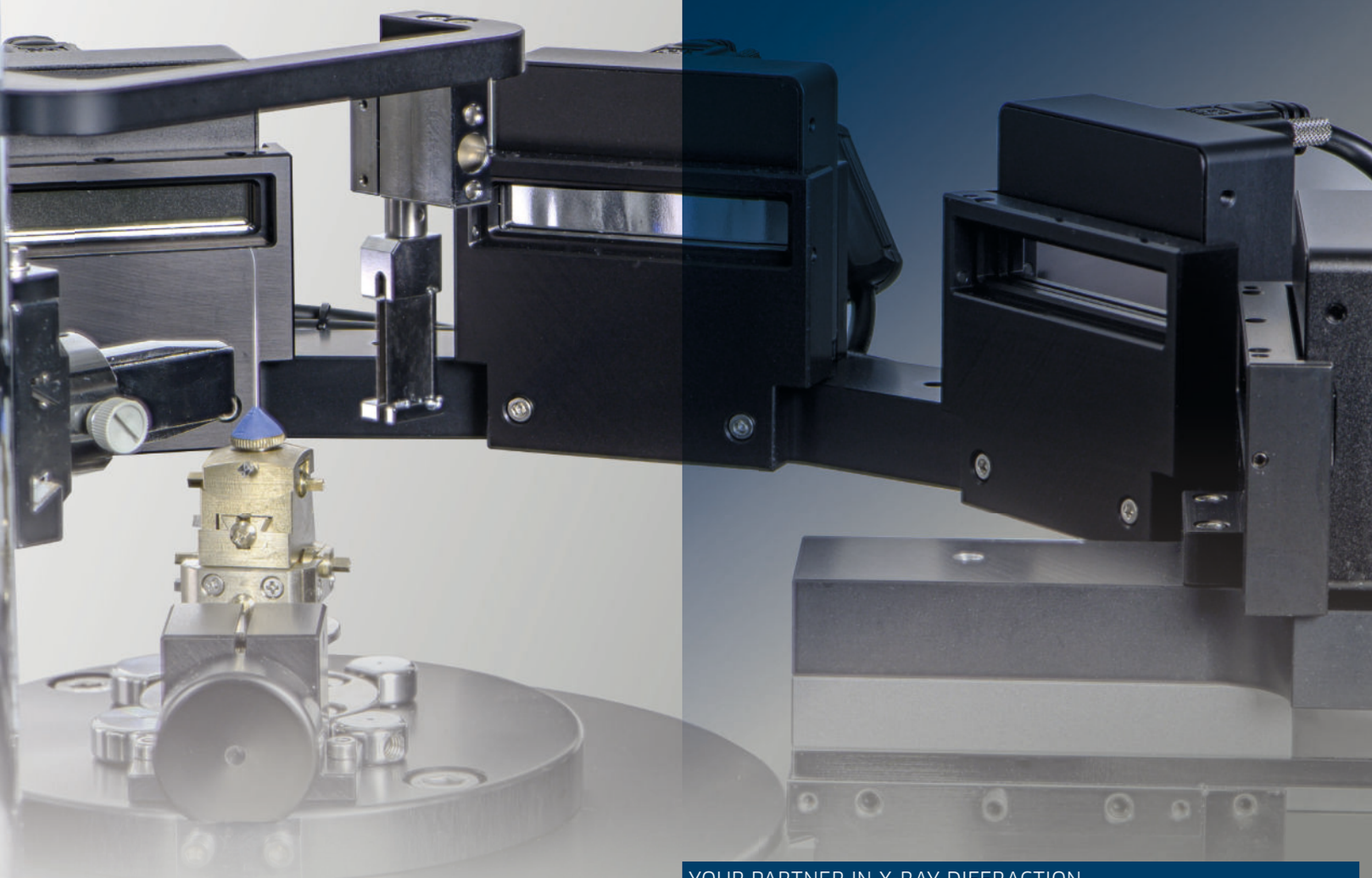
STOE

SINCE 1887

POWDER DIFFRACTOMETRY

SAMPLE HOLDERS



YOUR PARTNER IN X-RAY DIFFRACTION

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TRANSMISSION

TRANSMISSION SAMPLE HOLDER

APPLICATIONS

- Quick overview measurements as well as Rietveld quality data collection
- Polymer samples (fibres or foils) – Very small sample amounts
- As very thin coats of sample can be prepared on STOE's zero background foils, this technique is preferable for highly absorbing materials when measured in transmission mode

CHARACTERISTICS

- Easy and clean preparation of samples on zero background foils
- Convenient loading of sample inserts with different inner diameters
- Sample displacement and – thickness can be corrected by a micrometer screw
- Sample rotation in a high precision ball-bearing guarantees minimal reflex broadening and low noise

