

# Proposal Scheme and Utilization Statistics

## General Proposals

JASRI invites General Proposals twice a year. Those proposals submitted are reviewed by the SPring-8 Proposal Review Committee (PRC). In the scheme of General Proposal, the PRC approved 390 proposals from 655 proposals for 2004B and 380 from 644 for 2005A. In the scheme of Priority Field Proposal, 172 proposals were adopted from 231 proposals for 2004B and 167 from 234 for 2005A. In total, 3851 hours of beamtime was allocated for users from 2004B through 2005A.

SPring-8 user operation statistics for the period from 1997B to 2005A is shown in Table III. This table summarizes the beamtime available to users and the numbers of users as well as the number of experiments conducted at both public and contract beamlines, which are also illustrated in Fig. 3. The numbers of experiments conducted in the reserved beamtime at RIKEN beamlines and Priority Research Proposals are included in the table and the figure.

In 2004B and 2005A, SPring-8 provided users with 1,971 and 1,880 hours of beamtime in four and five operation cycles, respectively. As for 2004B, 3,546 individuals utilized the public beamlines in 554 independent experiments, while 1,154 individuals the contract beamlines in 146 experiments. In 2005A, 3,741 individuals utilized the public beamlines in 560 independent experiments, while 1,185 individuals the contract beamlines in 146 experiments. From October

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	545	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
2004B: 2004.09 - 2004.12	1,971	554	3,546	146	1,154
2005A: 2005.04 - 2005.08	1,880	560	3,741	146	1,185
<b>TOTAL</b>	<b>28,878</b>	<b>6,495</b>	<b>41,156</b>	<b>1,535</b>	<b>12,359</b>

Table III. SPring-8 user operation results.

1997, when SPring-8 was opened to the public, through 2005A, a total of 53,515 users conducted 8,028 experiments at public and contract beamline.

Figures 4 and 5 indicate the numbers of approved proposals with the affiliation of applicants and the research fields from 1997B to 2005A. As can be seen from the charts, as for the classification by affiliation, universities have accounted for approximately 66%, and other organizations have made up the rest almost equally. The percentage of approved proposals from overseas was 5.2% for 2004B and 6.5% for 2005A. The ratio of Life Science, Diffraction & Scattering and the others has been approximately 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 approximately been 1:1:1.

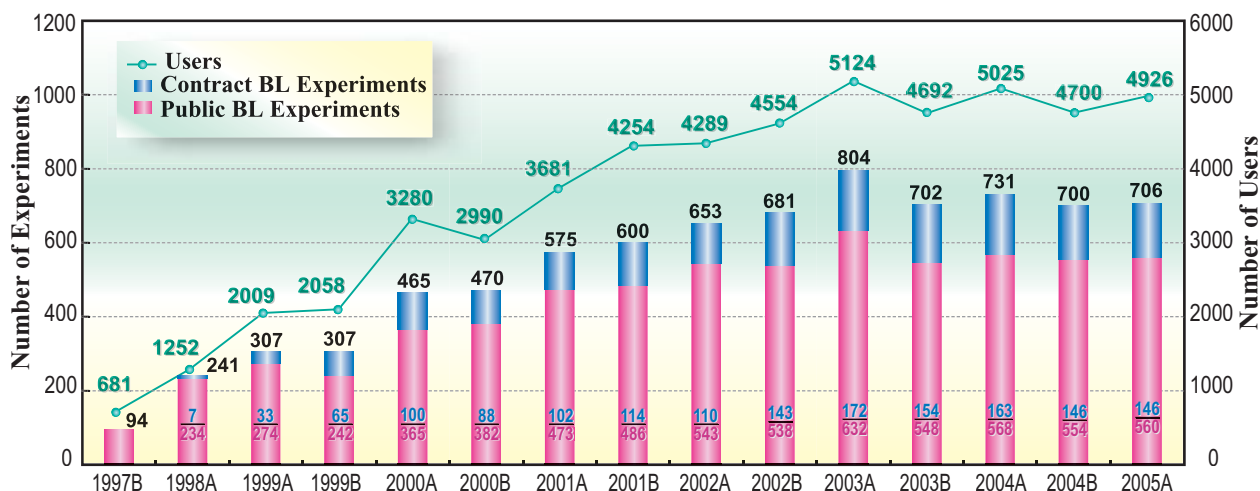


Fig. 3. Number of users and experiments conducted.

