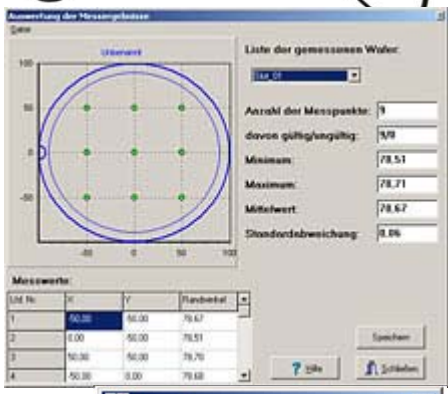
OEG
Optik
Elektronik
Gerätetechnik

SURFTENS automatic

Fully automatic contact angle and free surface energy measuring instrument

Features

The contact angle measuring system **SURFTENS-automatic** is designed for use in semiconductor industry and research, in particular for process control of wafer coating and in the photolithographic process.
It is characterized by the following features:
- fully automatic contact angle mappings
- space-saving construction
- motorized x/y stage for automatic specimen positioning
- motorized, automatic dosing unit
- automatic drop placement
- software controls fully automatic measuring sequence
- comfortable documentation of the measuring results in protocols and in the video images
- calculation of free surface energy from contact angles of up to 5 test liquids

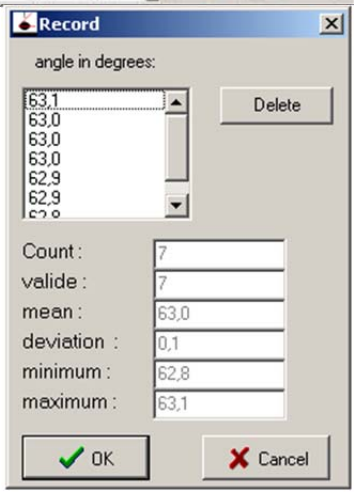


Fastest measuring of contact angle and homogeneity

SURFTENS automatic has been specially developed for use in clean-rooms where it excels due to small size, short cycle time and simple operation.
The stepping motor driven x/y-stage allows the contact angle measurement on any point on the wafer quickly. SURFTENS measures the homogeneity of surface properties in only a few seconds. Print-out of the measuring results is just as simple and fast, and data can be transferred to QA software or configured for other formats.

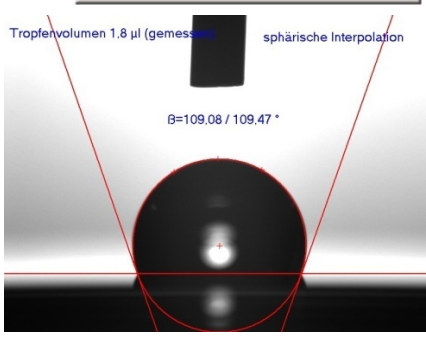
Highest accuracy with automatic measuring functions

The drop of measuring liquid is produced by the built-in, automatic dosing unit (drop volume freely definable). The image of the drop appears immediately as a high-quality, live video picture on the PC screen. Measuring is started by a single keystroke. The software determines the contact angle and immediately presents it graphically as with numerical data included. Fast measuring times of only 1 second per drop exclude errors. **SURFTENS-automatic** guarantees highest reproducibility and measuring accuracy combined with ease of operation. In the case of poor contrast images, a manual measuring function can be used.



With SURFTENS you solve your adhesion problems

Surface free energy (SFE) of substrates and layers used in semiconductor technology can be investigated by contact angle measurement. Measuring the contact angle allows you to quickly optimize new process steps as well as to better standardize known processes. Small changes in the surface property of wafers are seen as large, easily detected changes in the contact angle.
A small investment of time used to measure the contact angle can give a large return by avoiding later production problems. To reduce defect density and feature sizes of resist structures <1µm a good adhesion of the resist is necessary. By help of contact angle you can control the adhesion very easily.



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Technical parameters

Specimen table (standard)	SURFTENS-AUTOMATIC (200 x 200) mm
Specimen thickness	max. 5 mm
Measuring range contact angle	1°....180°
Resolution / accuracy contact angle measurement	±0,05°/ ±0,5°
Optics (standard)	fixed magnification with motorized focussing
drop placement	automatic set down on the specimen surface
Camera (standard)	b/w USB camera 1 MPixel
Tilt of measuring optics	0°-2°, adjustable
Dosing unit (standard)	Automatic, motorized, software controlled single dosing system
Reproducibility of drop volume	±0,1 µl
Software	SURFTENS M for Windows
Light source	homogen light pad, adjustable brightness
Computer	Standard-Windows-PC according state of the art

This features are for the standard equipment and can be adapted to other technical requirements.

Other contact angle measuring equipment for semiconductor industry

SURFTENS HL
SURFTENS HL is a manual contact angle measuring system for Si-Wafers.
It can be equipped with a motorized dosing unit.

SURFTENS WH 300
SURFTENS WH 300 is a fully automatic contact angle measuring system with 300mm-wafer handling robot and loadport.
It can measure automatically all wafers of a loadport. The number of loadports without refill of the syringe depends on the drops per wafer. The syrings has a volume of 10ml.

SURFTENS WH 300 is the master tool for contact angle measurement in 300mm wafer technology.