OEG
Optik
Elektronik
Gerätetechnik

SURFTENS HL 200

Professional testing of wettability of wafers in semiconductor technology

The ideal solution for semiconductor technology

The modification of the wetting behavior of silicon wafers (for example HMDS coating) is a standard process step in the semiconductor technology. For process characterization, adjustment of technological parameters and tool control it is therefore absolutely necessary, to measure the contact angle as measure of surface free energy (SFE) objectively and accurately after the modification processes.

SURFTENS HL 200 with manual dosing unit

For this purpose a robust and easy to use contact angle measuring instrument is needed. SURFTENSHL was developed in particular to meet the needs in semiconductor technology.

SURFTENS HL is featured by

- compact, space-saving and closed mechanical basic setup;
- high quality measuring objective with fixed focus;
- USB 2.0 digital camera 1,3 MPixel;
-optics and camera are both integrated in the closed housing, protected against disadjustment;
- homogene, bright LED-illumination, brightness adjustable;
- manual measuring table, 200mm diameter, teflon-coated with:
-- manual positioning in x- and phi-direction
-- wafer can be placed by vacuum tweezers
- stroke of wafer table: 100mm,
- rotation of table: 360° (each point on the wafer is accessible for contact angle measurement)

SURFTENS HL 200 with motorized dosing unit and motorized drop placement, both motorized movements are software controlled

In connection with the software »SURFTENS« the contact angle and, if required, the free surface energy of solids can be measured. The comfortable documentation functions are a powerful help in quality assurance and research.
Basically the measuring software SURFTENS makes possible the fully automatic measurement of the contact angle of a sessile drop by different fitting methods of the drop shape. The drop is automatically detected by image processing methods. In case of critical contrast situation, the software offers additional options for the drop detection like the manual setting of the baseline and the completely manual measurement of the contact angle by setting of measuring points on the monitor.
The software contains an evaluation module (theory by OWRK / Wu) for computation of the free surface energy of solids from the measured contact angles of up to 5 measuring liquids.
Very helpful is the possibility of the acquisition of AVI-files from the live video stream. All measuring- and documentation functions are afterwards applicable to the complete film or any single image of the film.
The measuring results can be stored comfortable in protocols or the video image.

Operation