of “APEC PPSTI centers”
- Roles and responsibility of the centers
- Reports and reviews of the centers and their activities
- Endorsement, dis-establishment, and re-endorsement of the centers
- Management of the centers, including guidelines for publications, logo, sponsorship, social media, APEC projects and meetings, and operation with non-members
- Distinguishment between when the centers represent APEC and when the centers act in another capacity
- Supports and security in terms of human and financial resources of the centers

However, a consensus on “Guidelines/Policy Recommendation” could not be achieved. Nonetheless, it would be further considered and discussed at another APEC Centers Conference or APEC PPSTI Meeting.
Day 2: 11th of June 2016

DISCUSSION ON “POHANG DECLARATION” AND LAUNCHING A JOINT PROJECT

CHAIR: ASSOC. PROF. WOO-SUNG JUNG, APCTP, REPUBLIC OF KOREA

The “Pohang Declaration” was concluded as followed:

Pohang Declaration
Pohang, Republic of Korea
June 11, 2016

We, the representatives of the APCTP (Asia Pacific Center for Theoretical Physics), APEC CTF (APEC Center for Technology Foresight), ACES (APEC Cooperation for Earthquake Simulation), APECTT (APEC Center for Technology Transfer), APCC (APEC Climate Center), AMGS (APEC Mentoring Center for the Gifted in Science), ACABT (APEC Research Center for Advanced Biohydrogen Technology), ACTS (APEC Research Center for Typhoon and Society), participating in the APEC-PPSTI “APEC Centers” Cooperation Conference, held in Pohang from 9 to 11 of June 2016, having considered the APEC and PPSTI’s mission, and aiming to promote better life, sustainable economic growth, creation of jobs and tackling of common challenges including inter alia climate change and environmental issues for the region through science, technology and innovation, declare as follows:

1. We affirm that the Centers actively engage in and support the advancement of and cooperation in science, technology and innovation which contributes to the regional growth and development.
2. We reiterate the Centers’ involvement in research and development pursuing PPSTI’s mission and wider APEC goals.
3. We secure our human and financial resources, and with the support of APEC as appropriate, prepare adequate environments that support our longer term involvement.
4. We invite the member economies to engage constructively in the work of the Centers.
5. We encourage the Centers to promote cooperation, share information, conduct collaborative activities and joint projects, and regularly report outcomes to the PPSTI.
Participants then discussed an opportunity to launch a new project. An initiative would be cooperation between centers with similar expertise and areas of interest, for instance, APCC (APEC Climate Center) and ACTS (APEC Research Center for Typhoon and Society).

The APEC-PPSTI “APEC Centers” Cooperation Conference would be held annually, either as a back-to-back of the APEC PPSTI Meeting or as a separate meeting, voluntarily hosted by rotating centers.
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