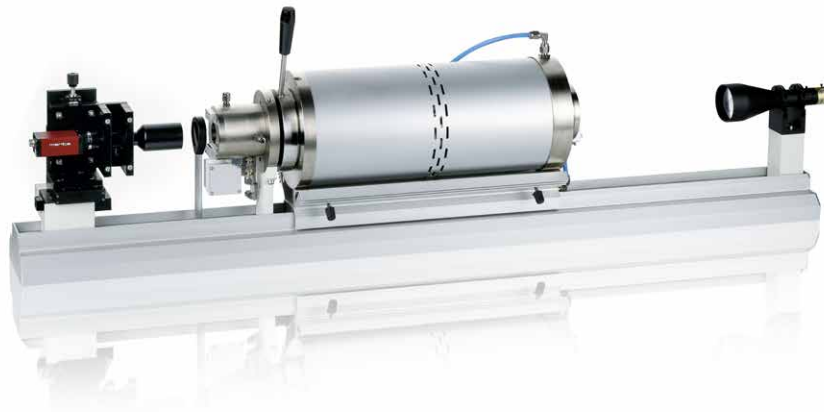


Drop Shape Analyzer DSAHT



Get deep insights into the thermal behavior of materials

Our Drop Shape Analyzer – DSAHT goes to the extreme when it comes to wetting and deformation analysis of melts and combustion residues. With temperatures up to 2000 °C in a various range of atmospheric conditions, the instrument analyzes melting solids and helps to understand the interactions that occur when melts come into contact with solid material. This knowledge supports you in optimizing combustion, firing, or coating processes in order to create stable end products, save energy during the process, or prolong the service life of your furnaces.

Tasks and applications

- Measuring adhesion and wetting of metal slags in smelting plants
- Detecting reactions between the glass and refractory bricks in glass production
- Optimizing wetting of the carrier material by enamel coatings
- Investigating the changes of the green body depending on temperature and time in ceramics production

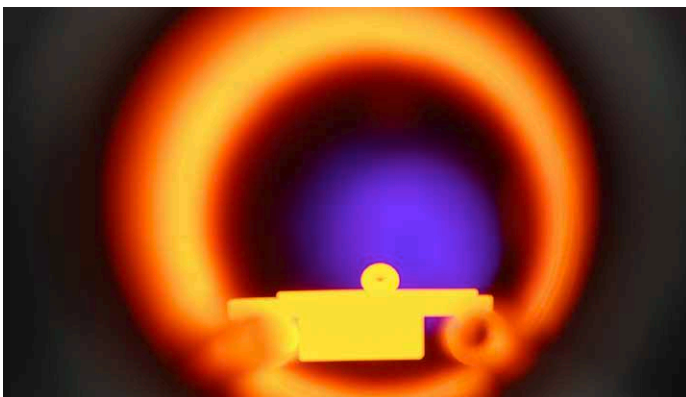
Measuring methods and options

- Contactless wetting analysis using contact angle measurement at temperatures up to 2000 °C
- Observing and recording material deformation as a function of temperature and time
- Measurement in oxidizing or reducing atmosphere, under inert gas, or in vacuum

Wetting analysis using precise contact angle measurement

The DSAHT optically determines the contact angle between a liquid and a solid as a direct measure of wetting. Moreover, the surface tension of the hot liquid can be calculated from the curvature of the drop.

The instrument is equipped with a high-resolution camera, which records the sample while being heated up. With special filters that shield the light emitted by glowing materials, a clear shadow image is achieved, ensuring precise contact angle measurement.



DSAHT heating chamber



Easy sample loading into the chamber

Contactless method for undisturbed sample analysis

Loading the furnace with the sample is a matter of seconds thanks to the easy handling of the sample holder. Due to the contactless nature of video analysis with no mechanical stress applied, the shape of the sample only depends on chemo-physical alterations with respect to time and temperature, which are both assigned to each camera image. The powerful image analysis of the ADVANCE software documents exactly what happens with your sample when heated up.

Specifications

Camera system

Connection ethernet

Illumination

Type halogen, telecentric

Temperature control

Heating elements SiC, MoSi₂, graphite
 Measuring system Al₂O₃, graphite
 Range up to 2000 °C

Temperature measurement

Accuracy ± 2.5 °C

Vacuum control

Final value down to 10⁻⁵ mbar

Contact angle

Range 0 to 180°
 Resolution 0.01°