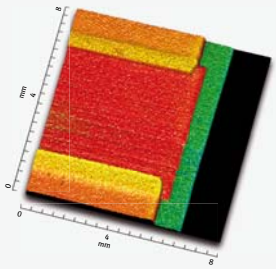
Used in many sectors

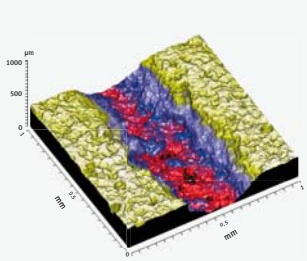
- Medical Technology
- Semiconductors
- Photovoltaic
- MEMS
- Optics
- Automotive

INDUSTRIE PREIS 2008

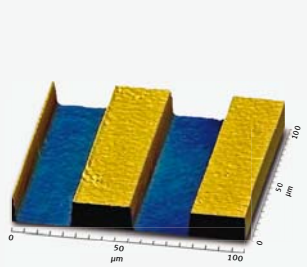
Awarded with the „Industry Prize 2008“



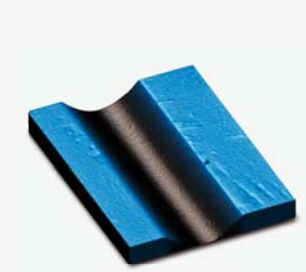
Back side metallization of a solar wafer



Groove in wafer polishing disc



Precision linear measuring scale made of glass



Groove calibration standard

The FRT MicroSpy® Topo is the cost-efficient confocal microscope for fast and contact-free surface analysis

Application Versatility

The confocal measuring principle which comes to use in this system is an established, contact-free approach for the analysis of roughness, contour and topography in a multitude of lab and production control scenarios.

- Measurement of rough, reflective and transparent surfaces
- High angular acceptance
- Stitching mode for measuring field enlargement

Fast and Intuitive Operation

Beside superior precision, also high measuring speed and intuitive operation are important objectives during the development of FRT measuring tools. This way the user is able to quickly conduct productive analyses and reports.

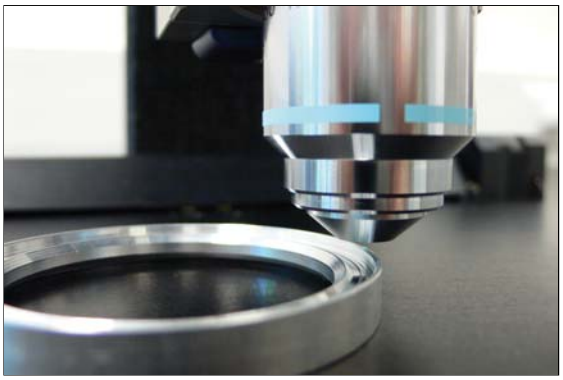
- Acquisition of high-resolution measuring data in five easy steps
- Typical measuring times of only a few seconds

Highly Productive Hard and Software

The scope of delivery consists of the measuring system with a motorized x,y stage for sample positioning, a high-performance PC with TFT display and an operation manual.

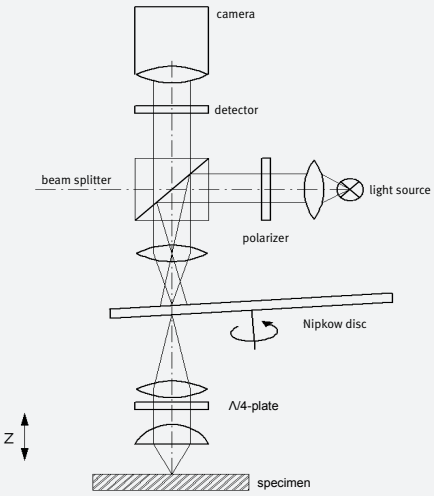
Remarkable in this class of confocal microscopes is the use of high-quality granite for the entire system. This way we ensure, just like with all FRT products, a maximum of structural and thermal stability.

- Outstanding height resolution in the nanometer range
- Excellent depth-of-focus, sharp imagery at any focal position
- Long-lasting and low-maintenance LED light source
- Complete software package for data acquisition, analysis and reporting



The MicroSpy® Topo stands out due to its high angular acceptance and its ability to perform on rough, reflective and transparent surfaces.

Detailed Information



Measuring Principle

The light of a high-performance LED is focused by a movable lens on an object's surface, then reflected and finally captured by a detector. If the object is out of focus, its illumination and image on the detector are blurred, which results in a very low output signal.

Once the object's surface is in the focus of the light beam, a maximum signal is received. Very precise information on the height can be obtained by gradually moving the focal point (lens) in z-direction.

This punctiform principle can be extended into a field of view method by the use of a rotating Nipkow disc which distributes the incident light beam line by line over the object's surface with high speed to measure 3D topography, structure and roughness.

Measuring System	
System Design	base and sensor-mount made of high-quality granite
Sample Positioning	high-precision stage with joystick control, travel range 100 x 100 x 30 mm (x,y,z)
Footprint	570 x 400 x 730 mm (h,w,d)
Total Weight	125 kg (screw-on transport handles included)
Power Supply	100-240V, 50-60 Hz, 25 VA

Objectives [1]	10 x	20 x	50 x	100 x
Measuring Range (µm)	400	400	400	400
Working Distance (mm)	1	1	1	1
Resolution z (nm)	10	3	2	1
Resolution x, y (µm)	1.98	1	0.396 / 0.42 [2]	0.198 / 0.37 [2]
Measuring Field (µm)	1520 x 1140	760 x 560	304 x 228	152 x 114
Numerical Aperture	0.5	0.75	0.8	0.9

Software Package	
Data Acquisition	fast measurements in just 5 steps, typical measuring time of a few seconds, stitching mode
Data Analysis (FRT Mark III) [3]	analysis of profile, topography, roughness, step height as well as many 2D and 3D filter and evaluation routines
Reporting	customizable reports, customizable input fields for adding additional information to reports from user input
Languages	German / English

[1] Scope of delivery includes 1 objective of choice

[2] Geometric / optical (Rayleigh Criterion)

[3] **Export file formats:**
ASCII, Autocad DXF, CSV, BMP, JPG, PNG, TIF

Learn more:
http://www.frt-gmbh.com/topo

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