

Chapter 1 Introduction

The SPring-8 facility was designed and constructed by the Japan Atomic Energy Research Institute (JAERI) (presently, Japan Atomic Energy Agency (JAEA)) and the Institute of Physical and Chemical Research (RIKEN). After its inauguration in October 1997, it has been operated by the Japan Synchrotron Radiation Research Institute (JASRI) under the board organized by JAERI, RIKEN and JASRI. As of May 2006, 48 beamlines are in operation, and among them, 25 beamlines are for public use under JASRI's management. These beamlines contain new instruments for the development of new branches of science, which are available only in a limited number of synchrotron radiation facilities. The state-of-the-art facilities are shared with the worldwide communities of basic science and industry, and more than 7,700 users per year have visited SPring-8 in recent years.

One of the most noteworthy events in 2005 was the reorganization of the party that steers SPring-8. JAEA withdrew from the management of SPring-8 and a new administrative structure was begun in October 2005. Currently, the SPring-8 steering board, organized by RIKEN and JASRI, runs the SPring-8 facility, while JAEA is concentrating on their own research mainly at their four contract beamlines.

Some revisions were made to the beamline lineup in 2005. First, two of three R&D beamlines were converted into standard public beamlines. The BL47XU beamline has become "HX PES, MCT Beamline" dedicated to high-energy photoemission spectroscopy and micro-tomography, and the BL38B1 beamline is now "Structural Biology III" for routine macromolecular crystallography, while the BL46XU beamline remains for "R&D." Secondly, four JAEA beamlines (BL11XU, BL14B1, BL22XU, BL23SU) have been transferred to the category of "Contract Beamlines," in accordance with the JAEA's withdrawal from the management of SPring-8. Thirdly, SPring-8 has celebrated the first delivery of SR beam in a contract beamline, BL08B2, Hyogo BM (Hyogo Prefecture) in June 2005. Finally, construction of BL14B2 (Engineering Science Research II) started in 2006.

New programs have been launched concerning beam times. JASRI began to receive proposals under the Program for Strategic Use of Advanced Large-scale Research Facilities in the 2005B research term, in order to promote beam use by industry. Currently, twenty percent of total beam times is assigned to those proposals and the partnership between SPring-8 and industry is clearly accelerating. JASRI has also set up the "Budding Researchers Proposals" for implementing innovative users' ideas that are expected to contribute to future sciences related to synchrotron radiation.

The SPring-8 facility was closed between January and March in 2005 for the repair of the roof that was damaged by the direct onslaught of the two large typhoons in the fall of 2004. Nevertheless, JASRI managed to uphold the total beam time through the 2004A and 2004B research terms.

This book has been compiled for the Beamline Review Committee to learn the outline of SPring-8. The next chapter presents the current status of SPring-8 beamlines. Chapters 3 and 4 describe the storage ring operation and the user operation. Chapter 5 presents the statistics of publications from all beamlines in SPring-8. Finally, Appendix A summarizes the experimental stations and Appendix B lists the publications.

The information in this book is based on data from 1997B to 2005B, except for the list of

publications. The list comprises all the publications registered by May 31, 2006.