

User Operation

Statistics

SPring-8 invites research proposals twice a year, and submitted proposals are reviewed by the SPring-8 Proposal Review Committee (PRC). In General Proposal, the PRC approved 406 out of 648 proposals for 2003B and 387 out of 529 for 2004A. In Priority Field Proposal, 215 proposals were adopted from among 290 proposals for 2003B and 208 from among 243 for 2004A. A total of approximately 4,000 hours of beamtime was allocated to successful applicants from 2003B through 2004A.

SPring-8 user operation results for the period from 1997B to 2004A are shown in Table III. This table shows the 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 of priority research proposals.

In 2003B and 2004A, SPring-8 provided users with 1,844 and 2,095 hours of beamtime in four and five operation cycles, respectively. In 2003B, 3,428 individuals used the public beamlines in 548 separate experiments, while 1,264 individuals used the contract beamlines in 154 experiments. In 2004A, 3,756 individuals used the public beamlines in 568 separate experiments, while 1,269 individuals used the contract beamlines in 163 experiments. From October 1997, when SPring-8 was opened to the public, through to

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
2003B: 2003.09 - 2004.02	1,844	548	3,428	154	1,264
2004A: 2004.02 - 2004.07	2,095	568	3,756	163	1,269
TOTAL	25,027	5,379	33,869	1,243	10,020

Table III. SPring-8 user operation results.

2004A, a total of 43,889 public and contract beamline users conducted 6,622 experiments.

Figures 4 and 5 indicate the numbers of selected proposals according to the affiliations of applicants and the research fields from 1997B to 2004A. As can be seen from the charts, proposals submitted by researchers affiliated with universities accounted for approximately 70% and those from other organizations made up the rest almost equally. The percentage of approved proposals from overseas was 4.7% for 2003B and 4.9% for 2004A. The ratio of proposals on Life Science, Diffraction & Scattering and others has been 1:1:1 since the inauguration of SPring-8. The ratio of proposals on XAFS, Spectroscopy, and Method & Instrumentation, all falling under "others," has also been 1:1:1.

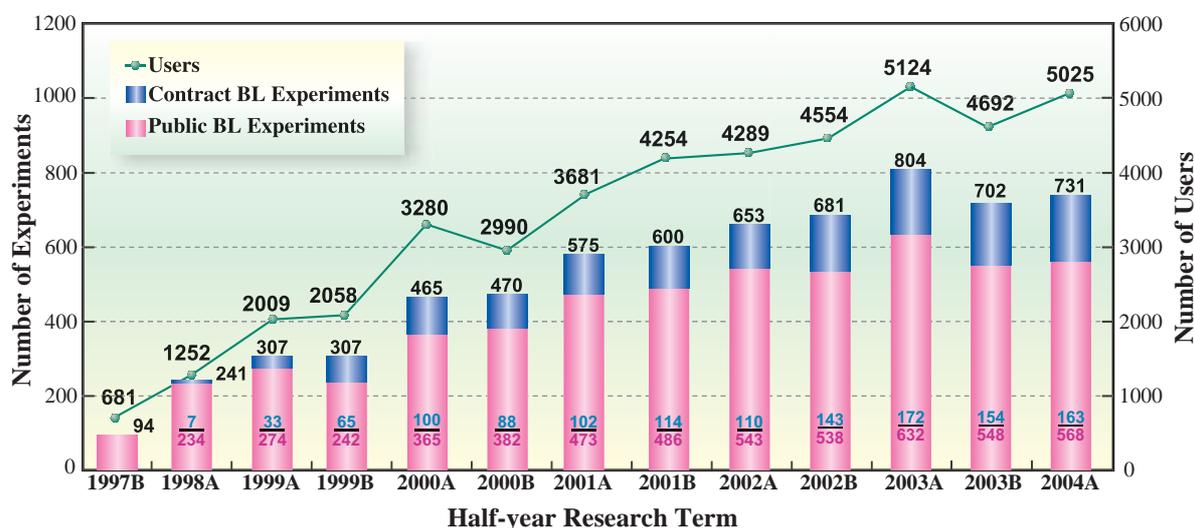


Fig. 3. Number of users and experiments conducted.

