

# STOE

## POWDER DIFFRACTOMETRY ACCESSORIES



### 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 films of sample can be prepared on STOE's zero scattering foils, this technique is preferable for highly absorbing materials when measured in transmission mode
- Available for the STOE STADI P series and the Theta/Theta diffractometer when equipped with a primary multilayer.

#### Characteristics

- Easy and clean preparation of samples on zero scattering 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 ball-bearing guarantees no wear and low noise
- Optional stepping motor control available for Texture measurements on fibre samples

## SAMPLE HOLDERS

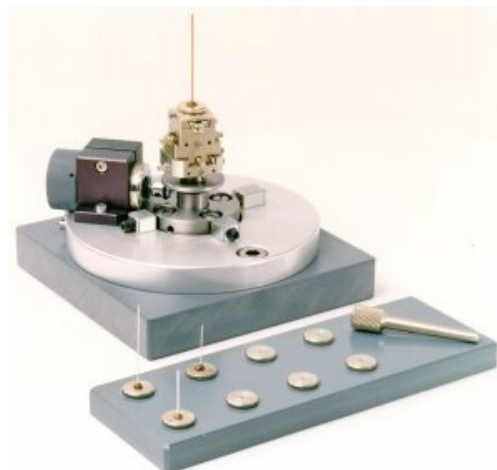
## Applications

- Minimising preferred orientation leading to accurate intensities for structure solution and Rietveld refinement
- Obtaining narrow FWHM and symmetric profiles
- Suitable for air sensitive and hygroscopic materials in sealed capillaries
- Used with low temperature attachments
- Available for the STOE STADI P series and the Theta/Theta diffractometer when equipped with a primary multilayer

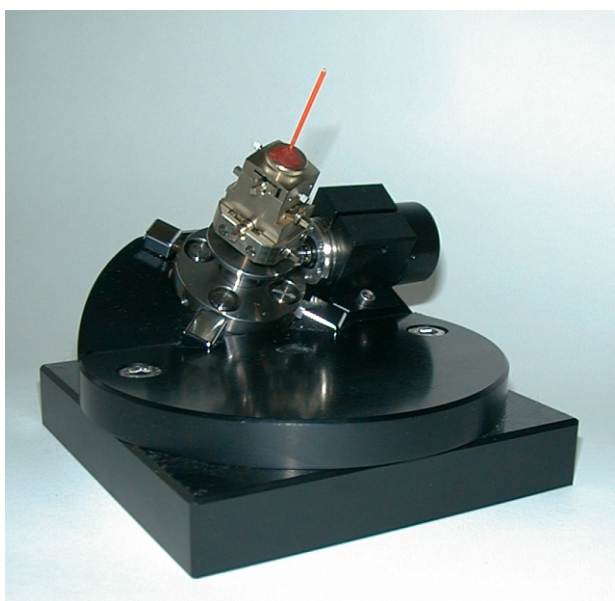
## Characteristics

- Glass capillaries between 0.1 and 2.0mm diameter
- A precise goniometer head, aligned under microscope control, guarantees coincidence of Capillary and diffractometer axis

## CAPILLARY SAMPLE HOLDER



# GANDOLFI



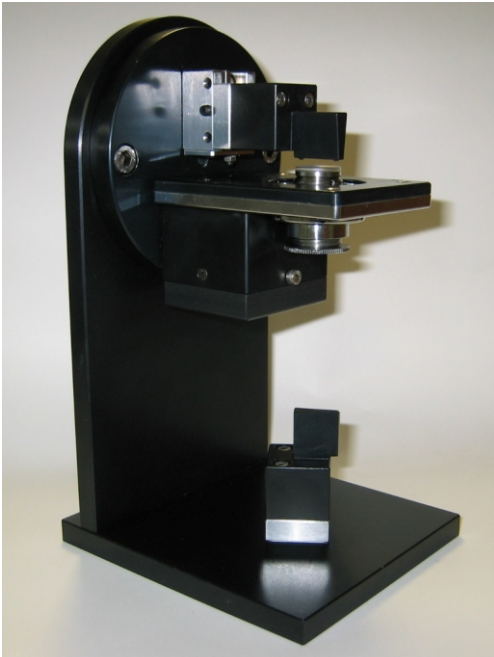
## Applications

- Accurate investigations of samples with preferred orientation
- Available for the STOE STADI P series

