



Greetings from the new director, Hideto En'yo, of Nishina Center



Dear all the friends of RI-Beam Factory of RIKEN Nishina Center,

On October 1st 2009, RIKEN President, Ryoji Noyori, appointed me as the Director of RIKEN Nishina Center for Accelerator-Based Science. The first Director, Yasushige Yano, has contributed in completing the most powerful heavy ion accelerator in history. The next mission, taken on by myself and by all the users of RIBF, is to

make a full use of RIBF to produce world-leading results.

With this new facility, there open huge science opportunities, not only in nuclear physics but also in its applications to many fields. Nishina Center would like to welcome everybody in the world to this new field of dream born in Wako-city, Japan.

We are remodeling our facilities to be more user-friendly, ensuring easy access to the world-wide user community. We appreciate and welcome all kinds of participations in RIBF, whether be it joining in an existing experiment, writing a proposal, or even constructing your own equipments of large scale.

Though it has been only three years since Nishina Center was established, we have almost 80 years of history since Yoshio Nishina founded his laboratory in RIKEN in 1931. Naming our Center after Nishina has a very significant meaning, and we aim to live up to this great scientist's name. We will appreciate your continued support and encouragement in the future.

Hideto En'yo
Director

RIKEN Nishina Center for Accelerator-Based Science



Person of Cultural Merit for the year 2009

It is our great pleasure to announce that Professor Toshimitsu Yamazaki (Research Consultant of Advanced Meson Science Laboratory, Professor Emeritus of the University of Tokyo) was named a Person of Cultural Merit for the year 2009.



Prof. Yamazaki has continuously played a leading role in Japan's nuclear physics research, and explored a new academic field in our nation's nuclear physics.



Prof. Yamazaki was also awarded various awards including the Nishina Memorial Award.

Nishina Center
<http://www.nishina.riken.jp/>

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

RIBF User Group
http://ribfwww.riken.go.jp/exp/RIBF_uec_eng/

Beam Time Schedule
<http://www.nishina.riken.jp/rarfmt/pc.html>

Seminar information
<http://rarfaxp.riken.jp/~seminar>

Toshimi Suda
User Support and Liaison Office
UserSupportOffice@ribf.riken.jp

Present status, operation schedules of RIBF

The new RILAC (RILAC 2)

Fabrication of the new RILAC (RILAC 2) is on-going, and its installation at the AVF hall will start in January. The commissioning will take place in the next autumn, which follows the installation of the new 28-GHz ECR ion source in summer.

BigRIPS

A pillow seal system having a remotely releasable mechanism to facilitate maintenance under high radiation condition, have been successfully installed. Additional shieldings have been mounted in a newly constructed target chamber and at the downstream of the beam dump. This effort aims particularly at reducing heat loads and radiation damages of the air-core superconducting quadrupole magnets placed just downstream of the target chamber. Now we are ready to conduct a series of experiments with intense primary beam, such as ^{48}Ca beam of a few 100 pA, starting from the end of October.

We have also started to construct a shielding wall between the ZeroDegree spectrometer and the area for SAMURAI spectrometer, which enables us to continue the construction of the spectrometer independently from beam time schedule of BigRIPS/ZeroDegree. The construction of the wall will be completed by January next year.

Other constructions

-GARIS II

Installation of a new gas-filled separator, GARIS-II (QDQQD), dedicated to chemical- and spectroscopic-studies of SHEs produced

by 'hot fusion' reaction is in the final stage. All magnets are placed at their position, and related construction is underway. The commissioning will start from March, 2010.

-SCRIT

An electron ring including a 150 MeV injector microtron is under installation at the RIBF B1F floor. The microtron and magnets of the ring are now placed in their position, and infrastructure is currently being installed simultaneously. The first storage of electron beam will be accomplished in next March.

Operation Schedule

The beam time schedule for the latter half of this year has been fixed and is available in the following web page:

<http://www.nishina.riken.jp/rarefmt/pc.html>

A series of BigRIPS experiments using ZeroDegree and SHARQA is now being conducted starting from the end of October for about two months. Currently, a SHARQA experiment is running using an intense primary beam of ^4He . The intensity reached *nearly 1pA, which is the highest* ever provided at RIBF.

