User Operation



Statistics

SPring-8 invites research proposals twice a year and submitted proposals are reviewed at the SPring-8 Proposal Review Committee (PRC). For 2002B, the PRC approved 472 proposals from 751 proposals and 563 from 733 for 2003A. The total of little more than 4,000 hours of beamtime was allocated to successful applicants from 2002B through 2003A.

SPring-8 user operation results for the period from 1997B to 2003A are shown in Table III. This table shows user beamtime available to users and the numbers of users and experiments conducted at both public and contract beamlines, which are

also illustrated in Fig. 3. The results in the table and the figure include the numbers of experiments using reserved beamtime and priority research proposals.

In 2002B and 2003A, SPring-8 provided users with 1,893 and 2,244 hours of beamtime in four and five operation cycles, respectively. As for 2002B, 3,508 individuals used the public beamlines in 538 separate experiments, while 1,046 individuals used the contract beamlines in 143 experiments. In 2003A, 3,777 individuals used the public beamlines in 632 separate experiments, while 1,347 individuals used the contract beamlines in 172 experiments. From October 1997, when SPring-8 was opened to the public, through 2003A, a total of 34,172 public and contract beamline

Research Term	User Time (hours)	Public BL		Contract BL	
		Experiments	Users	Experiments	Users
1997B: 1997.10 - 1998.03	1,286	94	681		
1998A: 1998.04 - 1998.10	1,702	234	1,252	7	
1999A: 1998.11 - 1999.06	2,585	274	1,542	33	467
1999B: 1999.09 - 1999.12	1,371	242	1,631	65	427
2000A: 2000.02 - 2000.06	2,106	365	2,486	100	794
2000B: 2000.10 - 2001.01	1,558	382	2,370	88	620
2001A: 2001.02 - 2001.06	2,381	473	2,915	102	766
2001B: 2001.09 - 2002.02	1,893	486	3,277	114	977
2002A: 2002.02 - 2002.07	2,093	543	3,246	110	1,043
2002B: 2002.09 - 2003.02	1,893	538	3,508	143	1,046
2003A: 2003.02 - 2003.07	2,244	632	3,777	172	1,347
TOTAL	21,088	4,263	26,685	934	7,487

Table III. SPring-8 user operation results.

users conducted 5,197 experiments.

Figures 4 and 5 indicate the numbers of selected proposals by affiliation of applicants and by research fields from 1997B to 2003A. As can be seen from the charts, as for the classification by affiliation, universities have accounted for approximately 70% and other organizations have made up the rest almost equally. The percentage of approved proposals from overseas was 4% for 2002B and 6% for 2003A. The ratio of Life Science, Diffraction & Scattering and the others has been 1:1:1 since the inauguration of SPring-8. The ratio of XAFS, Spectroscopy and Method & Instrumentation, all of which are categorized as "the others," has also been 1:1:1.



Fig. 3. Number of users and experiments conducted.

145





Fig. 4. Number of selected proposals by affiliation of applicants (public beamlines).



Priority Research Proposal

Until FY2002, there were only general and longterm proposals and the proposals using beamtime reserved for JASRI. In FY2003, the new scheme for the management of public beamlines was established, based on the report on SPring-8 by the governmental review committee. The report called on SPring-8 to further promote the use of public beamlines to produce more research results. The important point of the report was to launch the Priority Research Program. The new scheme is shown in Table IV. As can be seen from the table, beamtime not exceeding 50% is allocated to the Priority Research Proposals and proposals using beamtime reserved for JASRI, so that more than 50% of the total user beamtime is guaranteed for general and long-term proposals.

The scheme for Priority Research Program is intended to make the best use of SPring-8 and produce more research results. The Priority Research Proposals are tentatively categorized into the following three groups:

- Priority Field Proposal,
- Power User Proposal and
- Strategy Proposal.



Details of each proposal are provided below.

Priority Field Proposal

JASRI designates research fields which are expected to produce excellent research results or fields of strategic significance. The Priority Field Proposals are further categorized into three subgroups: Nanotechnology Support, Protein 500 and Industrial Use. These proposals are reviewed before General Proposals at the review committees designated for each priority field. The outline of each priority research field is as follows:

Nanotechnology Support

This research field is to support the development in nanotechnology, using 11 beamlines at SPring-8. Nanotechnology Support at SPring-8 had already started in 2002 under the Nanotechnology Researchers Network Project (Nanonet Project) of MEXT (Ministry of Education, Culture, Sports, Science and Technology) and was consolidated into the Priority Research Program in FY2003. In 2002B and 2003A, a total of 120 proposals were selected from 183 submitted proposals. This Project is valid until FY2006.

