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July 2008

Dear RIBF users

We are sending the 2nd volume of the RIBF Quarterly with the most up to the minutes information on our RI Beam Factory. The RIBF Quarterly including past issue is always available at our web site :

<http://www.nishina.riken.jp/UsersGuide/>

Present status

Oil contamination problems

In order to fix the oil contamination problems which were discovered several months ago in the liquid helium cryogenic plants at both BigRIPS and SRC as reported in the previous RIBF Quarterly, the cold box (main refrigerator) are being cleaned, and the oil remover system for the compressor are being upgraded.

The cold boxes, Linde TCF200 for SRC and Linde TCF50S for BigRIPS, are disassembled, and all the components are being cleaned up to remove the oil which came from the compressor. The cold boxes will be assembled back when they are cleaned thoroughly.

To upgrade the performance of the oil remover system, two more stages are added to the present system consisting of four stages of oil remover units. The upgrade is expected to improve the oil contamination by approximately two orders of magnitudes.

Both of the liquid helium cryogenic plants will be ready for continuous operation by the end of August. We plan to begin the cooling down process of the magnets at the beginning of September, so that BigRIPS and SRC will be operational by the beginning of October. It takes about one month to cool down the magnets.

RIBF Beam Development

Originally, the ZD commissioning as well as experiments at BigRIPS were scheduled in June as announced in the previous Quarterly. Due to the oil contamination problem, however, we performed the beam developments of ^{48}Ca and U beam down to IRC in June and July, instead, part of which was scheduled in this fall.

The results of a series of the studies are very promising. As for ^{48}Ca beam, an intense beam, 250 p nA, at 114 AMeV, corresponding to 1.4kW (CW), was successfully extracted. The long-term stability of the beam intensity has been also confirmed. Since the transmission efficiency of SRC is expected to (or should) be high (> 90 %), BigRIPS experiments using intense ^{48}Ca beam are ready to start.

As for the U-beam development, the intensity of 0.34 p nA at the IRC exit was achieved, which was about one order higher than that at the last commissioning. The stability of the beam was also greatly improved.

We confirmed that there is no serious problem of the charge-stripper carbon foils at this intensity. More intense U beam is expected in the next fiscal year with a newly installed superconducting ECR ion source.

Operational Status

Except for BigRIPS experiments postponed due to the reasons mentioned above, all experiments at RILAC, AVF and RRC are being conducted as scheduled. The current beam-time schedule can be found at:

<http://www.rarf.riken.go.jp/rarfmat/pc.html>

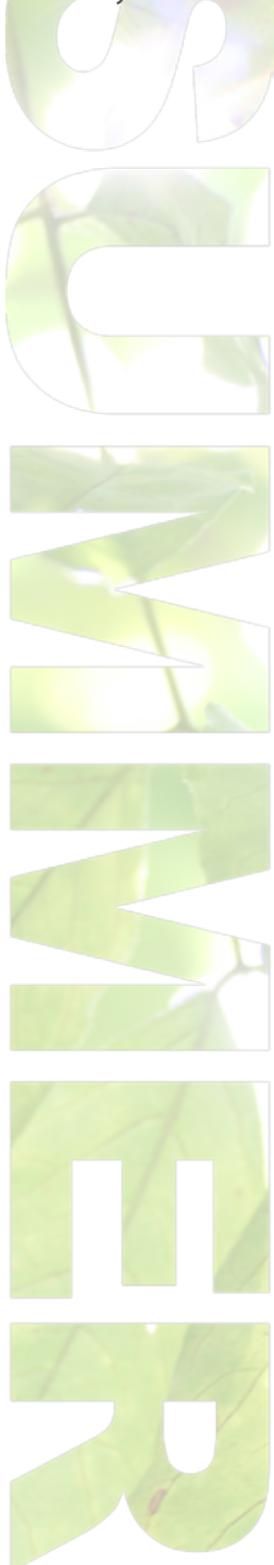
Operation Schedule

The following is the outline of the operation schedule in the latter half of this fiscal year, FY2008, from October to March 2009

