Polytec

Press Release

Date:	August 2021
Enclosure:	pic.
Reference:	PR-0029-CPE-100821-MSA-

MSA-650 IRIS Micro System Analyzer to measure encapsulated MEMS in final state

New IR-optical measurement solution for analysis of dynamic response of capped microstructures

A comprehensive characterization of the dynamics and mechanical response properties of microstructure devices is crucial for design and development, troubleshooting and FEM validation of micro-electro mechanical systems (MEMS). Therefore, Polytec's MSA Micro System Analyzer series provides fast, accurate and non-contact, optical testing capabilities of MEMS like intertial sensors, MEMS microphones, pressure sensors and more. The MSA is a dedicated microscope-based laser Doppler vibrometer with an integrated stroboscopic video microscope, allowing to measure both the in-plane and out-of-plane motions of MEMS. Now, the new MSA-650 IRIS Micro System Analyzer allows even measuring through intact silicon caps on encapsulated microstructures in a final state.

With silicon being transparent in the near infrared spectrum above wavelengths of 1050 nm, the underlying technology of infrared-interferometer-based vibration measurement opens up the possibility for inspecting encapsulated MEMS for authentic and most representative analysis results. The brand new, patented interferometer technology from Polytec now delivers supreme data quality due to superior separation of individual device layers in the Si-capped MEMS devices. With a dedicated SWIR camera and a low-coherence SLD source the MSA-650 IRIS is the worldwide first measurement system with this technology to visualize the Si-encapsulated devices. It measures in-plane vibrations with a resolution down to 30 nm and real-time out-of-plane vibrations up to a 25 MHz frequency range and with picometer resolution and below.

Inspect entire samples by optical scanning through intact silicon caps under operating conditions. The MSA IRIS measurement technology provides superior data quality due to clear separation of individual MEMS device layers. Whether automated in-line testing at wafer-level or in the laboratory, contact Polytec for a detailed description of your measurement requirements.

Find further information:
https://www.polytec.com/eu/vibrometry/products/microscope-based-vibrometers/msa-650-iris-micro-system-analyzer

Pictures: Polytec

Publication free of charge

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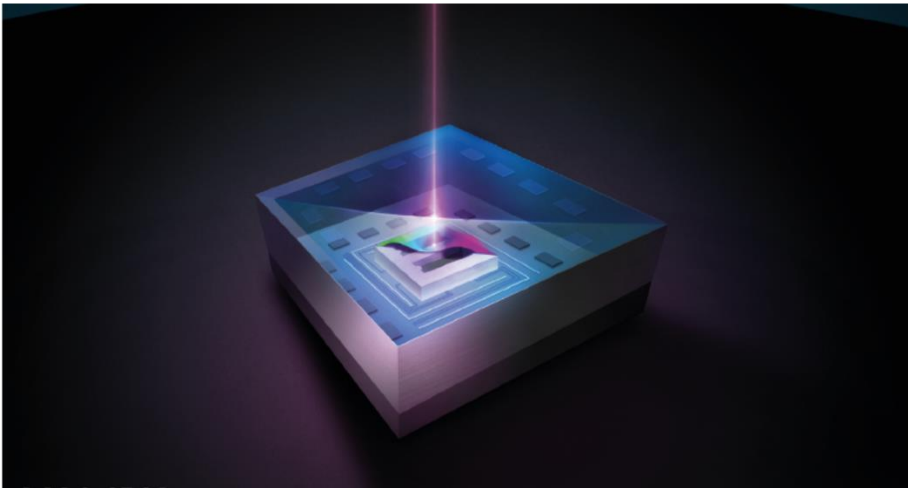

EN: New laser technology MSA IRIS measures dynamics inside capped MEMS

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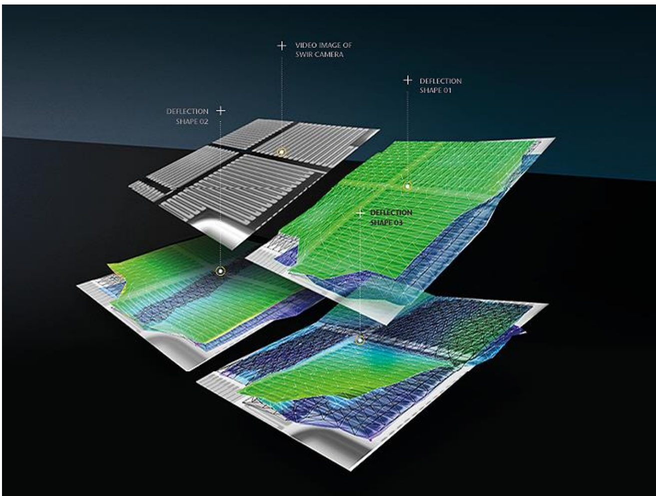
EN: MSA-650 IRIS Micro System Analyzer is the turnkey optical measurement solution from Polytec for areal scanning through capped MEMS



EN: Pure SWIR camera image of 2-axis accelerometer (FHG ENAS) and its operational deflection shapes at different frequencies

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EN: Planar motion analysis detecting the in-plane motion with up to 50x zoom for a detailed view on capped MEMS

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