

CA9700936

NEWSLETTER

1992 Sept Vol. 6 No. 9

TASCC

News about Chalk River's Tandem Accelerator Superconducting Cyclotron facility for users and potential users

Printed 1992 Oct 16

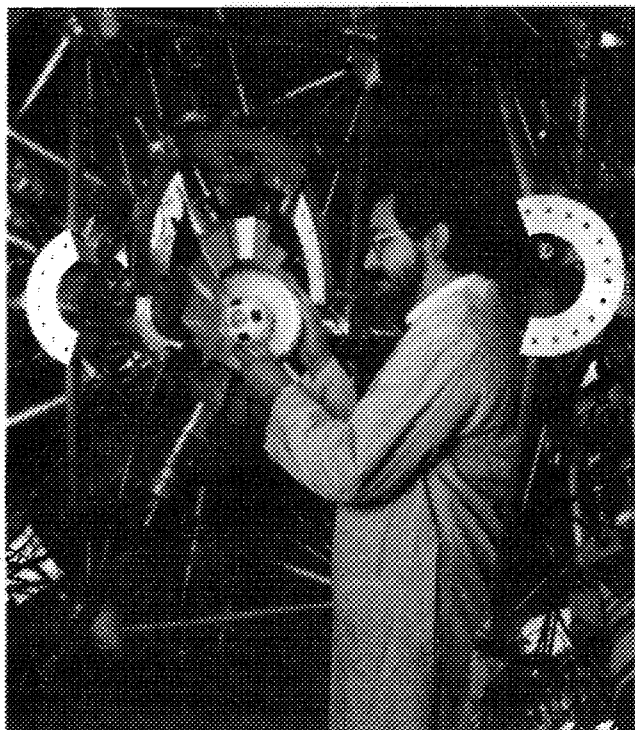
TASCC physicist wins top AECL award

Alfredo Galindo-Uribarri, a physicist with TASCC's Nuclear Physics branch, has just been presented with The Discovery Award, the most prestigious in AECL's Awards Recognition Program. It is presented annually to only a few selected employees who fulfill certain specified criteria.

The award consists of an engraved pewter plaque mounted in a wooden frame plus a print of the famous schooner "Discovery". Dr. Terry Rummery, President of AECL Research, made the presentation.

Alfredo's plaque reads "For the development and implementation of a charged-particle detector array (miniball) for nuclear physics research at the 8 pi and other TASCC facilities".

Colleagues join in congratulating Alfredo on this important recognition of his work at TASCC.



Alfredo Galindo-Uribarri, winner of the AECL Discovery Award, installs the miniball detector array inside the 8π spectrometer.

TASCC hosts 29th SNEAP symposium

Sixty participants in the 29th Symposium of North Eastern Accelerator Personnel were hosted by TASCC September 22 to 25.

The operators of 27 accelerators from eight countries had the opportunity to hear presentations on numerous technical topics, as well as to discuss common operational problems.

Formal topics included: ion sources, charging systems, boosters, control systems, beam optics, monitoring, upgrades and safety. Two days were spent in Hull, Quebec, separated by a day at Chalk River that included two sessions, a tour of TASCC and an evening banquet with live entertainment.

Facility report for September

Beams were provided this month to the 8π spectrometer, to ISOL and for AMS tests and cyclotron operator training.

Beams produced were:

<i>Ion</i>	<i>Energy MeV</i>
^{12}C	120
^{37}Cl	187
$^{35, 37}\text{Cl}$	100
^{37}Cl	1295
^{37}Cl	138
^{19}F	85 & 95

We opened the Tandem tank once briefly to replace the terminal foil-changer controller and once to remove a faulty generating voltmeter. Disruptions to beam production were minimal.

We did not open the cyclotron all month but vented the midplane once to permit upgrading of trim-rod shaft seals. A record beam current was produced when up to 520 nA of 35 MeV/u chlorine-37 was extracted at the end of a production run.

A facility cooling-water-system leak mid-month prompted a shutdown of several subsystems for eight hours during beam setup for cyclotron boosting.

TASCC receives report card

The written report from the 1992 Nuclear Physics Technical Review Committee was recently submitted to TASCC. The six-member committee, with representatives from five countries, heard 17 presentations at Chalk River in April before preparing its report.

