3D InCites Award for FRT
MicroProf® - FRT GmbH is voted as "Equipment Supplier of the Year".

The company with headquarters in Bergisch Gladbach, Germany, was honored with this title by 3D InCites on March 7th. 3D InCites was asking to vote among 40 nominees from 26 companies and 4 research institutes competing in 9 categories for this award. The competition was fierce. Over 40,619 online votes, more than twice the number of last year’s event were logged.

The MicroProf®, third generation of surface metrology tools from FRT, combines multi-sensor technology and hybrid metrology in one measuring system. The MicroProf® uses optical multi-sensor technology to measures the topography and the total thickness or the film thickness of samples without contact. The MicroProf® is the ultimate solution for surface metrology and can perform a wide range of measurement tasks quickly, efficiently and intuitively.

Dear business partners,
You have real challenges on your product surfaces? There is nothing to worry about - we will take care of it. The horizon of measurement tasks is growing every day and so are our experts relentlessly developing and qualifying new solutions for our customers' metrology tasks. We analyse your requirements in the most diverse fields of application and expand and improve our products and services accordingly. With our multi-sensor concept and hybrid metrology, we can also perfectly meet high customer demands. In order to satisfy all production requirements, the automation of our systems is adapted to the most diverse target industries. For example with the possibility to measure overlay, which is especially important in the semiconductor industry for the production of 3D ICs (see below). Again we could show our solution competence. Furthermore, a lot has happened in our company since the relaunch. We have expanded our production facility in Bergisch Gladbach along with our international sales and service network. These and other exciting new things can be found in the current headline. We wish you a lot of fun in reading and a successful business year!

Kind regards,
Thomas Fries
ACQUIRE AUTOMATION XT – NOW EVEN MORE FEATURES

Our efforts towards constant improvement of in-house operating software of our systems also lead to regular upgrades and new possibilities for our automation software Acquire Automation XT. This not only concerns the individual evaluation packages, but also the basic package. We would like to introduce some new features here:

NEW "LAYER MODE" FOR FIELD OF VIEW SENSORS

Transparent layers impose challenges in the daily business of topography measurement. In order to get the desired result, one has to make sure that the topography data is taken from the “right” surface.

The new “Layer Mode”, available for the CFM, CFM DT and WLI FL sensors is a giant leap forward in this difficult subject and provides the perfect solution for many different applications. The special software feature is able to distinguish between the reflections coming from the different surfaces. By the use of a graphic interface, the user is given the possibility to sort and filter the signals from the multiple surfaces and define the output of the relevant data. These settings can also be adjusted for previously measured data, i.e. a re-measurement is not required.

The “Layer Mode” can be used, e.g. to measure the topography of a poorly reflective transparent layer, while ignoring the signal from the highly reflective substrate underneath.

As a further benefit, for materials with a known refractive index, the sensor can also be used to directly determine the thickness of a transparent layer.

HYBRID METROLOGY

Semiconductor, MST/MEMS/Nano, Sapphire/LED and for many others – the demand for 3D surface measuring devices is enormous and is constantly growing due to new technologies and applications.

The components and measuring applications are becoming more and more complex, so that certain measuring tasks often cannot be solved by one sensor alone, as the desired parameters are not directly accessible. Multiple sensor configurations can help to measure all relevant sample properties that require a solution of the task. Depending on the task, this may include measurements with different topography and (film) thickness sensors and also different analysis of the single results. To get to the desired output value, the individual results need to be combined in order to get the desired final result. This approach is referred to as ‘Hybrid Metrology’.

Acquire Automation XT allows to combine outcome from different measurements/evaluations in a subsequent hybrid analysis where the previously measured individual values are used to calculate new result parameters. The hybrid analysis tool is designed to be very flexible. Besides basic calculation functions like subtraction or multiplication it even allows for complex arithmetic operations. Setup of the hybrid analysis is easily done in dedicated dialog where all input values and the output value(s) with its specific calculation formula(s) are defined. Once set up, the hybrid analysis can be applied in a fully automated measuring process.

ACQUIRE AUTOMATION XT PACKAGE FOR OVERLAY MEASUREMENT

Nowadays 3D IC production consists of a sequence of steps, where, for instance, a new material layer is often placed on the existing structure. In this way, transistors, contacts, etc. are built up both laterally and vertically. Any kind of misalignment can cause short circuits and connection failures. In order for the final device to function correctly, these separate patterns must be aligned with the highest accuracy.

A new software package for Acquire Automation XT offers fully automated measurement and analysis of the overlay offset in x- and y-direction as well as the rotation of microstructures. The function can be used on high resolution camera images as well as FRT’s field of view sensors like the CFM (DT).

This software feature combined with FRT’s powerful sensor range efficiently helps manufacturers of modern 3D IC components to improve processes and increase production yield.
Research project TRACE - the successful cooperation of FRT GmbH, Chemnitzer Werkstoffmechanik and Fraunhofer ENAS within the TRACE consortium is being continued. With the completion of the integration of the microDAC TL sensor into the FRT measurement software, our MicroProf TL is ready for the market. The tool enables the measurement of vertical and lateral deformation of components under thermal load.

DO YOU ALREADY KNOW OUR METROLOGY TUESDAY?

Every Tuesday afternoon is Metrology Tuesday on our LinkedIn and Twitter accounts. Here, we use pictograms and measurement graphics to explain a particular measurement challenge that was solved using FRT tools. The clear examples help illustrate how FRT products work. Feel free to comment on these tweets and ask questions. Follow us on Twitter (www.twitter.com/FRTmetrology) or LinkedIn (www.linkedin.com/company/frt-gmbh). The interesting articles on different types of metrology are explained in detail in our FRTent. In this way, we also provide non-specialists the chance to read their way into the world of metrology and to be always up to date.