As indicated in the beam time schedule, experiments using U beam with greatly improved intensity, ~ a few pA expected, and intense ^{48}Ca beam, ~ 200 pA, will follow from mid-November.

No experiments with AVF is planned during the period from mid-December to the end of next March, 2010 due to a long construction period at the AVF hall related to the RILAC 2 installation.

Announcement

Beam time requestes

The beam time requests for the first half of the fiscal year 2010, April to October, will be called for in December. All the spokesperson of the PAC approved experiments will soon be contacted.

PAC

The 5th Material and Life Science PAC (ML-PAC) was held on Sep. 3-4. In total, 20 proposals for experiments at RAL and RIBF were reviewed. The next ML PAC will be held next spring.

The 6th Nuclear Physics PAC (NP-PAC) meeting will be held on Dec. 3-4. In total, 13 proposals submitted will be reviewed by the NP PAC members. The meeting program will soon be available at:

<http://www.nishina.riken.jp/UsersGuide/NP-PAC>.

User Group Activities

Greetings from the new UEC chair

Dear RIBF Users,

The new term of RIBF User executive committee has started on October 1, 2009. T. Teranishi, T. Kawabata, H. Sakuragi (elected members), D. Beaumel, and T. Sumikama (supplementary members) joined us as new members. We assure you that we will do our best to establish a sound partnership between RIBF users and the RIKEN Nishina center.

We will always be open to the feedback from RIBF users. Please send your comments, suggestions, and claims to ribf-uec@ribf.riken.jp.

Tomohiro Uesaka
 chairman of the RIBF-UEC

UEC election

Election of the RIBF Users Executive Committee (UEC) members was held from Aug. 25 to Sep. 18, 2009. There were over 100 votes cast for this election.

Three of nine members were newly elected: T. Teranishi (Kyuushuu Univ.), T. Kawabata (Kyoto Univ.) and H. Sakuragi (Osaka City Univ.). Their term of office is three years. The chair and vice chair of the RIBF UEC are T. Uesaka (CNS, Univ. of Tokyo) and T. Teranishi. For further details, please refer, http://ribfwww.riken.jp/exp/RIBF_uec_eng/UECmember/Election2009/Results090924.html

RIBF-FRIB user meetings at Hawaii

The RIBF user town meeting was held on Oct. 15 during the 3rd Joint Meeting of the Nuclear Physics Division of the Physical Society of Japan (JPS) and American Physical Society (APS) held at Hawaii's Big Island. Starting from the opening remarks by the new RNC director, H. En'yo, current status and future perspectives of RI Beam Factory were discussed. Immediately after the RIBF meeting, a user meeting of FRIB, *Facility for Rare Isotope Beams*, followed. There were more than 60 participants in the series of RIBF and FRIB meetings.

Research Topics

Editor's Suggestions

The article by Gentaro Watanabe (Nuclear Theory Group) *et al.* which appeared in Phys. Rev. Lett. was selected as one of 'Editor's Suggestions'.

Title : Formation of Nuclear "Pasta" in Supernovae
 Phys. Rev. Lett. 103 (2009)121101.

Mirror Symmetry in the magicity loss (D. Suzuki *et al.*)

Phys. Rev. Lett. 103(2009)152503

The breakdown of the magic number $Z=8$ in the proton rich nucleus, ^{12}O , was discovered.

This is the first demonstration of the persistence of mirror symmetry in the disappearance of the magic number. The mirror partner of ^{12}O is ^{12}Be , in which the magic number $N=8$ is known to be lost. This experiment was performed at GANIL using MUST2 telescope.

Young Scientist Award

Yusuke Kazama (Radiation Biology Team) was awarded the Young Scientist Award for Plant Science for the following article:

"Sex chromosomes and sex expression in the dioecious plant *Silene latifolia*"

Other Topics

The 2nd "Nishina School"

One intern from Canada, and seven outstanding undergraduate seniors of Peking University led by Prof. F. Xu, visited Nishina Center to join the second "Nishina School" held from Sep. 29 to Oct. 8. They enjoyed classes including lectures and laboratory training as part of the school. The photo was taken at the opening ceremony of the school held on Sep. 29.



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