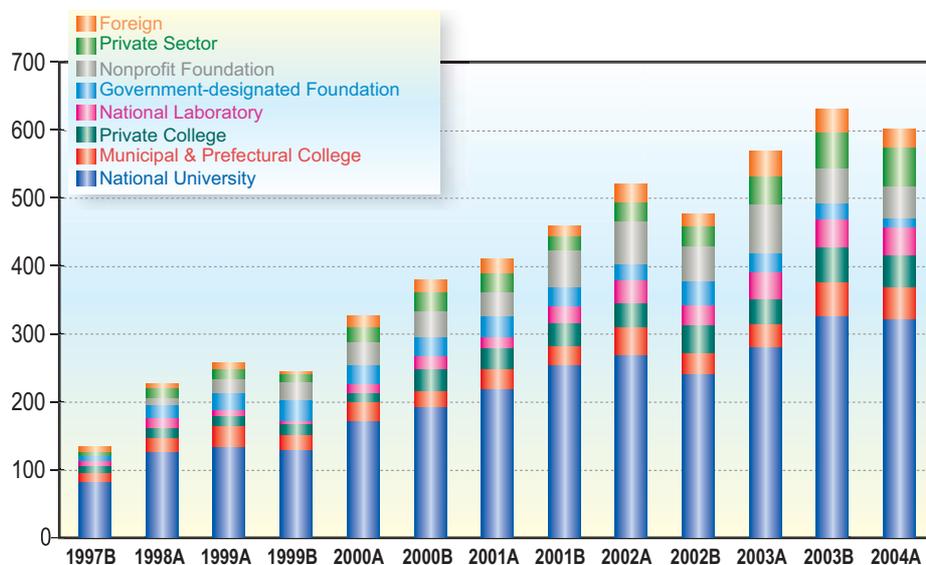


Fig. 4. Number of selected proposals by affiliation of applicants (public beamlines).

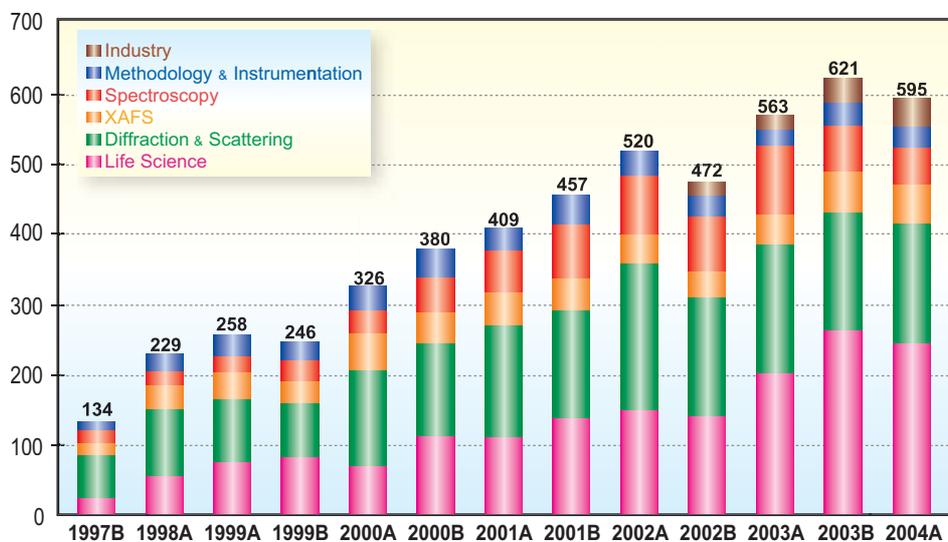


Fig. 5. Number of selected proposals by research fields (public beamlines).

Priority Research Proposal

Until FY2002, there were only **General** and **Long-term Proposals** and proposals using beamtime reserved for JASRI. In FY2003, a 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 scheme is shown in Table IV. As can be seen from the table, beamtime not exceeding 50% is allocated to 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 to 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 as priority fields. The Priority Field Proposal is further categorized into three subgroups: Nanotechnology Support, Protein 500 and Industrial Use. This proposal is reviewed before General Proposal by the review committee designated for each priority field. The outline of each priority research field is as follows:

Nanotechnology Support

This research field concerns the support of developments in nanotechnology, using 12 beamlines at SPring-8. Nanotechnology Support at SPring-8 was started in 2002 under the Nanotechnology Researchers Network Project (Nanonet Project) of MEXT (Ministry of Education, Culture, Sports, Science and Technology) and was merged into the Priority Research Program in FY2003. In 2003B and 2004A, a total of 104 proposals were selected from 186 submitted proposals. The Nanonet Project is valid until FY2006.

Protein 500

Similar to 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 became part of 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 2003B and 2004A, a total of 276 proposals were selected. The Protein 500 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. It was restarted as one of the Priority Field Proposals in 2003A. In 2003B, 23 Trial Use proposals were selected from among 38 proposals. In 2004A, 20 Trial Use proposals were selected from among 33 proposals.