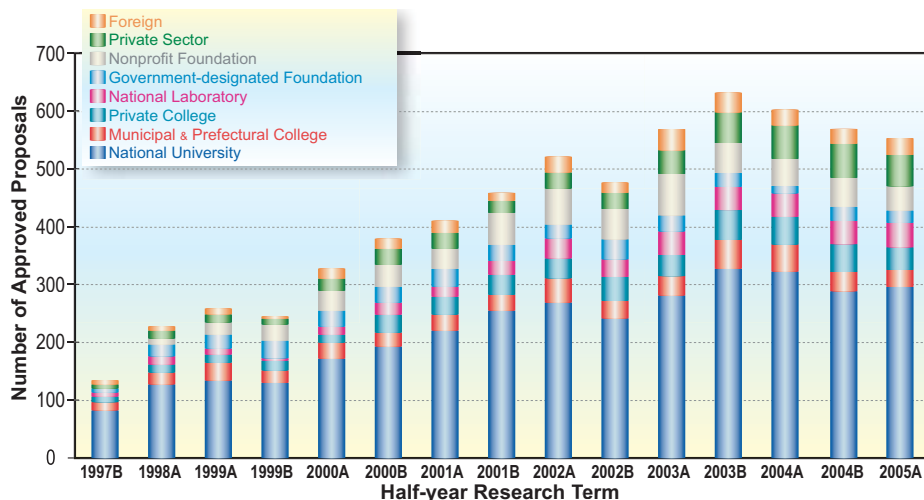


Fig. 4. Number of selected proposals by affiliation of applicants (public beamlines).

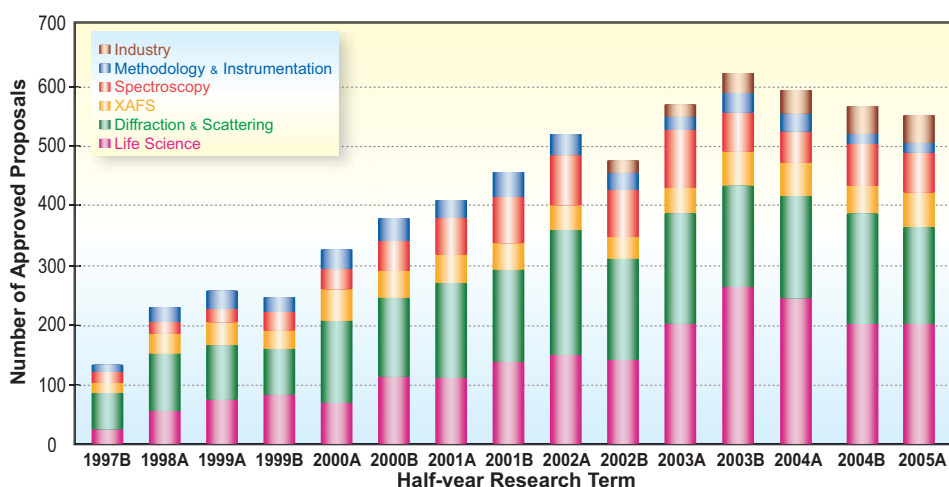


Fig. 5. Number of selected proposals by research fields (public beamlines).

## Long-term Proposal

Being independent from General Proposals, JASRI has created a novel proposal scheme 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 SPing-8 characteristics. In 2005A, one proposal was selected from four applied. Six proposals are carried out by the end of 2005A.

## Urgent Proposal

Since 1999A, the scheme of Urgent Proposal has been established in order to adequately respond to requests of conducting experiments as urgent as

possible. Upon receiving an Urgent Proposal of non-proprietary use, the Proposal Review Committee promptly reviews it electronically on its necessity and urgency as well as on the basis of those criteria for General Proposals of non-proprietary use.

## Proprietary Research Proposal

Users conducting proprietary research are charged beamtime fees of 472,000 yen/shift. Proprietary research is essential when users have commercially confidential information in their experiment or sample and do not want to disclose their research results. In 2004B, 23 proprietary experiments were performed at public beamlines and 26 at contract beamlines (22 at BL32B2, three at BL24XU and one at BL16XU); in 2005A, 29 experiments were conducted at public beamlines and 25 experiments at contract beamlines

(22 at BL32B2 and two at BL24XU), and one at BL16XU. During the period from 1999B, when the system was introduced, to 2005A, a total of 317 proprietary experiments have been carried out at both public and contract beamlines. The Pharmaceutical Consortium has spent about 94% of their beamtime on proprietary research at their contract beamline BL32B2, in 2005A.

## Proprietary Time-designated Proposal

Since 1999B, JASRI has established a utilization scheme for those who wish to take the sole possession of their results, and to perform experiments during a specific time period with a beamtime fee of 708,000 yen/shift, which is increased by 50% to that for Public Beamlines as premium. In this utilization scheme, users can specify the preferred time period in their Proprietary Time-designated Proposal, which will be promptly reviewed once submitted.