AVAILABLE FOR

> STOE STADI P / MP / COMBI

TRANSMISSION SAMPLE CHANGER

APPLICATIONS

- The transmission sample changer offers the opportunity to measure up to 30 samples in a row, using identical or individual measurement parameters. It can be mounted on vertical or horizontal goniometers and permits fast sample throughput and high quality data in proven reliability

CHARACTERISTICS

- Capacity of up to 30 samples
- Easy load/unload function
- Controlled by STOE´s Software Package WinX^{POW}

AVAILABLE FOR

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COIN CELL HOLDER

APPLICATIONS

- The STOE Coin Cell Holder allows the structural in situ analysis of electrode materials in battery cells during a typical charge-discharge cycle and this in transmission geometry
- STOE has developed the sample holder based on the studies of the Leibnitz Institute for Solid State and Materials Research (IFW) Dresden with exclusive patent rights [1]

[1] Herklotz, M., Weiß, J., Giebeler, L. and Ahrens, E., German Patent DE102015214177B3, 2015

CHARACTERISTICS

- For coin cells size 2032 with Kapton windows. Other sizes on request
- Coin cells can be clipped into a standard clamp which is integrated in a STOE transmission sample holder insert
- The sample can be slewed to improve the counting statistics and to reduce the effect of preferred orientation, a two pin contacting to a potentiostat is provided

AVAILABLE FOR

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POUCH CELL HOLDER

APPLICATIONS

- This sample stage allows to mount a pouch cell on the diffractometer for static state or, when a potentiostat is connected to the pouch cell, in operando measurements. The cells are simply clamped into position

CHARACTERISTICS

- For cells up to 120 x 160 mm
- 50 mm window diameter
- Translation along the beam path for precise positioning of the cell in the goniometer axis

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DEBYE-SCHERRER

CAPILLARY SAMPLE HOLDER

APPLICATIONS

- Minimising preferred orientation leading to accurate intensities for structure solution and Rietveld refinement
- Obtaining narrow FWHM
- Suitable for air and moisture sensitive materials in sealed capillaries
- Also used with low temperature attachments

CHARACTERISTICS

- Glass capillaries between 0.1 and 2.0 mm diameter
- The ultra precise goniometer head guarantees coincidence of capillary and diffractometer axis

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PERMANENT ALIGNED CAPILLARY SAMPLE HOLDER

APPLICATIONS

- Qualitative and quantitative phase analysis
- Rapid capillary scans

CHARACTERISTICS

- Easiest slide-in loading
- Pre-set alignment due to three guide bushes
- Height adjustment for an optimal sample position in the X-ray beam
- Capillaries between 0.1 and 1.1 mm

AVAILABLE FOR

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CAPILLARY SAMPLE CHANGER

APPLICATIONS

- The sample changer for capillaries has been developed for automated measurements of up to 10 capillaries in Debye-Scherrer mode. The capillaries have only to be inserted in the guide bushes, therefore no alignment, e.g. of a goniometer head, is necessary. The position of the capillaries in the X-ray beam and their exposure time are menu-driven by STOE's control and evaluation software. A manual height adjustment to optimise the amount of sample material in the beam is, of course, included

CHARACTERISTICS

- Up to 10 capillaries
- Additional height adjustment for optimised sample position in the beam
- No capillary alignment necessary

