Anton Paar

::: Innovation in Materials Science


# VarioStage for SAXSess

The VarioStage is a unique, multi-purpose sample stage which has been developed especially for small- and wide-angle X-ray scattering studies. It allows multi-directional sample positioning of oriented and thin-film samples as well as automated measurements of multiple solid samples.

## The compact tool for comprehensive SWAXS studies.

## A versatile and high-precision instrument

**VarioStage** is a new multi-purpose sample stage for the SAXSess small- and wide-angle X-ray scattering (SWAXS) system. It is applied for screening solids as well as multi-directional sample positioning and therefore greatly extends the possibilities of investigating solid samples using SWAXS.

Its precise control of scanning, rotating and tilting the sample is perfectly suited for the investigation of solid samples with special focus on studying orientation phenomena.


## Comprehensive information on oriented samples

Various nanomaterials, such as extruded polymers, bone or tendon samples and fibers, exhibit oriented structures. Their anisotropic structure leads to scattering at certain angles.

**VarioStage** allows you to precisely position samples at different inclination angles relative to the incident X-ray beam. This allows you to obtain the complete scattering behavior of oriented samples as well as comprehensive information on their nanostructure.

## Autosampling and nanography

The screening functionality of **VarioStage** increases sample throughput as it allows you to automatically measure up to 16 solid samples (films, powders).

Alternatively, **VarioStage** can be applied for exact sample positioning to scan the structural map of up to 16 samples (nanography).

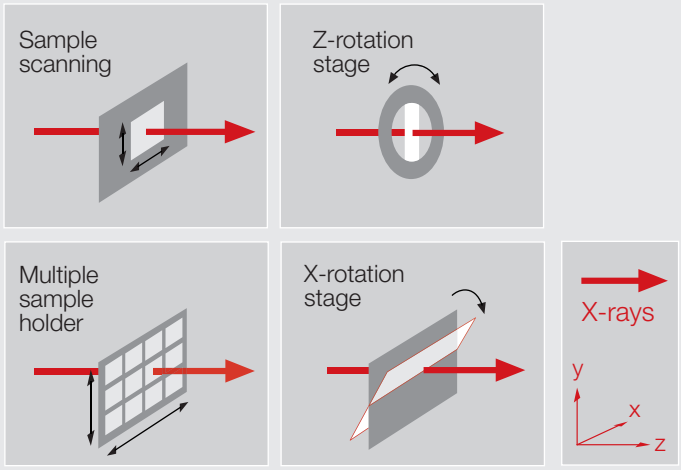
## Transmission and reflection studies

Thin-film samples exhibit a distinct scattering behavior depending on the tilt angle relative to the incident X-ray beam.

With **VarioStage** the samples can be precisely rotated in order to measure in both transmission and reflection mode. This allows you to investigate the bulk structure and the surface structure of the sample in the nanometer scale.

## Features and benefits

- Fully automated measurements of multiple solid samples
- Structural mapping of materials (nanography)
- Multi-directional sample positioning of oriented materials and thin-film samples
- Sample rotating and tilting with high precision
- Transmission and reflection SWAXS studies
- Combined nanostructure analysis of sample bulk and surface




## Technical Specifications

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| **X-Y translation stage**<br>Table top for various sample holders | - Samples up to 22x30 mm²<br>- Multiple sample holder for up to 12 sample slots of size 5x5 mm² |
| **X-rotation stage**<br>Tilting solid film samples relative to the beam axis | - Film samples up to 9x20 mm²<br>- Unlimited tilting angle from 0 to 360° |
| **Z-rotation stage**<br>Rotating fibers and films around the beam axis | - Fiber length >15 mm, film samples between 11x11 mm² and 21x21 mm²<br>- Unlimited rotation angle from 0 to 360° |

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**Instruments for:**

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| Density & concentration measurement | Colloid science |
| Rheometry and viscometry | High-precision temperature measurement |
| Sample preparation | Refractometry |
| Microwave synthesis | Polarimetry |
| | X-ray structure analysis |



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