

Feds launch S&T review

As announced June 28 in Ottawa, Industry Minister John Manley and Dr. Jon Gerrard, Secretary of State (Science, Research and Development) have launched a federal review of science and technology.

The primary aim of the review is "to develop a federal strategy that establishes the most effective methods of managing S&T assets and investments that fully support the economic, social and environmental goals of Canadian society" as announced in a release provided by Industry Canada.

There are three key components to the initiative:

- an internal review of S&T activities of federal departments and agencies
- an independent assessment by the National Advisory Board on S&T (NABST)
- a series of public consultations across the country with input from research and academic communities, business, labour and governments.

The series of public consultations takes the form of workshops in more than 20 communities across Canada in 1994 July and August, five regional conferences that summarize workshop findings and merge input from key stakeholders in September, and a national conference in Ottawa on October 14.

A final S&T strategy is planned for release in early 1995.

Copies of locations, dates and hosts for all workshops can be obtained from the Industry Canada Distribution Centre (613) 954-5716, along with copies of two discussion papers "*Building a Federal Science and Technology Strategy*" and "*A Resource Book for the Science and Technology Consultations*."

TASCC Director John Hardy encourages facility users, researchers and visitors to provide input into the review process. "IF OUR COMMUNITY WANTS TO BE FUNDED IN THE FUTURE, WE MUST MAKE OURSELVES HEARD IN THE PRESENT" he urges.

This can be done in several ways:

- by participating in a community workshop

(Continued)

Facility report

Experiments during June included: one 8π experiment, RT2E tests, AMS sample measurements, tests of a detector for elastic-recoil experiments, calibration of beam-pulse detectors for time-of-flight, and cyclotron beam development.

Ten days were scheduled for facility maintenance, which included Tandem high-voltage tests, extensive tank inspection, and cleanup; in general, the Tandem was in excellent condition.

Prior to the maintenance shutdown, Tandem operation was demonstrated at 16.0 megavolts, which is at least 0.5 megavolts higher than the previous operating limit. For the demonstration, a carbon beam was accelerated for more than one hour, with no sparks produced.

Five new cyclotron beams were produced during June. They are: 25 MeV/A silicon-28, 18 MeV/A titanium-48, 21 MeV/A iodine-127; and both 5.4 and 6.35 MeV/A bismuth-209. The iodine beam was the highest-energy cyclotron beam produced so far.

Beams produced during June were:

Ion	Energy (MeV)
^{12}C	8
^{15}N	7
^{18}O	97
^{28}Si	700
$^{35,36,37}\text{Cl}$	100
^{48}Ti	864
^{127}I	2667
^{197}Au	200
^{209}Bi	1129, 1327

Construction begins on CPT Mass Spectrometer

The Canadian Penning Trap Mass Spectrometer (CPT-MS) has entered the construction phase, having received 1.1M\$ in funds from NSERC, Chalk River Laboratories, the University of Manitoba and McGill University.

Both the Nd-YAG laser, used for desorption of the sample, and the excimer/dye laser combination used for the resonant-ionization step, have been ordered; they are expected to arrive at TASCC this September.

An existing optical table is being transferred from McGill to CRL for use with the laser system. At TASCC, designs for the laser enclosure are complete and construction is imminent. An access hole has been drilled in the ceiling to allow the laser beams access to the spectrometer, which will be located on the floor below.

The conceptual design for the vacuum system has been completed and its requirements for both hardware and control are finalized. Requisitions for quotations will be sent out in the near future.

Designs for the He-jet transport system and the ionization chamber have been completed by staff at TASCC; the designs have been transferred to the machine shop at the University of Manitoba for fabrication.

Both the design and fabrication of the RFQ trap is being carried out at McGill. Computer simulations of ion injection into the RFQ trap and subsequent transfer of ions to the Penning trap are being undertaken by both McGill and TASCC. These calculations will determine the layout of the ion-optical system and the exact dimensions of the vacuum chambers.

The electronics necessary for data acquisition and control of experiments have been identified. Different means of carrying out computer control of the spectrometer are being evaluated. Once the computer system has been selected, software development will be performed at Manitoba.

