

6. Industrial Use

1. Overview

Industrial application is an important mission for SPring-8. The public and contract beamlines of SPring-8 are utilized for industrial applications in various fields. Here, the status of industrial applications at the public beamlines of SPring-8 in FY2024 is reported. In FY2024, 121 companies conducted experiments in SPring-8, and 108 used public beamlines. The number of approved proposals of company users at public beamlines was 382. This was about 107% of that in FY2023. These approved proposals of industrial users accounted for 21% of all approved proposals at public beamlines (Fig. 1). Furthermore, 84% of the approved proposals of industrial users were proprietary proposals. This demonstrates that the experiments conducted at SPring-8 are useful and effective for industrial research and development among company users.

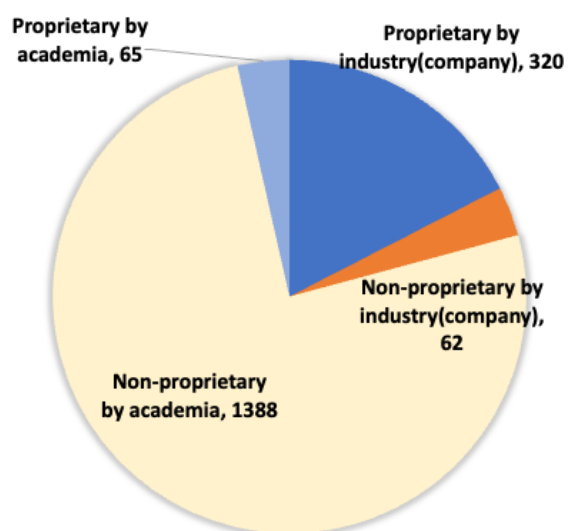


Fig. 1. Number of approved proposals at public beamlines in FY2024, categorized by the organization of the project leader.

2. General proposals for industrial applications

General proposals for industrial applications are non-proprietary proposals reviewed by the review subcommittee for industrial application, as mentioned above. The review of these proposals has focused particularly on industrial significance. Academic users can submit these proposals, but the project team must include at least one person employed by a private company. In FY2024, 32 of the 47 submitted proposals were approved. The number of submitted proposals decreased to about 59% of that in FY2023 (80 proposals). This downward trend continues from FY2022. (In FY2022, the number of submitted proposals was 153.) The following reasons are considered: (1) from 2022B, it became possible for academia users of the three former Engineering Science Research beamlines to submit proposals reviewed by review subcommittees other than those for industrial applications, and (2) the usage of company users has become mainly proprietary. The percentage of proposals applied by company users among the proposals submitted for review to the subcommittee for industrial application in FY2024 increased to 53% compared with 29% in FY2022. (In FY2023, the percentage was 41%.) This trend is expected to continue in the future, but general proposals for industrial applications should continue to be important for acquiring new industrial applications of SPring-8. Therefore, the review policy of the subcommittee for industrial application was changed to place greater emphasis on contributions to the business of the companies involved in the reviewed proposals since FY2023.

3. Measurement services

Applications for measurement services are accepted as proprietary proposals. In these services, users send in their samples, and beamline staff conduct the measurements. The beamtime is provided in 1 h increments. Users can submit proposals up to two weeks prior to the scheduled dates for measurement services. Because of these features, measurement services are useful for company users. These measurement services have been provided for XAFS (BL14B2), powder diffraction (BL19B2), SAXS (BL19B2), HAXPES (BL46XU), and X-ray CT (BL28B2). In FY2024, 36% of proprietary proposals carried out by company users at public beamlines were for measurement services (Fig. 2).

4. Lectures, workshops, and training for users in industrial application fields

The industrial application division holds lectures, workshops, and training for beginners and potential users in industrial application fields. In FY2023, two lectures on analysis techniques for XAFS and SAXS were held. In addition, there were seven workshops on the industrial application of SPring-8 in such fields as electron devices, metals, batteries, and chemical products. There were 216 participants at the workshop during the 21th Joint Conference on Industrial Applications of SPring-8 held on September 10 and 11, 2024. The following training sessions for analysis techniques utilizing SPring-8 were held.

- XAFS: one time at BL14B2
- Powder diffraction: one time at BL19B2
- SAXS: one time at BL19B2
- HAXPES: one time at BL46XU
- *in situ* XRD measurement on metal material under tensile testing: one time at BL13XU

- X-ray imaging: one time at BL28B2
- Biomacromolecular crystallography: four times at BL41XU

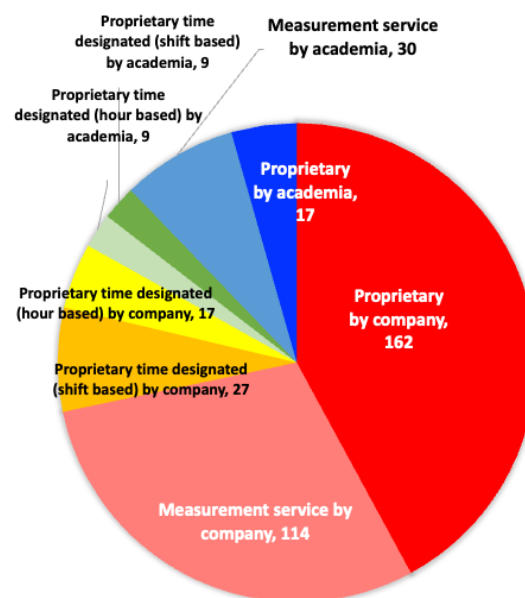


Fig. 2. Number of proprietary proposals carried out at public beamlines in FY2024, categorized by type of proposal and the organization of the project leader.

SATO Masugu

General Support Division, JASRI