

## Canada-Japan collaboration in accelerator science

On 7 July, while the Emperor and Empress of Japan were visiting Canada, Nigel Lockyer, the director of TRIUMF, gave a lecture at the Canada – Japan Particle Accelerator Science Symposium at the Embassy of Canada in Tokyo, to commemorate the 80th anniversary of diplomatic relations between Japan and Canada. Today, Canada and Japan are partners in numerous international groups and organisations such as the G8, Asia-Pacific Economic Cooperation (APEC) and the Organisation for Co-operation and Development (OECD). This symposium showcased one of many Canada-Japan collaborations: the active partnership in accelerator science.

The programme featured presentations by leading researchers in particle accelerator science, starting with the opening speech by Robert Derouin, Minister of the Embassy of Canada in Japan, followed by speeches by representatives from the Japanese Ministry of Education, Culture, Sports, Science and Technology (MEXT), Shinichiro Izumi, director general of the Science and Technology Policy Bureau, and Satoru Otake, director of the basic and generic research division. Izumi introduced the memorandum of understanding (MOU) signed right before the symposium between TRIUMF and the RIKEN Nishina Centre for collaborations on the study of accelerator-based science including accelerator development, theoretical and experimental research. Otake described TRIUMF's "meson factory" experiment as being symbolic for "the tight strong relationship between Japan and Canada", since both countries utilised the  $\eta$  meson as predicted by Hideki Yukawa, the first Japanese Nobel laureate.



TRIUMF Director Nigel Lockyer giving his talk. Image: Embassy of Canada in Japan



KEK Director General Atsuto Suzuki at the symposium. Image: Embassy of Canada in Japan

The keynote address was given by Pierre Coulombe, the president of National Research Council of Canada and the chair of the Funding Agencies for Large Colliders (FALC) committee, entitled "Global Science, Why?" He described particle physics as "the future" for youth and world prosperity. He also described the International Linear Collider project as being "truly massive" and that "such expenditure is likely to be beyond the possibility of any one country or continent," addressing the reasons for global collaborations in science and technology.

Following that, Nigel Lockyer and KEK Director General Atsuto Suzuki discussed the "successful history" of Canada-Japan collaboration in their presentations, both entitled each laboratories' "Present and Future." Lockyer presented TRIUMF's current activities and their five-year plan, where he introduced two focused platform technologies: nuclear medicine and the superconducting radiofrequency accelerator. Suzuki introduced KEK's current project including the recent opening of the Japan Proton Accelerator Research Centre (J-PARC) in Tokai, Japan, which represents the fruition of the KAON project that began in Canada more than two decades ago.

Dean Karlen, from the University of Victoria and TRIUMF, who is a leader of the Canadian group for the T2K neutrino experiment and the principle investigator of the project to build a superconducting electron accelerator at TRIUMF, gave his lecture about Canada's role in two major international projects: T2K and ILC. "In Canada, initial ILC R&D has been focused on detector technology, in particular, in the micropattern time projection chambers which are being deployed in the T2K experiment," said Karlen. Now, the Canadian funding agency approved the request to build a low-energy, high-current electron accelerator at TRIUMF, which will use the ILC cavity design. "Canada has also become involved in the accelerator technology R&D programme."



Dean Karlen discussing two major projects: T2K and ILC. Image: Embassy of Canada in Japan

There were also presentations from Yasushige Yano, the director of the RIKEN Nishina Centre for Accelerator-Based Science, about its rare isotope beam factory (RIBF) and Hirohiko Tsujii, director of the Research Center for Charged Particle Therapy at the National Institute of Radiological Sciences (NIRS), discussed potential medical applications of accelerator beams. Six leading scientists from Canada and Japan on the discussion panel addressed the importance of Canada-Japan collaborations in international accelerator projects and the future of accelerator science and technology.

The symposium successfully attracted 114 attendees from government, laboratories, industries and universities.

Canada-Japan relationship, which is already solid, will certainly deepen especially on the collaboration in particle physics.

-- *Rika Takahashi*