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# Experimental Programs

The PF is a facility accepting experimental proposals from researchers based at universities and research institutes irrespective of nationality. Experimental proposals are reviewed by the PF Program Advisory Committee (PF-PAC) and approved by the Advisory Councils for Scientific Policy and Management. The number of accepted proposals for the period 1991-2002 is shown in Table 1, where S1/S2, U, G and P denote special, urgent, general and preliminary proposals, respectively. The effective number of G-type proposals is more than 630 over the past three years since proposals are active for two years. S-type proposals are divided into two categories, S1 and S2. The former is a proposal of excellent quality, such as the construction of beamlines or experimental apparatus which will serve general users after the completion of the project. The latter is a proposal of excellent quality which requires full use of synchrotron

radiation and a large amount of beam time. Both S-type proposals, after rigorous refereeing procedures, are supported financially by the PF. Table 2 summarizes S-type projects active in FY2002.

There were three S2-type proposals initiated in FY2002. Proposal number 2002S2-001, a continuation of 1999S2-002, is aimed at obtaining phase-contrast images for medical applications using an X-ray interferometer at the vertical wiggler beamline BL-14C1. Proposal number 2002S2-002 is an extension of proposal 1997S1-002, which supported the construction of a grazing incidence beamline, BL-1C, and an experimental station with a high-resolution photoelectron spectrometer. This proposal is to investigate nanostructures of semiconductor and magnetic materials using a combinatorial laser molecular-beam epitaxy thin film growth system. Proposal number 2002S2-003 is concerned with an in-situ imaging

Table 1 Number of proposals accepted for the period 1991-2002.

FY	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
S1							3	1	0	0	0	0
S2				1	0	2	1	3	3	2	2	3
U						2	1	4	2	0	5	3
G	284	298	331	369	365	260	303	333	323	308	339	321
P		5	13	15	14	10	6	14	22	17	18	16

Table 2 List of S-type proposals active in FY2002.

Proposal Number	Spokesperson	Title
1999S2-003	Y. Amemiya The Univ. of Tokyo	Development and application of X-ray ellipsometry
2000S2-002	M. Ito Gunma Univ.	Spin- and orbital-magnetic moment-density distribution of ferromagnets by X-ray magnetic diffraction
2000S2-003	T. Takahashi The Univ. of Tokyo	X-ray diffraction studies on structures and properties of interfaces of metal-semiconductors and insulator-semiconductors
2001S2-002	Y. Murakami Tohoku Univ.	Charge, spin, orbital, and lattice ordering of strongly correlated electron system
2001S2-003	T. Ohta The Univ. of Tokyo	Development of soft X-ray energy dispersive surface XAFS and its application to surface chemistry
2002S2-001	Y. Itai The Univ. of Tsukuba	<i>In vivo</i> observation of live objects by phase-contrast imaging using separate X-ray interferometer
2002S2-002	M. Oshima The Univ. of Tokyo	High-resolution photoelectron spectroscopy of semiconductor/magnetic nanostructures
2002S2-003	K. Sakurai NIMS	<i>In-situ</i> X-ray fluorescence imaging with quick feedback capability

technique using X-ray fluorescence spectroscopy and real-time observation. There were some S-type proposals approved in FY2002 which will become active in FY2003. Of note is a new S2 proposal related with the national project "Protein 3000", and a new S1-type proposal for the construction of a collaborative system at BL-1A, where the materials science of strong electron-correlation systems will be investigated.

The scientific outputs of the S2 proposals are found in the Highlights of PART-A and the Users' reports of PART-B of this volume of the Photon Factory Activity Report. A complete list of experimental proposals active in FY2002 can be found in PART-B of this volume. Proposals are also categorized by the five scientific disciplines corresponding to five subcommittees of PF-PAC: a) electronic structure, b) structural science, c) chemistry and new materials, d) life science I (protein crystallography) and e) life science II. Figure 1 shows the distribution of the proposals accepted by these subcommittees in FY2002.

In addition to the S, U, G and P proposals, there are two categories for researchers from private companies. These researchers can join collaborative (C-type) proposals with PF staff members or they can submit their own proposals (Y-type). As listed in PART-B, there are 18 C-type and 3 Y-type proposals active in FY2002.

Figure 2 shows the variation in the number of registered users for the period 1990-2002. The total number increased gradually up to 1995, reached a constant value of about 2400, and increased again in 2001. This increase may indicate that the demand for synchrotron radiation is being augmented in recent years. The temporary decrease in 1997 is due to the long shutdown during the high-brilliance modification of the PF storage ring.

The spokesperson of each proposal is requested to notify us when he/she publishes papers or reviews which are based on the experiments carried out at the PF. These publications are compiled in a database which can be accessed through <http://pfwww.kek.jp/>, together with publications by PF staff members. A list of recent publications is found in the Appendices, and the distribution of the scientific fields is shown in Fig. 3 for the publications of 1996-2002.

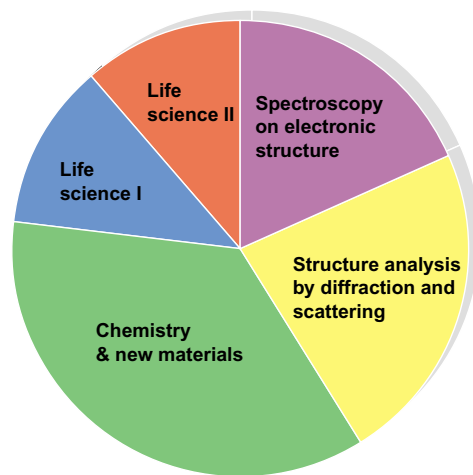


Figure 1 Scientific-field distribution of experimental proposals accepted for FY2002.

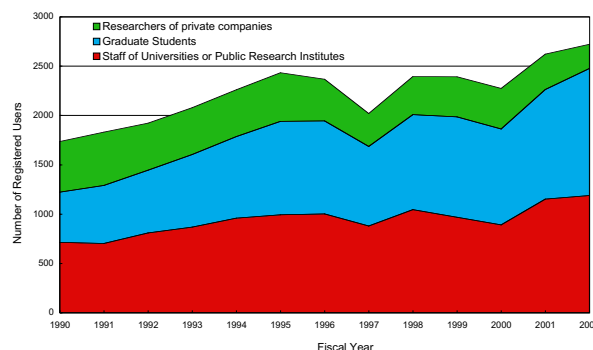


Figure 2 Number of PF users for the period 1990-2002.

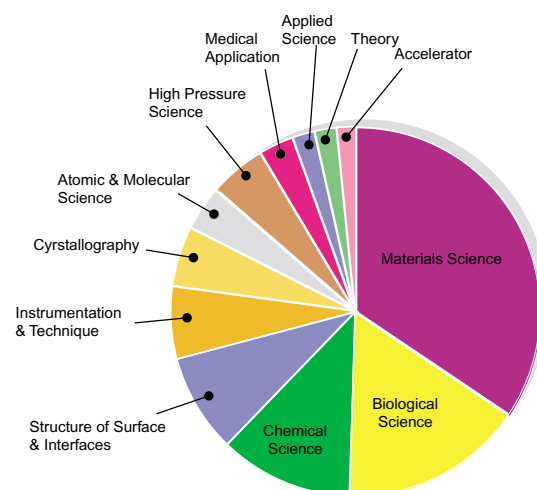


Figure 3 Distribution of publications by scientific fields in 1996-2002.