Promoting Industrial Applications of JASRI/SPring-8

To promote the industrial use of SPring-8, an *Industrial Application/Utilization Support Group* was established at the Japan Synchrotron Radiation Research Institute (JASRI/SPring-8) in October 2000. In April 2005, in order to promptly cope with various forms of utilization by industrial application users and to reinforce support for beamline utilization in the future, the group became a division called the *Industrial Application Division*, and has been keeping its dynamic activities thus far. As shown in Fig. 1, owing to the effort of JASRI to promote industrial applications since 2000, the number and percentage of industrial research proposals of companies from a wide range of industrial fields such as life science, materials (e.g., metal, ceramics and polymers) science, electronics, energy and environmental science have been significantly increasing.

The BL19B2 public beamline of the SPring-8 facility began operating for industrial use in the last half of 2001. The purpose of this beamline is to promote the use of synchrotron radiation by industrial users. BL19B2 consists of one optics hutch and three experimental hutches, and currently has four instruments for meeting various kinds of experimental need in industrial research. The instruments for X-ray absorption fine structure (XAFS) measurement are installed in the first hutch, as shown in Fig. 2. The second hutch is used for X-ray diffraction (XRD) experiments with a multiaxis diffractometer (Fig. 3) and a Debye-Scherrer camera (Fig. 4). X-ray imaging experiments (Fig. 5) are performed in the third hutch.

A further growing need for XAFS is expected in the fields of catalysts, phosphors, fuel cells and batteries. The second public XAFS beamline for industrial applications (BL14B2) will be effective for promoting research output in these fields. The use of this new beamline will begin in the last half of 2007.

