



**Anton Paar**

::: Innovation in Materials Science



## TS 600 Tensile Stage

The TS 600 Tensile Stage is a completely new, advanced sample stage for in-situ X-ray investigation of stress/strain phenomena in fibres, foils and thin films. The stage can be used in transmission and reflection mode on synchrotrons and commercial diffractometers alike.

**Gain new insights into the world of strain and stress!**

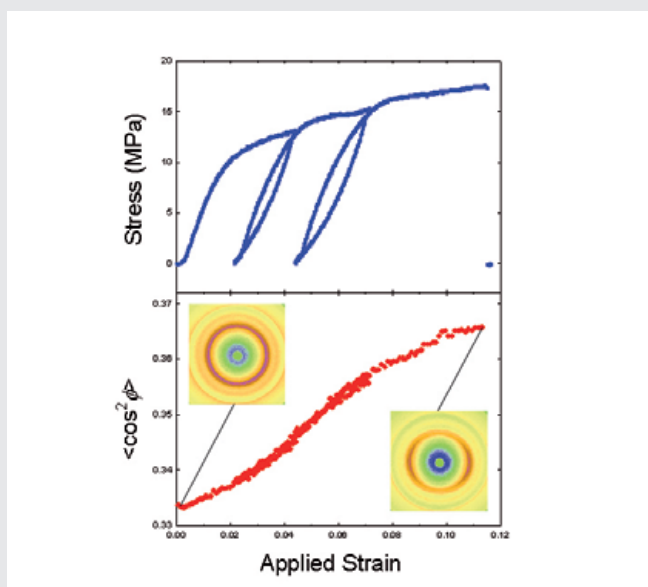
## Exploring the world of mechanical properties

With TS 600 Tensile Stage, Anton Paar widens the range of non-ambient sample stages for XRD to the field of in-situ studies of mechanical material properties. TS 600 is the first commercial sample stage designed specifically for in-situ X-ray investigations of structural changes in materials under mechanical load. Because of its compactness and low weight, the instrument can be used on synchrotrons as well as on laboratory X-ray diffractometers. And what's more, it can be operated in transmission- and reflection mode.



## A strong midget

Despite its small size and low weight, TS 600 can strain samples with a force up to 600 N. Two load cells are available: A low-range, high-resolution one up to 5 N and a full range load cell from 1-600 N. The cells can be easily exchanged and the cell type is automatically detected by the instrument. The force range of 600 N allows investigations on a variety of samples like fibres, foils, thin sheets, etc



## Easy access to complex information

TS 600 comes with user-friendly software for stage control and data acquisition. Elongation- and force-controlled straining makes it possible to program complex load profiles, including cyclic straining and creep experiments. The data can be viewed on-line in different representations and exported in various formats.

## Features and Benefits

- ▶ Simultaneous straining and X-ray diffraction
- ▶ Measurements in transmission- and reflection geometry
- ▶ Large force range with high resolution
- ▶ Precise measurement of force and elongation
- ▶ Various sample types like fibres, foils, thin sheets, etc
- ▶ Small and light-weight
- ▶ For synchrotrons and commercial X-ray diffractometers
- ▶ User-friendly control and data acquisition software

## Technical Specifications

Measuring method		Transmission & Reflection	
Angular range (reflection geometry)	Psi	$\leq 20^\circ$ to $90^\circ$ (depending on phi)	
	Theta	$\leq 20^\circ$ to $90^\circ$ (depending on phi)	
	Phi	$0^\circ$ to $\pm 180^\circ$	
Force range	5N load cell	0.05 to 5 N	
	600N load cell	1 to 600 N	
Speed range	0.05 to 5 mm/min		
Displacement resolution	0.005 mm		
Crosshead travel	25 mm		
Sample dimensions		L	min 30 mm
		W	max 15 mm
		T	max 2 mm

## Dimensions | Weight

Diameter	155 mm
Total height	48.5 mm
Height of sample above base plate	36 mm
Weight	1.3 kg

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### Instruments for:

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

Specifications subject to change without notice.

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