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GANDOLFI SAMPLE HOLDER

APPLICATIONS

- Accurate investigations of samples with preferred orientation

CHARACTERISTICS

- Precise goniometer head
- 45° phi axis
- Permanent rotation

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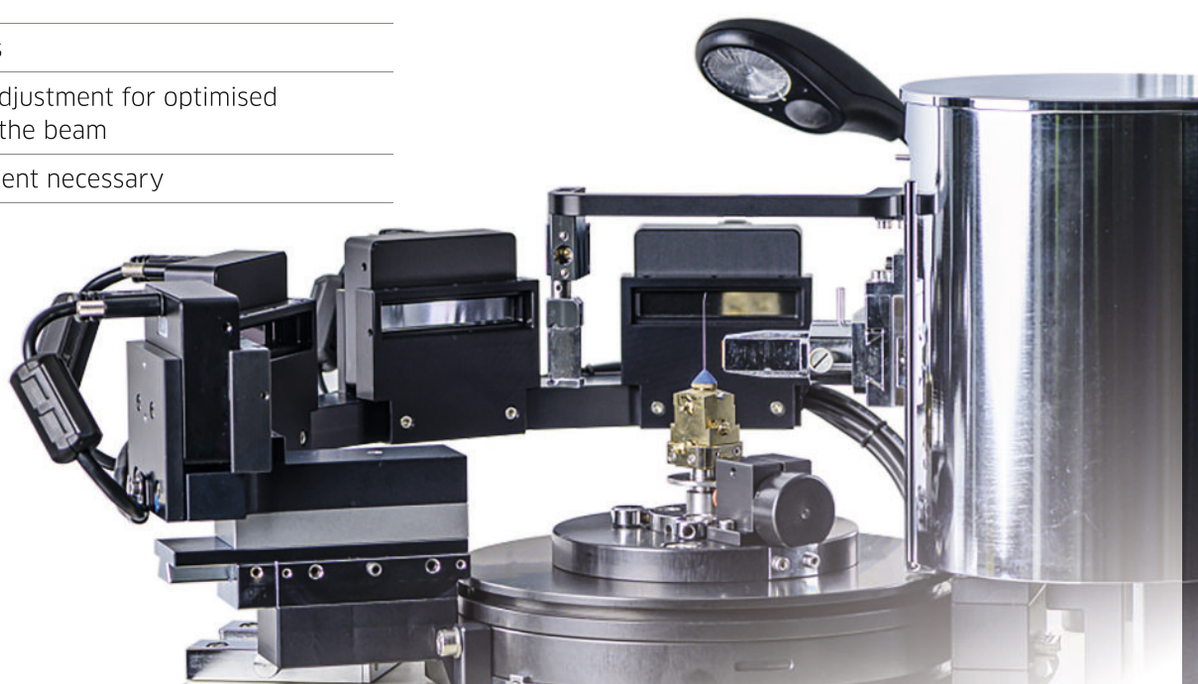
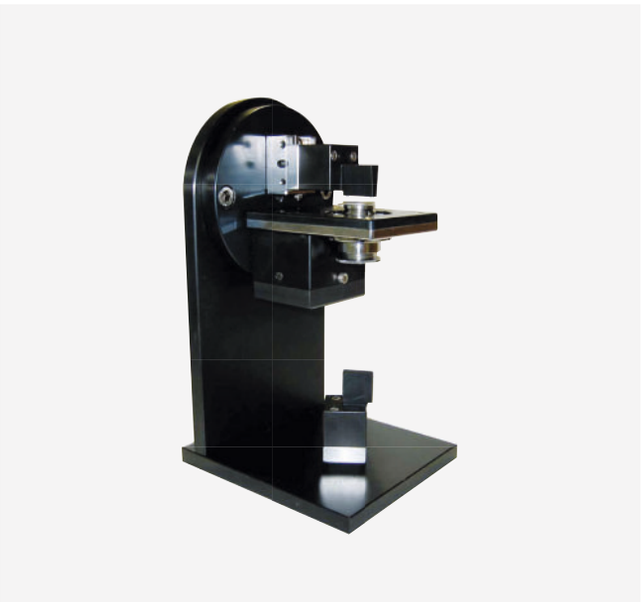


REFLECTION



REFLECTION SAMPLE HOLDER

APPLICATIONS

- The reflection mode has to be applied in all cases the transmission or the capillary techniques cannot be used, e.g. for measurements of bulk materials, liquids, Langmuir-Blodgett films or thin layers

CHARACTERISTICS

- Precise height adjustment of the sample using a reference blade
- Zero background sample inserts with or without cavity

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REFLECTION SAMPLE CHANGER

APPLICATIONS

- STOE's reflection sample changer for up to 12 samples provides an individual and highly precise height alignment for each sample and can be used on all STOE goniometers in Bragg-Brentano geometry, vertical or horizontal

CHARACTERISTICS

- Capacity of up to 12 samples
- Easy height adjustment for bulk samples with different thicknesses (up to 20 mm)
- Controlled by STOE´s Software package WinX^{POW}

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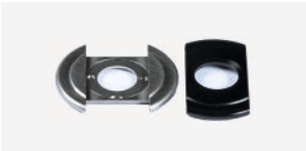
SPECIAL PURPOSE SAMPLE HOLDER



HIGH THROUGHPUT & COMBINATORIAL ANALYSIS SAMPLE CHANGER

APPLICATIONS

- Fast measurements even of small amounts of sample material
- Measurements of liquids
- Ideal for combinatorial and high throughput analysis

CHARACTERISTICS

- Variable X-Y grid
- Easily exchangable inserts for up to 96 samples
- Height adjustment by micrometer screw
- Software driven position control, batch mode possible