## Characteristics

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

## 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.

The characteristics of STOE's Reflection Sample Holder are:

### Characteristics

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

# PLUG-AND-MEASURE



### Applications

- Available for the STOE STADI P series
- Qualitative and quantitative phase analysis
- Fast data acquisition in combination with the IP-PSD

### Characteristics

- Auto-alignment due to three guide bushes
- Easiest capillary exchange
- Sample rotation for excellent statistics
- Height adjustment for an optimal sample Position in the X-ray beam
- Capillaries between 0.1 and 1.1 mm

## PERMANENT ALIGNED CAPILLARY 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 specifically designed for accurate alignment. It is usually used on Theta/Theta diffractometer for:

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

### Characteristics

- Reference blade for reproducible alignment of samples differing in thickness
- Micrometer-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



## REFLECTOMETRY SAMPLE HOLDER

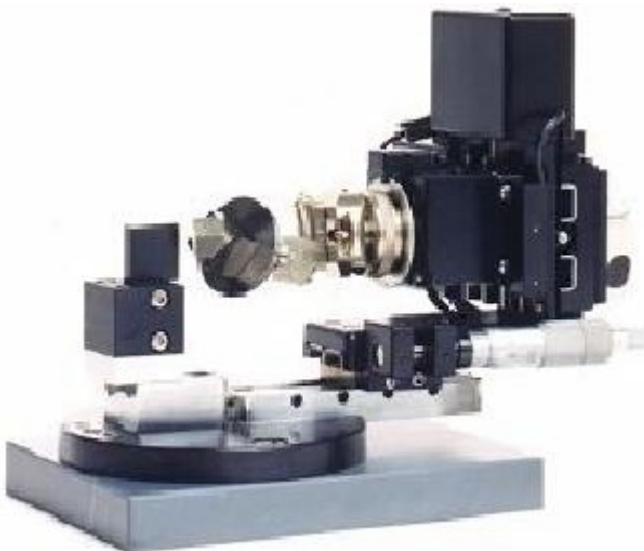
# SPECIAL TASKS

### Applications

- Determination of crystal axes 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 ACA goniometer head mount
- Motorized and PC-controlled X and Y translation +/- 10 mm with a resolution of 5 mm
- Motorized and PC-Controlled rotation with a resolution of  $0.0072^\circ$
- Manual micrometer-controlled Z translation (0 - 50 mm) for the alignment of A crystal surface or a sample array to the reference blade



## MULTI-PURPOSE ANALYZER STAGE

### Characteristics

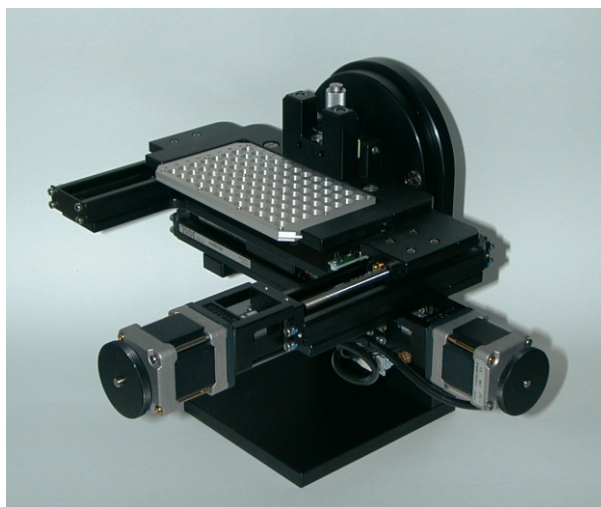
A new designed sample holder for high throughput and combinatorial measurements in transmission mode. The sample holder is providing:

