X-ray diffractometers with an Eulerian cradle

Keywords

X-ray diffraction, monochromator, crystallography, reflectometry, finite size effect, pole figures, reciprocal space mapping, epitaxy.

Function

The following facility allows to investigate single crystals, oriented thin films or highly textured tapes. Reflectivity measurements and/or finite size effect are used to determine thicknesses of thin films. Thin film epitaxy, symmetry, stress and texture are investigated by pole figures or ϕ-scans.

Present use

These instruments are used to investigate superconducting thin films and multilayers, single crystals and portions of textured tapes.

Specifications

- room temperature
- 4-bounces monochromator
- θ, 2θ, θ-2θ, ϕ, χ, x, y scan
- sample rotation (ϕ angle): 0°-360°
- tilt (χ angle): 0°-180°
- CuK_α radiation
- height adjustment (z): by hand or motorised

Requirements

Samples are typically thin films grown on 5 x 5 mm^2 substrates, 2 inch wafers or single crystals.

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