

25TH ANNIVERSARY

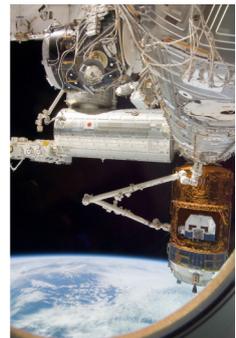


Japan Science & Technology Newsletter

July, 2011

To celebrate the 25th Anniversary of Science and Technology co-operation between Canada and Japan, the Embassy of Japan presents the *Japan Science & Technology Newsletter*, a quarterly report on Japanese technology highlights and news. Canada and Japan have shared 25 years of cooperation in the fields of science and technology reaching new heights, including the docking of Japan's H-II Transfer Vehicle with the ISS, made possible by the Japanese rocket H2B and the Canadarm2.

In the spirit of this strong relationship the Embassy of Japan would like to keep you informed of Japanese S&T, in the hopes of strengthening our cooperation further, now and in the future.



1. Japan-Canada S&T cooperation

1.1 First joint Japan-Canada stem cell workshop

At the annual meeting of the International Society for Stem Cell Research in Toronto, the first Japan-Canada stem cell workshop was held on June 18. 40 well-known stem-cell researchers attended the workshop; 22 from Japan and 18 from Canada, where Japanese and Canadian researchers gave presentations regarding stem cell research and its related fields, engaging in discussion afterwards. Scientists and researchers both agreed to hold further discussions to seek areas of cooperation focused on future research. (June 18)

http://www.ca.emb-japan.go.jp/JapaneseSite/Taishikan/stem_cells_workshop_2011.htm



1.2 Gairdner Award granted to Dr. Shizuo Akira

Dr. Shizuo Akira was awarded the 2011 Canada Gairdner International Award by the Gairdner foundation for his "ground breaking discoveries and definition of the family of Toll like receptors and the array of microbial compounds that they recognize to provide innate resistance to infection." Dr. Akira is the Director and Professor of the WPI Immunology Frontier Research Center in Osaka University. He has received a number of prestigious awards including Robert Koch Prize, William B. Coley Award, and Keio International Medical Science Prize. The 2011 Canada Gairdner Awards Dinner will be held on October 27, 2011.

<http://www.gairdner.org/awardrecipients/2011recipients/shizuoakiramdpd>

2. Japanese S&T

2.1 "K" ranks as world's fastest supercomputer

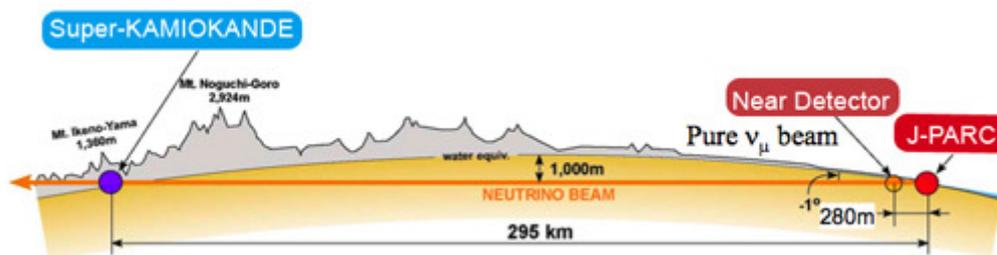
The International Supercomputer Conference announced that "K" is the world's fastest computer in its semi-annual ranking. K is a collaboration of Fujitsu Inc. and RIKEN, a Japanese government-funded research institute, and is the quickest of the world's 500 fastest computers with a certified speed of 8.16 petaflops - 8.16 quadrillion operations a second, three times faster than the next-quickest machine, the Tianhe-1A, built by China and Nvidia. Started in 2006 K will be completed next year and cost an estimated ¥112-billion (US\$1.4 billion), it is housed at the RIKEN Kobe Institute with its 68,544 interlinked central processors. The Tsubame 2.0 supercomputer from the Tokyo Institute of Technology was ranked fifth. (June 20)

<http://www.riken.jp/engn/r-world/info/release/press/2011/110620/index.html>

2.2 First sign of electron neutrino transformation in T2K Experiment

Researchers conducting the T2K experiment have observed signs of muon neutrinos' transformation into electron versions, for the first time ever. The T2K experiment, which studies neutrino interactions at a large distance from their source, has detected 88 neutrinos including six indicating the characteristics of electron neutrinos over a distance of 295 km, from the Japan Proton Accelerator Research Complex in Tokaimura to the Super-Kamiokande particle detector in Hida, through the quantum mechanical phenomena of neutrino flavor oscillations. The group which includes scientists from the University of Tokyo have concluded that they had a 99.3% chance to include muon neutrinos that transformed into electron versions. Observing the appearance of electron neutrinos will determine the research direction of neutrino physics in the future, and is expected to provide a clue to solving the mystery of how the universe was created. J-ARC is expected to resume production of muon neutrinos by the end of 2011 and the T2K experiment will continue accumulate the target number of events to confirm electron neutrino appearance, as well as pursue the further understanding of this appearance by combining the neutrino measurements with measurements using anti-neutrinos, which is also the purpose of this experiment. The T2K experiment which claims to have the best sensitivity, has internationally attracted more than 500 researchers from 12 countries. (June 15) http://www.kek.jp/intra-e/press/2011/J-PARC_T2Kneutrino.html

Schematic View of the T2K Experiment



2.3 Power source for mobile phones developed from boiling water

TES NewEnergy, in Osaka has created the Hatsuden-Nabe thermo-electric cookpot which turns heat from boiling water into electricity and feeds into digital devices such as smartphones, music players and global positioning systems using a USB port. The pot features strips of ceramic thermoelectric material that generate electricity through temperature differentials between the 550 degrees Celsius at the bottom of the pot and the water boiling inside at 100 degrees, and the device takes three to five hours to charge an iPhone. Inspired by the March 11 earthquake and tsunami, TES NewEnergy sees demand for this type of energy generation in developing countries with irregular power grids, and unlike solar power generators, this device can be used at any time, regardless of weather with easy portability. TES NewEnergy was established in 2010 to promote products based on technology developed at the National Institute of Advanced Industrial Science and Technology, Japan's largest public research organisation, and also makes and markets equipment to transform residual heat from industrial waste furnaces into electricity. (June 20)

http://tes-ne.com/English/03_product_e.html <http://tes-ne.com/PDF/epan.pdf>

2.4 Recipients of grants from the Japanese government will establish new R&D centres

The recipients of the government Subsidy Program for Projects Promoting Asian Site Location in Japan for FY2010 will be salesforce.com Co. (United States), Zydus Pharma Japan Co. (India), Dyesol Japan Co. (Australia), Eurocopter Japan Co. (France), and Dou Yee International Private Ltd. (Singapore). The ¥2.5 billion program is led by the Ministry of Economy Trade and Industry with the aim of establishing of new high-value-added sites in Japan, and is expected to have positive effects in a range of fields with an influx of innovative technologies and highly skilled human resources as part of the Japanese government's New Growth Strategy. The 'projects were judged based on their uniqueness, added value and potential ripple effects on the Japanese economy, as well as on their overseas locational competitiveness,' according to METI. The recipient companies will all launch R&D sites in 2011 in the areas of IT services, pharmaceuticals, next-generation photovoltaic cells, and special-purpose helicopters, and LCDs. (April 28)

http://www.meti.go.jp/english/press/2011/0428_01.html

<http://www.plusplasticelectronics.com/energy/dyesol-to-set-up-r-and-d-lab-in-japan-31866.aspx>

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