S&T review continued

- by participating in an electronic discussion group through the Internet address **can.ai**
- by submitting written, faxed or e-mail letters, opinions, comments, suggestions and even full briefs to the S&T Review Secretariat. The e-mail address is **S&T.REVIEW@ISTC.CA**.

Dates and locations for the August community workshops and the regional conferences follow:

Community Workshops

August

2	Sherbrooke
3	Saint-Hyacinthe
4	Quebec City
5	Rimouski
8	Hull
9	Hamilton
11	Windsor
12	Sault Ste. Marie
15	Whitehorse
23	Waterloo
25	Winnipeg
29	Ottawa

Regional Conferences

September

1-2	Vancouver
8-9	Saskatoon
15-16	St. John's
22-23	Montreal
29-30	Toronto

Tentative scheduling places commissioning tests for the He-jet/coupled resonance-ionization ion source and the RFQ trap in mid-1995. It is expected that the entire spectrometer will be ready for final tests about 6 months later.

June experiments

Experiment	Development of new cyclotron beams of iodine-127 and bismuth-209. These two beams bring to 79 the total number produced from the superconducting cyclotron.
Researchers	TASCC Beam Commissioning Team
Beams	21 MeV/A ¹²⁷ I; 6.35 MeV/A ²⁰⁹ Bi
Duration	5 days

Continued

Experiment Tests of a large-solid-angle detector for forward elastic-recoil studies and other applications.
Researchers J.S. Forster (*TASCC*)
Beam 200 MeV ^{197}Au
Duration 1 day

Experiment Calibration of beam-pulse detectors for determinations of beam energies by time-of-flight.
Researchers J.W. McKay and G.R. Mitchel (*TASCC*)
Beams 8 MeV ^{12}C ; 7 MeV ^{15}N
Duration 1 day

Experiment AMS measurements of chlorine-36 content in samples provided by the IAEA
Researchers H.R. Andrews, V.T. Koslowsky, W.G. Davies, J.C.D. Milton, B.F. Greiner, Y. Imahori and J.W. McKay (*TASCC*); R.J.J. Comett, L.A. Chant, S.J. Kramer-Tremblay, G.M. Milton, G. Jirovec and S. Richardson (*Environmental Research Branch, CRL*)
Beam 100 MeV $^{35,36,37}\text{Cl}$
Duration 5 days

Experiment Study of feasibility of resonant transfer and two-electron excitation (RT2E) measurements for He-like titanium on a silicon crystal.
Researchers J.S. Forster, G.C. Ball, W.G. Davies and J.S. Geiger (*TASCC*)
Beam 18 MeV/A ^{48}Ti
Duration 1 day

Experiment Development of new cyclotron beams of bismuth-209, titanium-48 and silicon-28. These beams bring to 82 the total number produced from the superconducting cyclotron.
Researchers TASCC Beam Commissioning Team
Beams 5.4 MeV/A ^{209}Bi ; 18 MeV/A ^{48}Ti ; 25 MeV/A ^{28}Si
Duration 4 days

Experiment Detailed spectroscopy of platinum-187,-188 with the 8π spectrometer.
Researchers S. Pilotte (*U. of Ottawa*); M. Cromaz and J. DeGraaf (*U. of Toronto*); S.M. Mullins (*McMaster University*); V.P. Janzen and D.C. Radford (*TASCC*)
Beam 97 MeV ^{18}O
Duration 4 days

"Perfection of means and confusion of goals seem – in my opinion – to characterize our age."

ALBERT EINSTEIN

Next month

- DSAM measurements on praseodymium-129
- Search for isospin effects in the decay of the giant dipole resonance
- Cyclotron beam development
- Assessment of feasibility of measuring RTE2
- Spectroscopy of tin-112
- β -decay studies of titanium-40, -42 and nickel-54, -55
- Spectroscopic studies of tin-112
- Study of coulex in the second well
- Spectroscopy of lutetium-162

Facility operating record

Elapsed Time (Year-to-date) 4751 h

Beam Available	
Tandem Only	2579.1
Tandem + Cyclotron	345
Beam Development	999.4
Planned Shutdown	531
Forced Shutdown	296.5

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