

Release: No. 773, Nov 19, 2019

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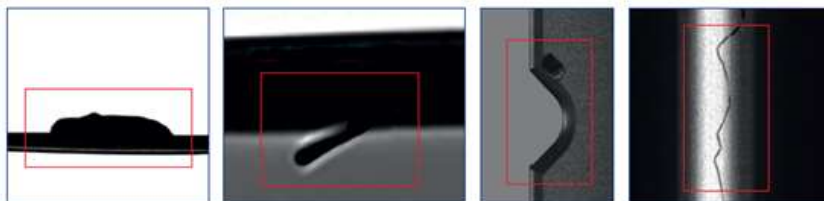
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Achieve 100% objective and reliable results and sort critical material

Inside – Surface – Edge: Wafer inspection during wafering and BEOL

ISRA VISION introduces inspection systems that perform surface, edge, and inside bulk material wafer inspection during the entire manufacturing process. By preventing the processing of defective material, the systems enable both, increasing yield and lowering costs. As an additional option, the sensors can be integrated into existing process tools and used during wafering and at the back end of line processes. In doing so, customers avoid expensive machine downtime.



Whether cracks, scratches or chippings – the module allows edges to be inspected in parallel to other process steps.

Today, the quality of wafers is often only checked at the start of production. However, the many processing steps put the material under a great deal of stress, particularly at the edge, and often cause quality issues. High-speed surface inspection of the wafer front, back, edge, and inside bulk is an efficient solution to this problem. This is necessary as chips getting thinner, for use in modern IT and consumer electronics products, and therefore becoming more vulnerable.

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Devices such as smartphones are gaining more functions, yet the amount of space for the hardware is limited. To meet the simultaneously increasing quality requirements, continuous inspection is required as early as possible during manufacturing.



CrackScan identifies micro-cracks at the earliest possible stage.

Customized deployment for critical process steps

ISRA VISION's EdgeScan can be used as a standard product throughout the entire process and for every type of wafer (3"-12" wafers). The solution complies with the SEMI standard interface and is ready for flexible integration. It is compatible with all common process tools and also available as a retrofit solution for existing machines. The sensor unit can be deployed in an individual manner depending on where in the process the components are under the most stress. During pre-adjustment, a line scan camera checks the edge of the wafer simultaneously from three sides. Its multiview technology, in which a prism deflects the image by 45 degrees, creates three views, allowing the component to be viewed from 360 degrees even at cycle times of just a few seconds. This kind of inspection is a result of the

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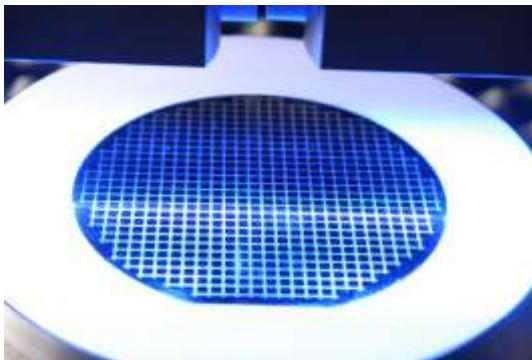
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new realization that problems often begin at the edge. Defects there can cause cracks and breaks. EdgeScan now allows the edge to be monitored throughout the entire process. ISRA's solution complements conventional AOI systems that use matrix cameras with a limited field of vision and only inspect the surface, thereby enabling a complete inspection.



Keep the quality of wafer surfaces under control with high-precision surface inspection with SurfQScan – from wafer processing to the back end.

The high quality is guaranteed throughout the entire process. For instance, CrackScan identifies micro-cracks at the earliest possible stage and lays the groundwork for high-quality wafers and later chips. SurfQScan detects even the finest scratches on the polished, reflective surface of the finished wafer. And DicingScan enables inspection immediately following dicing, thereby covering a further process step that was previously not monitored sufficiently. The ISRA portfolio of products for inspecting semiconductors supports maximal customer satisfaction through the very highest quality.

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DicingScan enables inspection immediately following dicing.

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