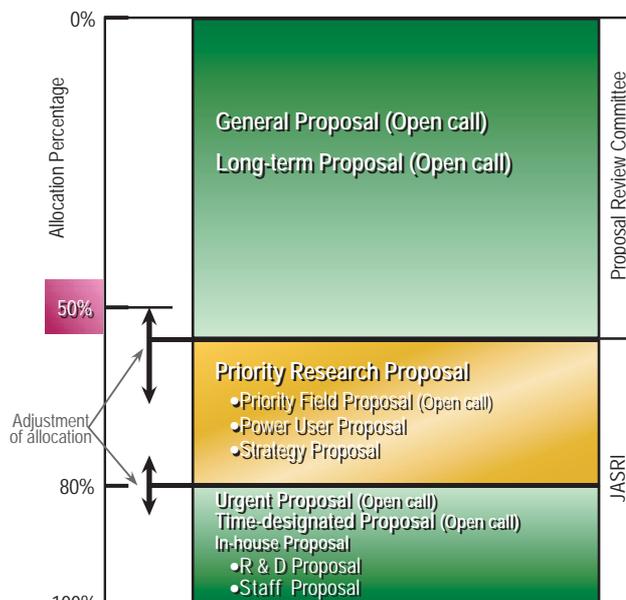


Table IV. Beamtime allocation scheme for public beamlines.

Power User Proposal

This category refers to proposals by user groups who have full knowledge of beamline instrumentation and are also highly likely to produce outstanding research results in the future. Such user groups are designated as Power Users (PUs) by JASRI and are expected to provide support to general users. In return for their support, up to 20% of beamtime of relevant beamlines can be used by PUs. Five groups were designated as PUs in May, 2003. Nine research subjects have been investigated, including the running subjects from 2003B and 2004A.

Strategy Proposal

Strategy Proposals are expected to contribute to the promotion of research at SPring-8, including the development of new technologies necessary for the operation of the facility. JASRI will conduct such research by alone or jointly with other organizations. The following two strategic research subjects were designated in May 2004.

- Basic Development of Nano-Particle Composite Materials
- Development of a New Powder Diffraction Technique for Medicinal Compounds

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 science and technology, to pave the way for new research areas and research methodology and to help significantly improve the technology for industry by making the best use of SPring-8 characteristics. In 2003B, two of three proposals were selected; in 2004A, one of three proposals was selected. Seven proposals were being carried out at the end of 2004A.

Industrial Research

As well as the promotion of research activities in basic science, the contribution to the reinforcement of the technological base in industry has been one of the main pillars of the SPring-8 Project. The coordination 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 is aimed at revitalizing local industries and creating and promoting new industries. Public beamline BL19B2, the Engineering Science Research Beamline, built to promote SR use by industries, is the main beamline used in the Trial Use Program. There are three contract beamlines, which were constructed by Industrial Consortium and Pharmaceutical Consortium, for use by the consortium members. In addition to the above, workshops and training courses are also provided. 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 beamtime fees. Proprietary research is essential when users have commercially confidential information in their experiment or sample and do not wish to disclose their research results. In 2003B, 15 proprietary experiments were performed at public beamlines and 27 at contract beamlines (26 at BL32B2 and 1 at BL16XU); in 2004A, 10 experiments were conducted at public beamlines and 26 experiments at contract beamlines (24 at BL32B2 and 2 at BL24XU). During the period from 1999B, when the system was introduced, to 2004A, a total of 220 proprietary experiments were carried out at both public and contract beamlines. The Pharmaceutical Consortium spent about 79% of their beamtime on proprietary research at their contract beamline BL32B2, in 2004A.

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 inform and register it to JASRI. As of September 30, 2004, the number of refereed publications (journals, proceedings and dissertations) is 1,706 (1,313 for public use, 158 for contract beamlines and 287 for JAERI and RIKEN beamlines; the results obtained using two or more beamlines are counted for each beamline.)

Budget and Manpower

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 a total cost of about 110 billion yen. In 1994, JASRI was designated, under the Law Regarding Promotion of Common Use of the Synchrotron Radiation Facility (SPring-8), as the Organization for the Promotion of Synchrotron Radiation Research

responsible for managing SPring-8. As a result, the SPring-8 research complex comprises JAERI Kansai Research Establishment, RIKEN Harima Institute and JASRI. JASRI has been entrusted by JAERI and RIKEN with the operation, maintenance, improvement, upgrading, R&D and safety management of SPring-8, as well as the technical support for new beamline construction after the construction of the main