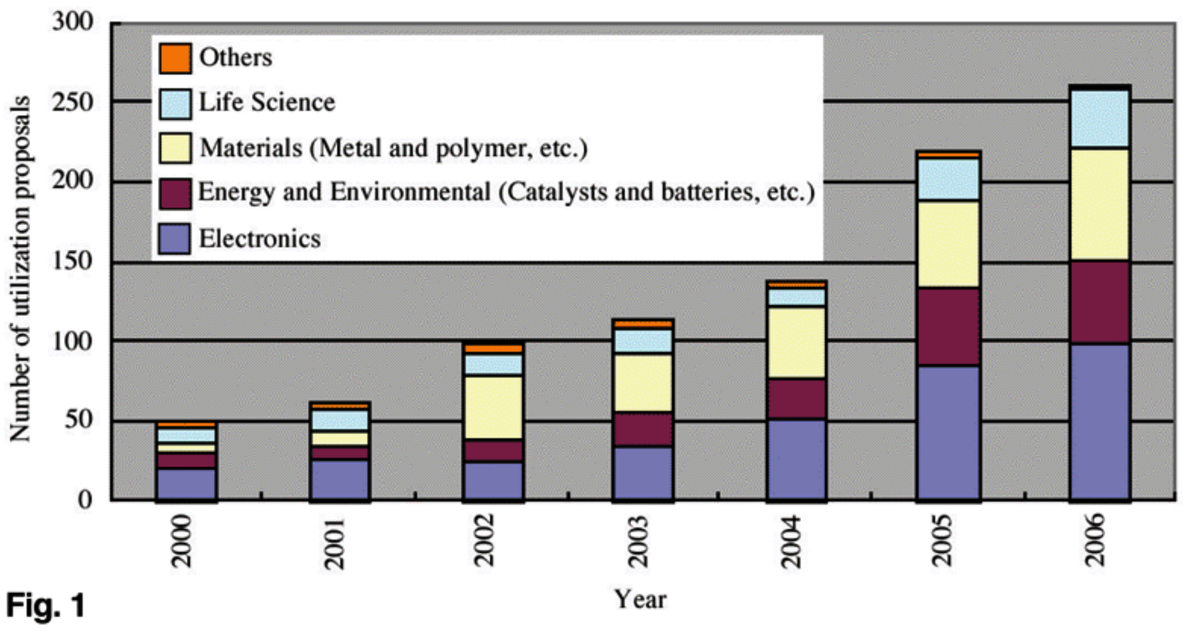

Fig. 1

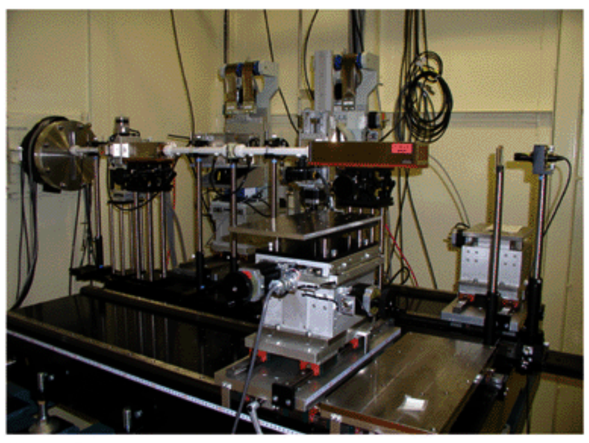

Fig. 2

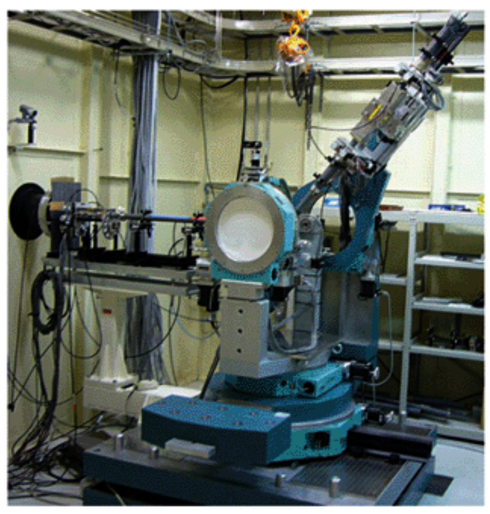

Fig. 3

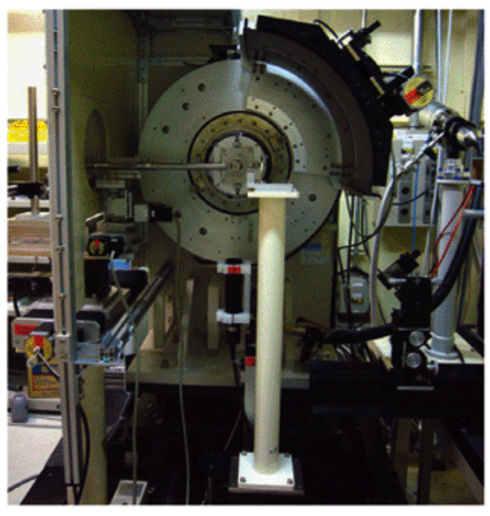

Fig. 4

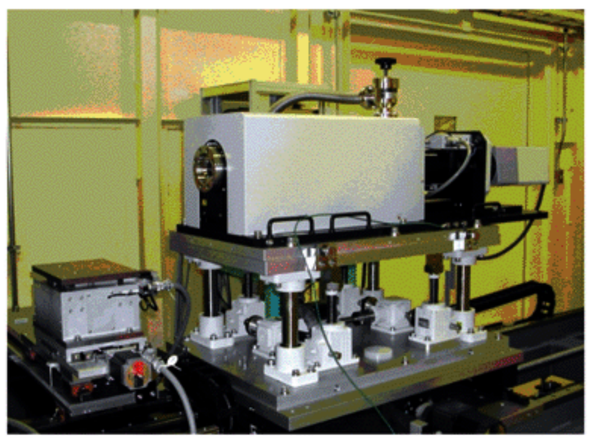

Fig. 5

Fig. 1 Annual trends of number and percentage of industrial research proposals from companies.

Fig. 2 XAFS measurement system (transmission mode, fluorescence mode and conversion electron yield mode) in the first experimental hutch of BL19B2.

Fig. 3 Multiaxis diffractometer for multipurpose X-ray diffraction measurement in the second hutch of BL19B2.

Fig. 4 Debye-Scherrer camera for powder X-ray diffraction measurement in the second hutch of BL19B2.

Fig. 5 CCD camera and zooming tube for X-ray imaging observation in the third hutch of BL19B2.

WIRMS2007

International Workshop on Infrared Microscopy and Spectroscopy with Accelerator Based Sources (WIRMS2007) will be held at Awaji Yumebutai, Awaji City, Hyogo, Japan, from September 25 to 29, 2007.

http://www.uvsor.ims.ac.jp/WIRMS2007/index.htm