

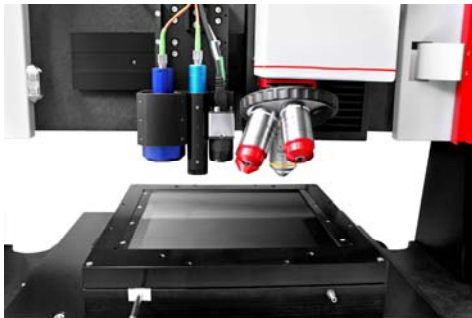
## Press Release

Bergisch Gladbach, 27/05/2015

# Topography measurement under thermal load

FRT 3D surface metrology tools now optional with heating chamber

In the field of electronic components or in the semiconductor industry it is important to determine the surface topography of components under thermal load. Wherever several materials are combined, it is possible that under thermal load tensions and stresses occur. Undesired deformations arise and in extreme cases the various expansions of the materials can lead to cracks in and between the individual components. To determine shape retention and sample distortion at different temperatures, FRT now provides the MicroProf® series of 3D surface metrology systems with a heating chamber. Such a chamber allows highly accurate temperature control of measurement objects across a range of -80°C to 400°C with an accuracy of up to 0.001°C and a stability of about +/- 0.05°C.



In this way, measurements can be carried out at a constant temperature as well as during a temperature ramp. The heating chamber is available in different sizes and is simply attached to the sample table of the MicroProf®. Additionally, the heating chamber contains a control unit to regulate the temperature as well as a glass sample cover. The latter ensures that the measuring device's sensors still work accurately, despite extreme temperature fluctuations in the heating chamber. The chamber can be cooled using different media and operated using different ambient media. Distortion of a sample based on thermal impact, as well as shape retention under the influence of defined ambient temperatures can now be determined with the help of FRT products.

This is increasingly required, especially in the area of 3D IC.

### **Fries Research & Technology GmbH – the art of metrology**

Fries Research & Technology GmbH (FRT) supplies 3D surface metrology for research and production. With micro- and nanometer resolution, the non-contact and non-destructive measuring systems which have received many awards, measure optionally fully automatic data, topography, structure, step height, roughness, wear, thickness variation, film thickness and many other parameters.

More than 500 units are in use worldwide in companies from the automotive, semiconductor, optical, solar/photovoltaic and other sectors. FRT maintains subsidiaries in the USA and China as well as a sales and service network in the USA, Asia and Europe.



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