- A variable X, Y grid
- Easily exchangeable inserts for up to 96 samples
- Height adjustment by micrometer screw
- Menu driven position control

### Applications

- Fast measurements even of small Amounts of sample material
- Measurements of liquids
- Whole area of combinatorial and high throughput analysis

## HIGH THROUGHPUT AND COMBINATORIAL ANALYSIS

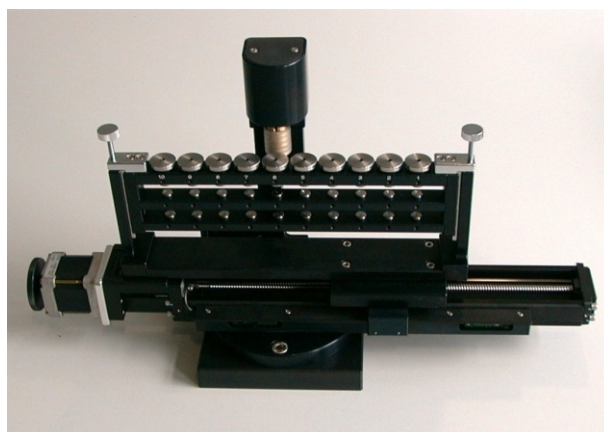


# HIGH THROUGHPUT

## SAMPLE CHANGER FOR CAPILLARIES

### Applications

The sample changer for capillaries has been developed for automated measurements of up to 10 capillaries in Debye-Scherrer mode using the STADI P powder diffractometer in horizontal setup. 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 optimize the amount of sample material in the beam is, of course, included.



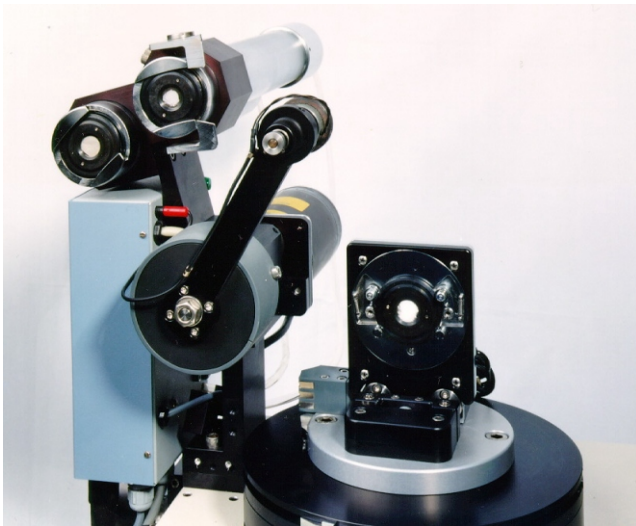
### Characteristics

- Available for STOE STADI P or STADI MP powder diffractometers
- Capacity of up to 10 capillaries
- Additional height adjustment for optimized sample position in the Beam
- No capillary alignment necessary!

# SAMPLE CHANGERS

## Applications

The sample changers for transmission or reflection can be set up on the diffractometers as pre-aligned additional units and are controlled by the software package WinX<sup>POW</sup>. The user benefits from fast sample throughput, proven reliability, high quality data sets, each file carrying its unique identifier accessible through the flexible WinX<sup>POW</sup> file management system. The STOE sample changers are as easily exchangeable as the other STOE sample holders and can be set up on the normal diffraction stage of the instruments.



### Transmission sample changer

- Available for STOE STADI P or STADI MP diffractometer
- Capacity of up to 30 samples
- Easy load / unload function
- Controlled by STOE's Software Package WinX<sup>POW</sup>



### Reflection sample changer

- Available for STOE's Bragg/Brentano and Theta/Theta diffractometer as well as for the Multi-Purpose-diffractometer STADI MP
- Capacity of up to 12 samples
- Easy height adjustment for bulk samples with different thickness (up to 20 mm)
- Controlled by STOE's Software package WinX<sup>POW</sup>

## Characteristics