Protein 500

Just as Nanotechnology Support, Protein 500 at SPring-8 started shortly after MEXT launched the Protein 3000 Project in 2002 as a post-human genom program to analyze 3,000 kinds of protein structures and was taken over as the Priority Field Program in FY2003. Under the Project, three of SPring-8 structural biology beamlines are assigned to analyze 500 kinds of protein structures, and 30% of their beamtime is allocated every year. In 2002B and 2003A, a total of 141 proposals were selected. This Project is valid until FY2006.

Industrial Use

As part of industrial use, the Trial Use Program originally ran from 2001B to 2002A, for the purpose of attracting new users to SPring-8, mainly from industries and restarted as one of the Priority Field Proposals in 2003A. In 2003A, 14 Trial Use proposals were selected from 17 proposals; Since 2001B, 36 proposals were selected from 39 proposals.



Power User Proposal

This category refers to proposals of user groups who have full knowledge of beamline instrumentation and are highly likely to produce outstanding research results in the future also. Such user groups are designated as Power Users (PUs) by JASRI and expected to provide support for general users. In return for their support, up to 20% of beamtime of relevant beamlines can be used by the PUs. First such PUs are to be designated for 2003B.

Strategy Proposal

Strategy Proposals are expected to contribute to promoting research at SPring-8 including the development of new technologies necessary for the facility operation. JASRI will conduct such research by itself or jointly with other organizations.

Long-term Proposal

Separately from General Proposals, SPring-8 has created a system for the long-term use of beamlines, where beam access is guaranteed for up to three years. This system aims to further promote research that is expected to produce outstanding results in the field of science and technology, to pave the way for



new research areas and research methodology and to help improve the technology for industrial base significantly by making the best use of SPring-8 characteristics. In 2003A, one proposal was selected from four proposals; The total of eight proposals have been selected from 27 proposals since 2000B.

Industrial Research

As well as the promotion of research activities in the field of basic science, the contribution to the reinforcement of the technological base in industry has been one of the main pillars of the SPring-8 Proiect. The coordinator system, introduced in FY2000 to support industrial use mainly through consultation, is a case in point. Equally important is the Trial Use Program. This program aims to revitalize local industries and to create and promote new industries Public beamline BL19B2, Engineering Science Research Beamline, built to promote SR use by industries, is the main beamline used for the Trial Use Program. There are three contract beamlines, which were constructed by Industrial Consortium and Pharmaceutical Consortium, for the use by the consortium members. In addition to the above. workshops and training courses are to be noted. These courses are intended for a variety of research fields and SR instrumentation and were attended by a total of 1,150 industrial users from FY2000 through FY2002.

Proprietary Research

Users conducting proprietary research are charged Proprietary research is essential beamtime fees. when users have commercially confidential information in their experiment or sample and do not want to disclose their research results. In 2002B, 14 proprietary experiments were performed at public beamlines and 24 at contract beamlines; In 2003A, 14 experiments were conducted at public beamlines and 23 experiments at contract beamlines. During the period from 1999B, when the system was introduced, to 2003A, a total of 142 experiments have been carried out at both public and contract beamlines. The Pharmaceutical Consortium has spent about 75% of their beamtime on proprietary research at their contract beamline, BL32B2.

Research Results

SPring-8 users are not charged for non-proprietary research as long as they submit an experiment report within sixty days after their experiments. When their results are disclosed in scientific journals or any other form of publication, the project leaders are required to report to JASRI and have the results registered with JASRI. As of September 30, 2003, the number of refereed publications is 1,296 (928 for public use, 120 for contract beamlines and 232 for JAERI and RIKEN beamlines; The results at two or more beamlines are counted at each beamline.)

SPring-8 consisting of accelerators, beamlines and facilities for users, was constructed by the JAERI/RIKEN Project Team during the period from 1991 through 1997 at the total cost of about 110 billion yen. In 1994, JASRI was designated by the Law regarding Promotion of Common Use of the Synchrotron Radiation Facility (SPring-8) as the Organization for the Promotion of Synchrotron Radiation Research to be responsible for managing SPring-8. As a result, the SPring-8 research complex has been formed by JAERI Kansai Research Establishment, RIKEN Harima Institute and JASRI. JASRI has been entrusted by JAERI and RIKEN with the



