



Call for Proposals of Nuclear-Physics Experiments

at RI Beam Factory

March 15, 2012

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This is a call for proposals for nuclear-physics experiments at the RI Beam Factory (RIBF) operated by the RIKEN Nishina Center for Accelerator-Based Science (RNC) and the Center for Nuclear Study (CNS), University of Tokyo.

The Program Advisory Committee (PAC) will review all nuclear physics proposals for RIBF facilities including SHARAQ operated by CNS, based on their scientific merits and feasibility. The PAC reports its recommendations to the directors of RNC and CNS.

The PAC is composed of international members and the PAC meeting is held twice a year, usually in June and December.

Since the date of the 11th PAC meeting has been set for June 18–19, 2012, we are now calling for proposals to be discussed at the 11th PAC meeting. The spokesperson of a proposal is requested to give an oral presentation at the PAC meeting which is open to the public. For each submitted proposal, specific PAC members will be assigned to review the proposal in detail prior to the PAC meeting. The PAC members, thus, may contact the spokesperson prior to the meeting if necessary.

In principle, approved experiments should be completed within two years. If an experiment does not finish within 2 years, a request for an extension or a new experimental proposal must be submitted.

We call for the following types of proposals:

1. nuclear physics experiments at the RIBF accelerator facility
2. update of previously approved proposals
3. development of experimental equipment that requires beam-time use

4. construction of large size instrumentations, such as a spectrometer, whose feasibility study has been completed (Note: the two-year rule does not apply to the proposals of this type).

As for item 1, the EURICA project (Euroball RIKEN Cluster Array) will be launched fully in fiscal year 2012. Proposals requesting to use EURICA are welcome in this PAC. As for item 2, those who wish to make significant updates to their proposals can submit the updated version of the previously approved proposals for the PAC to review, if one of the following three cases apply:

- i) The approved experiment can be run by using a primary beam projected to run in 2012, but different from the originally approved primary beam.
- ii) The approved experiment has been significantly improved in sensitivity / efficiency by making use of SAMURAI or EURICA.
- iii) The granted priority of the approved proposals is not high, and the spokesperson aims at having its priority increased. In particular, to be ranked as S or A, proposals previously approved as B or A/B are encouraged to be revised for resubmission.

In the updated proposal, one should state clearly what has been changed since its approval as well as describe any changes that might affect the physics aspect originally presented. Our tentative two-year plan of primary beams for BigRIPS-based experiments is as follows:

Autumn –Winter 2012: ^{238}U , ^{124}Xe , and light ions (AVF-injection)
Spring 2013: ^{238}U , ^{78}Kr , (^{48}Ca)
Autumn –Winter 2013: (open)

Please note that this is only a tentative schedule. The order of primary beams is subject to change depending on the situation of the utility power which is still somewhat affected by the earthquake in 2011, the situation of the beam development, and the status of the accelerator operation.

The submitted proposal must contain (i) a cover sheet, and (ii) a detailed description of the proposed experiment or construction. Those who propose to use BigRIPS are also requested to submit (iii) a LISE++ input file describing the secondary-beam setting in your proposal. For (i) and (iii), please use the latest versions available at:

<http://www.nishina.riken.jp/RIBF/NP-PAC/index.html>.

Detailed information on the proposed experiment should be described in a free format, and attached to the cover sheet for submission. It should include the following description:

1. Goals and methods of the proposed experiment or proposed development
2. Setup and conditions
3. Estimation of beam time requested
4. Readiness

Information on the facility, including the list of available primary beams and the list of the latest secondary-beam cross sections, are available at:

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

The following is a list of contact persons of the experimental equipment and detectors. Those who plan to use the following equipment and/or detectors are requested to get in touch with the contact persons prior to the proposal submission.

Equipment

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|-----------------|-------------------|--------------------------------|
| 1. GARIS : | Kosuke Morita | (morita@ribf.riken.jp) |
| 2. RIPS : | Hideki Ueno | (ueno@riken.jp) |
| 3. BigRIPS : | Toshiyuki Kubo | (kubo@ribf.riken.jp) |
| 4. ZeroDegree : | Hideaki Otsu | (otsu@ribf.riken.jp) |
| 5. SHARAQ : | Susumu Shimoura | (shimoura@cns.s.u-tokyo.ac.jp) |
| 6. SAMURAI: | Ken-ichiro Yoneda | (kyoneda@riken.jp) |

Detectors

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|-------------|-------------------|--------------------------------|
| 7. DALI2 : | Pieter Doornenbal | (pieter@ribf.riken.jp) |
| 8. GRAPE : | Eiji Ideguchi | (ideguchi@cns.s.u-tokyo.ac.jp) |
| 9. EURICA : | Shunji Nishimura | (nishimu@riken.jp) |

The personal information given in the submitted proposal will be used for the PAC evaluation purpose only. Please note that the proposal titles and names of spokespersons including their affiliation of the submitted proposals will appear in the program of the PAC meeting on the Nishina Center web site and other documents before the PAC meeting.

Proposal should be sent to:

Dr. Hideki Ueno

User Support Office
RIKEN Nishina Center for Accelerator-Based Science
2-1, Hirosawa, Wako, Saitama, 351-0198, JAPAN
Email :UserSupportOffice@ribf.riken.jp .

Key dates:

Issuance of this Call for Proposals:	March 15, 2012
Deadline of proposal submission:	May 2, 2012
11 th PAC meeting:	June 18–19, 2012