AVAILABLE FOR
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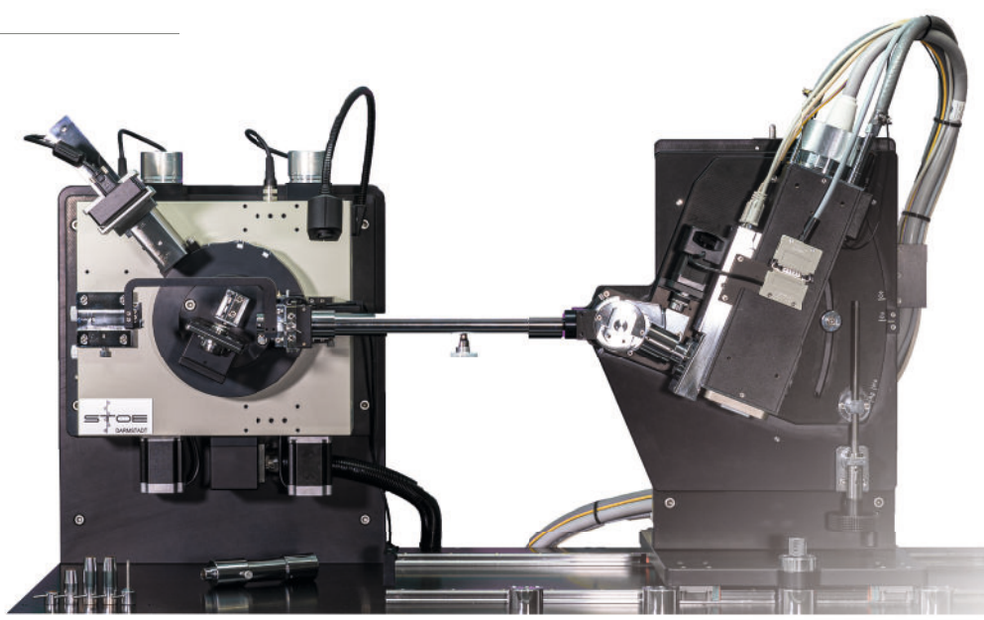
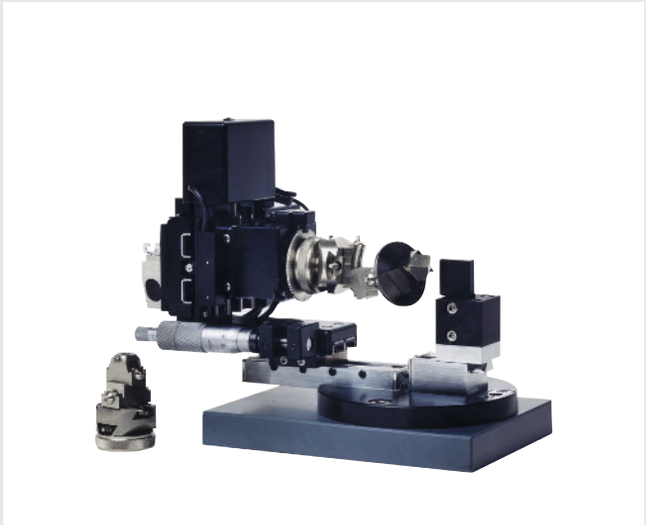
TRANSMISSION SAMPLE HOLDERS

APPLICATIONS

- Air/Moisture Sensitive Sample Insert:
  Perfect for sensitive sample materials.
  The airtight sheat is available with Kapton or acetate foil windows
- Clip Insert:
  The clip insert renders the screwdriver unnecessary for sample preparation
- Single use and Storage Insert:
  These inserts allow measurements of dry or moist powders or paste. Once closed they can be stored for easy traceability or further analysis. Windows are made from Kapton or cellulose acetate



SPECIAL PURPOSE SAMPLE HOLDER



REFLECTOMETRY SAMPLE HOLDER

APPLICATIONS

As misalignment of the sample strongly affects the quality of the results in reflectometry experiments, STOE's reflectometry sample holder has been designed for accurate alignment for e.g.:

- Reflectometry experiments to determine film thickness, composition and surface roughness
- Standard powder diffractometry
- Grazing incidence experiments for phase analysis of thin films

CHARACTERISTICS

- Reference blade for reproducible height adjustments
- Micro-controlled sample alignment with digital sample position display
- Reference blade serves as collimator in reflectometry measurements
- Manual tilt correction possible
- Sample spinning for wide-angle X-ray diffraction

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MULTI-PURPOSE ANALYZER STAGE

APPLICATIONS

- Determination of crystal axis orientation of large single crystals
- Alignment of the goniometer head carrying a large single crystal for grinding and cutting
- Automatic XRPD-analysis of round or squared sample arrays in combinatorial analysis

CHARACTERISTICS

- Standard IUCr goniometer head mount
- Motorized and PC-controlled X and Y translation ± 10 mm with a resolution of 5 µm
- Motorized and PC-controlled rotation with a resolution of 0.0072°
- Manual micrometer-controlled Z translation (0 – 50 mm) for the alignment of a crystal surface or a sample array to the reference blade

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