## Priority Research Proposal

Until FY2002, there were only (i) General Proposals and (ii) Long-term Proposals and (iii) 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 Fig. 6. As can be seen from the figure, 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 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.

## Priority Field Proposal

In this particular proposal scheme, JASRI strategically designates research fields in order to promote excellent research outcome from those areas in scientific and/or industrial domains with high 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 12 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 2004B and 2005A, a total of 107 proposals were selected from 210 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 genome 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 2004B and 2005A, a total of 204 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 was restarted as one of the Priority

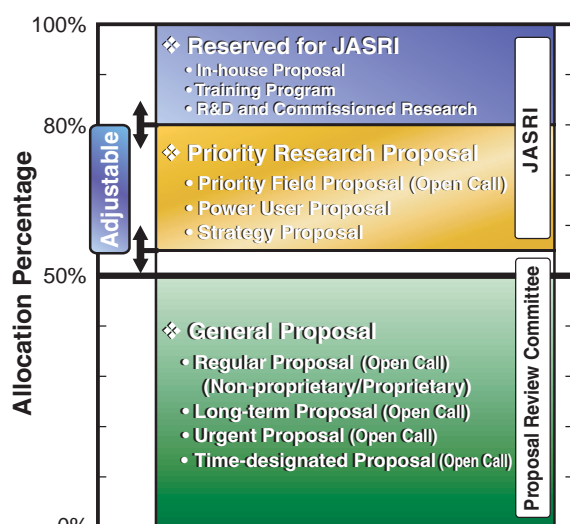


Fig. 6. Beamtime allocation scheme for public beamlines.

Field Proposals in 2003A. In 2004B, 15 Trial Use proposals were selected from 30 proposals. In 2005A, 13 Trial Use proposals were selected from 21 proposals.

### Medical Biology

Since November, 2005, JASRI has further designated Medical Biology as a priority fields to expand the users in this field by organizing a trial use from 2006A.

### 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 as well. 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. Five groups were designated as PUs in May, 2003. There have been 10 research subjects executed including the five running subjects from 2004B and 2005A.

### 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. There were three strategies research subjects designated in January, 2005 as follow:

- Analysis of Nanocomposite Materials
- Development of a New Application Technology for Powder Diffraction Experiments
- X-ray Pinpoint Structure Measurement

### Beamtime Reserved for JASRI

There is 20% of the total beamtime reserved for JASRI to conduct its own research programs, to flexibly accept the Urgent Proposals mentioned above, to modify and adjust the instruments according to user's request, and to maintain the beamlines.

### 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 Project. In 2005, JASRI established Industrial Application Division, by promoting Industrial Application & Utilization Support Group. In this particular year, the division has intensively carried out the Advanced Large-Scale Research Facilities Strategic Utilization

Program of MEXT, and has succeeded in doubling the number of new users conducting their experiments at SPring-8. The total number of proposals adopted for industrial applications has reached higher than 20% of the entire use.

The coordinator system, introduced in FY2000 to support industrial use mainly through consultation, continues to play a crucial role for exploring and acquiring new users from industrial domains. Trial Use Program is also making significant contribution for revitalizing local industries and for creating and promoting new industries. Public beamline BL19B2, Engineering Science Research Beamline, which was built to promote SR use by industries, has been the primary 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. There have been workshops and training courses organized to introduce a variety of research fields and SR instrumentation, which were attended by a total of 292 people for FY2005.

### Research Outcome

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, 2005, the number of refereed publications (journals, proceedings and dissertations) is 3,688, among which 2,409 were attributed to public use, 543 to contract beamlines and 442 to RIKEN beamlines; where those publications related to two or more beamlines are counted at each beamline. Figure 7 displays the number of refereed publications annually counted.

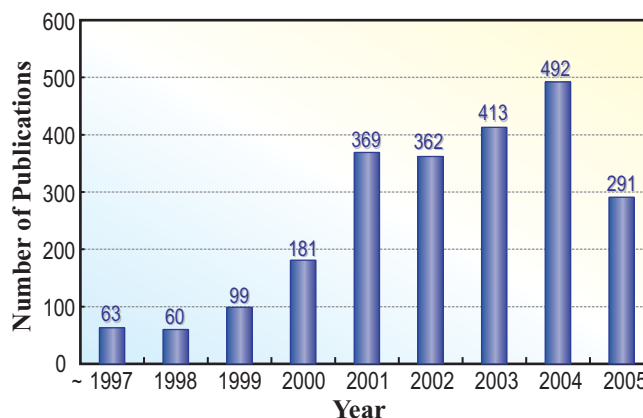


Fig. 7. Annual record of refereed publications as of Sep. 30, 2005.