

History of Construction

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1. Beginning

The idea of constructing a large synchrotron radiation facility (8 or 10 GeV Ring) was proposed at RIKEN in 1984. At that time, the importance of synchrotron radiation on basic and applied research in physics, chemistry, biology, and other fields was well known, and many storage rings dedicated to synchrotron radiation were constructed not only in Japan but elsewhere in the world. In Japan, SOR-RING (0.35 GeV, ISSP, U. of Tokyo, 1975), TERAS (0.66 GeV, ETL, 1981), PF (2.5 GeV, KEK, 1982), and UV-SOR (0.7 GeV, IMS, 1984) had been put into operation. The need for a higher brilliance synchrotron radiation source that could cover X-ray region became accumulated. Science and Technology Agency (STA) established the Materials Development Section in 1984 and the State Minister consulted the Council for Aeronautics, Electronics and other Advanced Technologies on "the important subjects and their promotion for advanced measurement and control in new material development" (Inquiry #9) in March 1985. A Report (#9) was published in March 1986, and the importance of a large synchrotron radiation facility was pointed out. A design study of 6 GeV synchrotron radiation facility was started in 1986 at RIKEN and a budget for research study and R&D was requested.

2. Design Team in RIKEN

In October 1986, a synchrotron radiation facility planning section was organized in RIKEN consisting of only a few members. In March 1987, missions were dispatched to Europe and the United State to investigate synchrotron radiation facilities. Following month, a budget for research study and R&D was approved by RIKEN and the design study was formally started. In July 1987, the Council for Aeronautics, Electronics and other Advanced Technologies submitted a report on "the promotion of comprehensive research on the use of advanced light technology" (#11), where the need for the construction of a large

synchrotron radiation source and the outline of the project were pointed out. Furthermore, in August 1987, the Council for Science and Technology (chaired by the Prime Minister) submitted a report (#14) on R&D policy for materials science and technology, which reaffirmed the need to construct a large synchrotron radiation source.

3. Joint Design Team in October 1988 and 6 GeV CDR

In October 1987, JAERI organized an ad hoc team for the preparation of synchrotron radiation facility and joined the design study with RIKEN. In January 1988, JAERI and RIKEN concluded a collaboration agreement on research and development of a large synchrotron radiation facility, and held the first joint international symposium on "X-Ray SR and Advanced Science and Technology - What will be done by the high-energy high-brilliance SR source?- ". In April, JAERI also approved a budget for R&D of SR facility and formally started the design work. In May, a society was established to conduct research on the next generation large X-ray source. In June, RIKEN published the conceptual design report of STA 6 GeV SR Project. In September, JAERI and RIKEN held a symposium on the accelerator technology for the High Brilliance Synchrotron Radiation Sources as a satellite meeting of SRI88 Tsukuba. There, we presented the lattice design of 6 GeV storage ring.

In October 1988, JAERI and RIKEN established a project team and the office was placed in Komagome Tokyo. From then, the design study of 8 GeV ring (this energy is an original plan) was started and the design of the facility was frequently discussed by the project team.

4. Name of SPring-8

In December 1988, Harima Science Garden City in Hyogo Prefecture was announced as the site best qualified for the propose of synchrotron radiation facility from amongst four site candidates.

In March 1989, JAERI constructed a small storage ring JSR in Tokai for the R&D and began operation. In June, Harima Science Garden city was selected as the site. In August, the facility was named SPring-8 as a result of a

public search for the facility name (Super Photon ring 8 GeV). At that time, very long straight sections in SPring-8, long beamlines, RI beamlines were pursued and discussed in the team.

In February 1990, the second international symposium was held by the joint project team under the title "Biological Science, Materials Science and Industrial Applications". Following this after the symposium, the first Japan-Korea Synchrotron Radiation Symposium was held in Korea, and the main topic of interest was machine design.

5. Start of Construction

In April 1990, SPring-8 project took a step forward with the start of construction of a part of the accelerator components, and the publications of design report of the SPring-8 Project (facility design and scientific program) was began. At the same time, JAERI and RIKEN revised their collaboration agreement and determined their respective responsibilities for the construction of the SPring-8 facility. JAERI is responsible for the injector system (1GeV linac and 8GeV synchrotron), utilities RIKEN is responsible for the storage ring.

In August 1990, total cost of the 8 GeV SPring-8 project was reviewed and estimated to be 108.9 Billion Yen. In October, a task force for the storage ring building design was organized. In December, the Japan Synchrotron Radiation Research Institute (JASRI) was established as non-profit research organization authorized by the STA.

In March 1991, construction of the accelerator components of the linac and the storage ring were started. In May, the Harima branch of the project team opened. In September, the first meeting of the International Advisory Committee of the SPring-8 was held in Tokyo.

In November 1991, a ground breaking ceremony of the SPring-8 took place. The second Japan-Korea SR symposium was held at ETL, Tsukuba.

In March 1992, a third International symposium was held (Surface and Interface Science). Land for construction of the SPring-8 facility (141 ha) was donated to RIKEN by the Hyogo Prefecture Government.

Following month, power supplies of the magnets, vacuum system, RF system, and cooling system for the storage ring went into construction. Investigation of pilot beamlines was also started.

In October, Phase I construction of the SPring-8 storage ring building (9%) was completed. At that time, 24 geodesic standard points were measured around the storage ring. In November 1992, the 3rd Japan-Korea SR symposium was held in Pohang.

6. APS, ESRF, and SPring-8

In April 1993, construction of the synchrotron started. Framework agreement on the collaboration between the APS, the ESRF, and the SPring-8 was concluded in May. The SPring-8 Users Association was organized in May and a discussion on the construction of SPring-8 Public Beamlines started in August.

In October, the rest of the accelerator group of RIKEN moved to the Harima site. In November, the 3rd International Advisory Committee of the SPring-8 was held in Harima. In January 1994, the first joint APS-ESRF-SPring-8 workshop on accelerator and beamline was held in Grenoble. In May, the 4th International Symposium on SR (Frontier of Materials Science in SR) convened in Kobe. In June, four beamlines were selected in the Beamline Committee. In September, construction of the linac building was completed.

7. SPring-8 Main Office to the Site

In October, the main office of the SPring-8 Project Team moved from Komagome to Harima and preparation began to establish JASRI as the body that would have eventual responsibility for running the SPring-8 facility.