In the report, the committee stressed that "in most areas TASCC continues to have a very productive and first-rate research program". It added that "with the commissioning of the cyclotron, TASCC is at present one of the most modern and versatile facilities for heavy-ion physics in the world, which should allow the laboratory to continue to be a leader not only in nuclear physics but in many other domains of heavy-ion research". Additional support was recommended in the areas of γ -ray spectroscopy theory and material-science experiments.

Commenting on an important survey done by McMaster University's Jim Waddington, the committee said that "outside users are pleased with the support they receive from TASCC. The lab seems to have

happy customers." Even so, the committee recommends that high priority be given to increasing the involvement of external users in TASCC operations.

Members of the 1992 committee are Jean Barrette, John Sharpey-Schafer, Yves Queré, Ed Tomusiak, Dave Clark and Ernst Roeckl.

New member of reactions group

David Bowman, a new physicist hired for the TASCC reaction-mechanisms group, has just joined the Nuclear Physics branch.

David obtained his Ph.D from Berkeley in California under Luciano Moretto, then worked with Konrad Gelbke's group at MSU for three years. At TASCC he will work initially on current projects aimed at studying heavy-ion reaction mechanisms with TASCC beams.

September experiments

Experiment	: Study of hyperdeformation in dysprosium-152 with the 8π -spectrometer. Results confirm the hyperdeformed ridge seen previously by the group. A particle tag and isomer tag were used to isolate the channel of interest. A clean dysprosium-152 superdeformed band was also observed.
Researchers	: A. Galindo-Uribarri, H.R. Andrews, G.C. Ball, R.W. MacLeod, D.C. Radford and D. Ward (<i>TASCC</i>); V.P. Janzen (<i>TASCC/McMaster U.</i>); M. Cromaz and T.E. Drake (<i>U. of Toronto</i>); S. Pilotte (<i>U. of Ottawa</i>)
Beam	: 187 MeV $^{37}\text{Cl}^{+10}$
Duration	: 8 days

Experiment	: Production tests of heavy chlorine and heavy potassium isotopes. Neutron-rich isotopes of chlorine up to chlorine-41 were observed in yields sufficient for future experiments.
Researchers	: G. Savard, E. Hagberg, V.T. Koslowsky, J.C. Hardy, J.G. Hykawy and M.J. Watson (<i>TASCC</i>)
Beam	: 35 MeV/u $^{37}\text{Cl}^{+15}$ using an enriched ion source cone
Duration	: 4 days

Experiment : Search for previously-reported intruder band in indium-109; DSAM measurement of transition lifetimes for an intruder band in indium-111; study of high-spin spectra for indium-110, with the 8π spectrometer.

Researchers : V.P. Janzen (*TASCC/McMaster U.*); S.J. Gale and E.S. Paul (*Liverpool University*); D.B. Fossan, P. Vaska, D.R. Lafosse and H. Schnarre (*SUNY, Stonybrook*); S. Mullins and G. Hackman (*McMaster U.*); S. Pilotte and D. Cameron (*U. of Ottawa*); R. Wadsworth (*U. of York*); D.C. Radford (*TASCC*); M. Cromaz and J. DeGraaf (*U. of Toronto*)

Beams : 138 MeV $^{37}\text{Cl}^{+10}$; 85 MeV $^{19}\text{F}^{+10}$; 95 MeV $^{19}\text{F}^{+6}$

Duration : 7 days

Experiment : AMS rapid cycling tests and tests of minicups for detection of $^{35}, ^{37}\text{Cl}$ off-axis after the Tandem Analyzing magnet. The use of these cups and rapid cycling will improve accuracy by more frequent monitoring of the stable isotope currents.

Researchers : H.R. Andrews, V.T. Koslowsky, Y. Imahori, W.G. Davies, J.W. McKay, B.F. Greiner and J.C.D. Milton (*TASCC*); R.R. J. Cornett and G.M. Milton (*Environmental Research Branch*)

Beams : 100 MeV $^{35}, ^{36}$ & ^{37}Cl

Duration : 2 days

Next month

- Cyclotron development of 23 MeV/u carbon-12 and 36.5 MeV/u oxygen-18
- AMS sample measurements
- Water radiolysis with high energy carbon beam
- ISOL ion-source response measurements
- Measurement of gas release from CANDU fuel

Facility operating record

Elapsed Time (Year-to-date)	6504h
Beam Available	
Tandem Only	3088
Tandem + Cyclotron	1198.5
Beam Development	1060.8
Planned Shutdown	638.4
Forced Shutdown	518.3

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