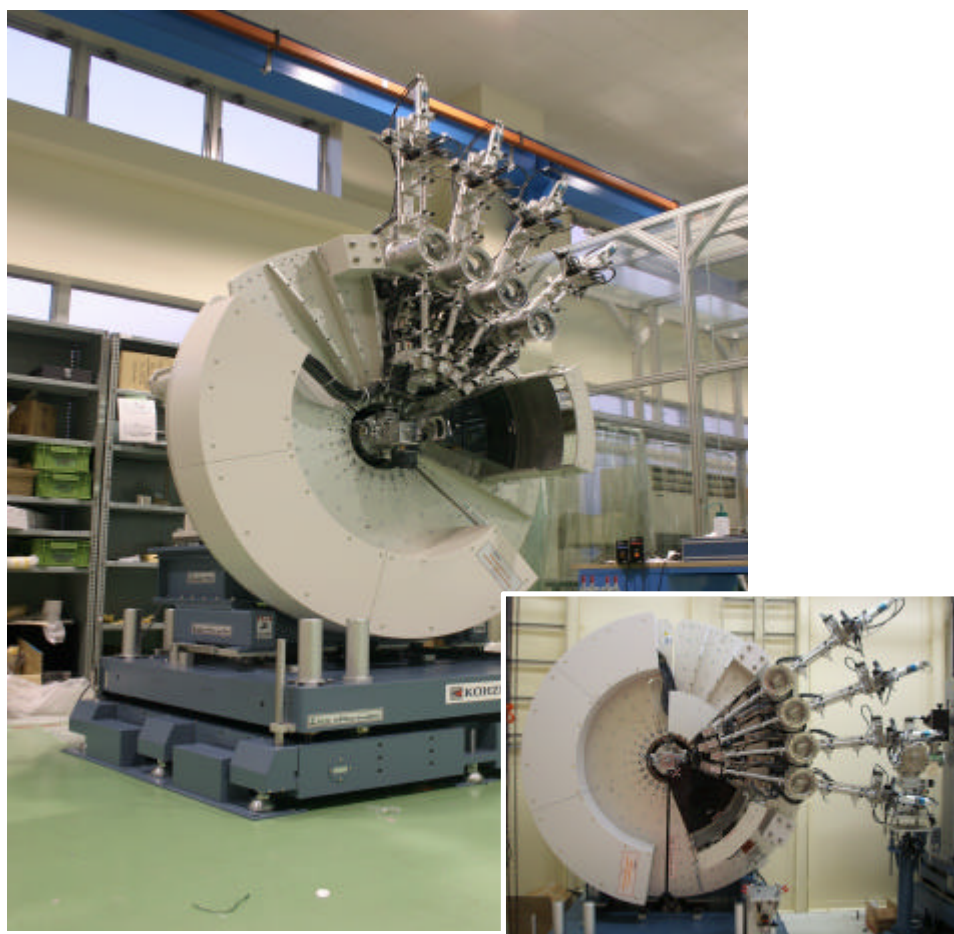


X-ray Powder diffraction measurement system < PDS-16 >



This system can measure the diffraction from powder sample speedy with the plural detectors and Imaging Plate.

Sample stages consist of high-speed spinner and adjustment stages for sample positioning. In near future, an automatic sample changer will be installed.

- 1 . -2 rotation stage
- 2 . Support structure
- 3 . Plural analyzers and detectors system
- 4 . Cylindrical Imaging Plate unit
- 5 . Sample stage

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1 . -2 rotation stage

The main axis of this device is -2 rotation stages which are mounted on vertically. axis (stroke $\pm 180^\circ$) and 2 axis (stroke $-5 \sim +180^\circ$) can rotate independently. 2 stage has a rotary encoder and counter balance on the table.

2 . Support structure

Support structure has some adjustment mechanisms which are vertical alignment ZT axis (stroke -25 to $+250\text{mm}$), tilt alignment on whole system 2 axis ($\pm 2^\circ$) and horizontal alignment XT axis ($-170 \sim +20\text{mm}$). All axes are motorized. In additional, there are manual alignments using screws for coarse alignment of whole system at tilt, vertical and horizontal directions

3 . Plural analyzers and detector system

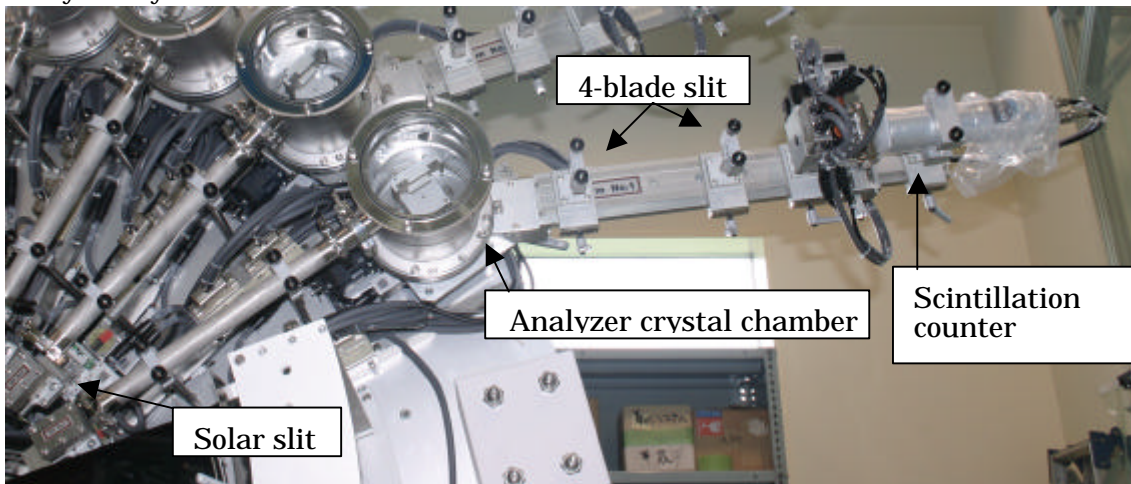
Plural analyzers and detector system are mounted on rotation table every 15° . Number of them are 4. In future, maximum 6 systems can be mounted. There are the positioning pins which can make to removable the systems with repeatability of less than $100 \mu\text{m}$.

Standard unit consists of He chamber, crystal adjustment stages, 2 slits and detector.

The adjustment stages of analyzer crystal are motorized rotation stage, manual tilt and horizontal stages. The rotation stage, which has O-ring seal between He chamber and stage, moves on airside. The other stages are mounted in He chamber.

When these plural analyzers mode, first slit is used as the solar slit. The diffraction beam from sample reflects analyzer crystal.

When 2 slits are used as plural double slits, the diffraction beam does not reflect analyzer crystal.



4 . Cylindrical Imaging Plate unit

This component is mounted on 2 rotation table. There is the guide pins for high repeatability removable. The shield plates of slit shape are mounted before the cylinder cassette holder of Imaging Plate. Opening size of slit (horizontal direction) can be changed 5mm and 10mm. The cylinder cassette holder can be moved horizontally. There is also the direct beam stopper, the cassette holder of the film sheet and He path.

5 . Sample stage

Alignment stages can be mounted on axis rotation table. There is a guide pin for removable these stages. X, Y, Z, tilt stages, high speed rotation stage and so on can be mounted.