- BigRIPS experiments:
October, November : the ZeroDegree commissioning and the experiments using U- and ^{48}Ca beams
March 2009 : the SHARAQ commissioning.
- Experiments with the AVF-stand alone operation:
October – January 2009
- Experiments using AVF (or RILAC) + RRC:
December and January 2009

We will have a three-month shutdown period from December to February 2009 for the construction of the new beam line for the SHARAQ spectrometer. No BigRIPS experiments, therefore, will be scheduled during this period. In addition, no experiment will be scheduled in February 2009 due to the replacement of the interlock system of RIBF.

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Announcement

PACs

The 4th PAC meeting will be held as follows.
NP (Nuclear Physics) PAC : Nov. 20, 21, 2008
ML (Material and Life Science) PAC : in October, 2008
Proposals submitted to these PACs will be called soon. The 5th PAC will be held in June, 2009.

Call for beam-time requests

The "call for beam time requests" has already been sent to all the spokespersons of the PAC approved experiments.

This is a call for beam-time requests for the PAC-approved experiments, which targets the

experiment ready to run in the period from October, 2008 to March, 2009. The deadline for submitting the request is August 1 (Fri.).

Call for Detector-Development Beam Time

We are also calling the beam-time requests dedicated to detector development using the AVF in the stand-alone operation. The announcement is available on the web page:

<http://www.nishina.riken.jp/UsersGuide/Det-Development/documents/CallForDetDevBT.pdf>

The deadline for submitting request is August 1 (Fri.).

User Group Activities

UEC election

The election of new UEC (Users Executive Committee) members will start in the middle of this August. According to the RIBF Users Group Charter, two experimentalists and one theorists will be elected. An announcement with a list of the candidates will be distributed soon.

For present UEC members and the charter, please refer to the following web page of the Users Group.

http://ribfwww.riken.jp/exp/RIBF_uec_eng/charter/charter.htm

The Int'l RIBF User Group Meeting

The 2nd International RIBF User Group Meeting, organized by the RIBF Users Executive Committee (UEC), will be held on Nov.22, 2008, a day just after the 4th NP-PAC meeting. In the meeting, current and future activities at RIBF will be discussed. Program of the meeting will be announced later on. We highly appreciate your attendance to this meeting for active discussion.

Workshops, Symposia

1	France-Japanese Symposium on "New Paradigms in Nuclear Physics"	Paris, France : Sep. 29 ~ Oct. 2, 2008 http://jfs.ganil.fr/
2	ICHOR-EFES Symposium on New Facet of Spin-Isospin Responses - Towards the Commissioning of SHARAQ	Spectrometer - (SIR2008) Wako, Japan : Oct. 29-31, 2008 http://nucl.phys.s.u-tokyo.ac.jp/sir2008/
3	Japan-Italy Symposium on Nuclear Physics	Tokai, Japan: Nov. 11-14, 2008

Recent News from Nishina Center

"Papers of Editors' Choice"

A paper on the discovery of new Pd isotopes, ^{125}Pd and ^{126}Pd , at BigRIPS has been published in Journal of the Physical Society of Japan, 77 (2008) 083201 (DOI 10.1143/JPSJ.77.083201). <http://jpsj.ipap.jp/link?JPSJ/77/083201/>

This paper is selected as "Papers of Editors' Choice".

Discovery of new isotope of Hs.

A series of experiments is being conducted from July 12 to 25 to study Hs isotopes. Several Pb

isotope targets were bombarded by $^{56,58}\text{Fe}$ primary beam, the evaporation residues were detected by GARIS. One of the exciting results is the discovery of a new isotope, ^{263}Hs in the reaction of ^{58}Fe (287.7 MeV) + ^{206}Pb .

An electron storage ring, AURORA, for the SCRIT project

The AURORA has been formally assigned from Sumitomo Heavy Industries on July 8. It will be disassembled and moved to RIBF, a process that will take three months from July to Sept.