



Submission No 8

Inquiry into Australia's Relations with the Republic of Korea; and Developments on the Korean Peninsula

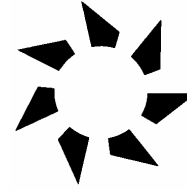
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Australian Academy of Science



Australian Academy of Technological
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26 May, 2005

Mr John Carter
Secretary
Foreign Affairs Sub-Committee Joint Standing Committee on
Foreign Affairs and Trade
Parliament of Australia
Canberra ACT 2600

Dear Mr Carter,

Australia's Relationship with Korea in Science and Technology

The Australian Academy of Science (AAS) and the Australian Academy of Technological Sciences and Engineering are well placed to comment on the strong links in Science and Technology (S&T) between Australia and Korea, and are actively involved in strengthening these links. This area was not highlighted in the Joint Standing Committee on Foreign Affairs, Defence and Trade's terms of reference but is of fundamental importance both in its own right and in underpinning economic, environmental and social developments in both countries, so-called triple bottom line (TBL) issues. The links in S&T are being fostered by recognition of their importance at levels that include Governments, research institutes and universities, and individual scientists.

Australia and Korea are major trading partners with substantial commercial, scientific and technological interchanges.

The general strategy of AAS and ATSE, through their International Activities, is to use high-level established links where possible, while building on and developing new linkages and collaborations to improve and broaden Australia's scientific, engineering and technological strengths. To this end, it:

- provides Australian researchers with the opportunity to collaborate with foreign colleagues;
- organises workshops to enable the exchange of technical information and identification of collaborative activities;
- sends missions of Fellows from industry, academia and government agencies to develop new alliances; and
- undertakes visits to universities, research institutes and industry in other countries, to build productive alliances.

The Academies believe the best way to strengthen the on-going relationship between Australia and Korea is through increased science and technology cooperation. This would be achieved through industry and researchers working together to gain a better understanding of each others strengths and then determine what steps need to be undertaken to improve our science linkages. A good starting point would be through a series of strategic workshops to bring together outstanding early to mid-career researchers from Australia and Korea to explore opportunities for cooperation in a specific activity to lead to the establishment of a foundation for cooperation between Australian and Korean research scientists in key technologies. This would then lead to a larger demand for exchanges, scholarships and placements within Australian and Korean Universities, Research Institutes and Industry, thus raising the S&T profile in each other's country.

A good example of long established Australian-Korean linkages is in the area of rheology (the study of deformation and flow). The Academies initially sponsored an exploratory workshop in 1996 and since that time the Australian Society of Rheology and the Korean Society of Rheology have met bi-annually through self funded strategic workshops and international seminars, and publish four times a year the *Korea Australia Rheology Journal* covering fundamental and applied research with immediate or potential value in rheology.

Over the last few years Australian astronomers have also established fruitful collaborations with colleagues in South Korea. The University of New South Wales (UNSW) has a collaboration with the Department of Physics of Seoul National University in Korea which involves the joint use of the Australian Mopra telescope (partially supported through UNSW contributions) and the NANTEN2 telescope in Chile (a Japanese-Korean-German-Chilean collaboration) to study the interaction of supernova remnants with molecular clouds. The collaborations have included the use of the Korean Taeduk 14m millimetre telescope, the exchange of PhD students, and the production of many scientific papers in refereed journals.

UNSW has also been collaborating with Yonsei University since 2003 on the establishment of a new robotic telescope at Siding Spring Observatory in Australia for research purposes. UNSW already has two complimentary telescopes at Siding Spring. The new telescope is owned by the Koreans, and UNSW is assisting with its installation and operation. UNSW envisage that PhD students from Korea will come to UNSW for part or all of their training on the new telescope. The telescope was installed in early 2005 and is undergoing commissioning tests.

BlueScope Steel Research (Port Kembla Steel Works) has a research collaboration in primary processing with the Korean company Posco (the world's leading steel producer) dealing with sintering and blast furnace ironmaking. This collaboration has been significant in the sense that research work was carried out and results exchanged between Posco, CSC (Taiwan steel company) and BlueScope Steel.

Australia was a founding member of the Asia Pacific Center for Theoretical Physics, established in Korea in 1995, and now based at the Pohang Institute of Technology. This membership supports Australian participation in workshops and conferences in Korea, and generates support for Australian theoretical physics workshops as "APCTP External Activities"

Some of the Academies key activities with Korea have been through a 1992 MOU with the Korean Science and Engineering Foundation (KOSEF). This has resulted in: 18 workshops and 13 delegations in areas including manufacturing technologies, light alloys, Polymers and ITC.

Our close relationship with KOSEF has been mutually beneficial and assisted in the development of productive linkages between Australian and Korean scientists and technologists. We expect that this cooperation will continue to be strengthened through the exchange of technical information, developing new alliances and, identification of collaborative activities.

In November 2003, the President of AAS, Dr Jim Peacock, was invited to attend the opening of the new building for the Korean Academy of Science and Technology (KAST) and presented the paper entitled “Science and the Transformation of Agriculture – Improving Health and Quality of Life” at the 2003 KAST Multilateral Conference.

The recent election of the National Academy of Engineering of Korea (NAEK) to membership of the International Council of Engineering Academies of Technological Sciences (CAETS) has provided ATSE with another avenue for closer involvement with Korea. NAEK has an active program of meetings, seminars and forums and undertakes a number of projects each year, including reports for and to Government. They have very strong linkages with industry and government.

North Korea

ATSE hosted and coordinated the visit of an exploratory mission to Australia from North Korea by a four member delegation from the Academy of Sciences, DPR Korea in June 2001. This mission provided an excellent opportunity to :

- showcase Australia's science, engineering and technology capabilities;
- allow the delegation to meet with senior people involved with Australian Academies, Universities, key Government Departments, CRCs, CSIRO and industry to develop new links;
- foster and explore collaborative linkages between Australia and DPR Korea;

The delegation were very impressed with their visit to Australia and it would appear that opportunities for training of young research scientists will be explored in the first instance, followed by exploration of opportunities for future collaboration between Australian and DPR Korea researchers.

From August to December 2003 the ATSE Crawford Fund through funding received from UNESCO, arranged for two young scientists from DPR Korean Academy of Sciences to undertake research training at the Plant Biotechnology Centre DNRE, La Trobe University.

Future Activities

The Academies believe the promotion of contacts among the next generation of leaders in science, engineering and technology will lead to the development of long-term substantial cooperation between Australia and Korea. Both Academies ensure that international activities involve young researchers and key industry players in order to steer possible collaboration towards industrially significant R&D.

The Academies hope that this submission is useful. The Academies would be pleased to meet with the Joint Standing Committee on Foreign Affairs, Defence and Trade to discuss any of the above issues.



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