



MSA IRIS

Optical vibration measurement and modal testing inside encapsulated MEMS

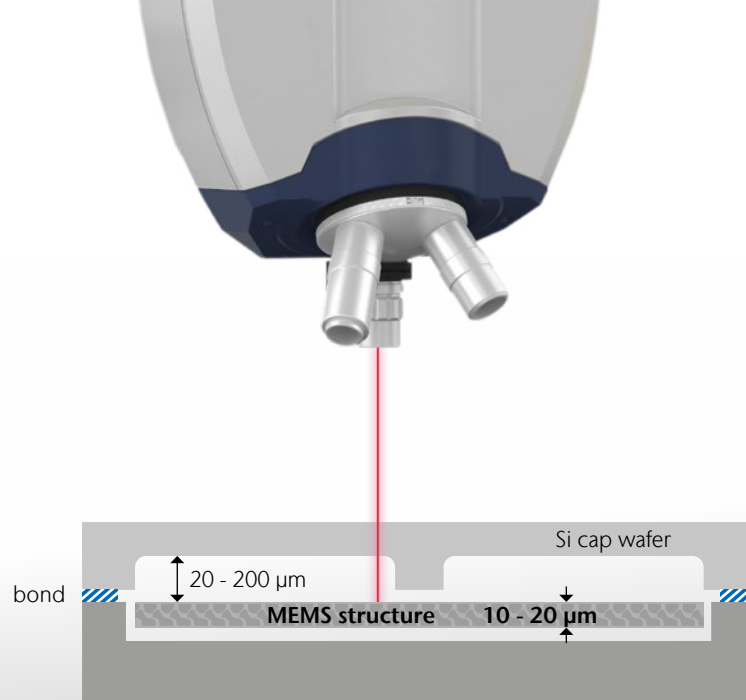
For encapsulated MEMS – modal testing and optical vibration measurement



Laser Doppler vibrometry (LDV) is a well-established technique to study the mechanical dynamics of MEMS with utmost precision. Most laser vibrometers work at visible wavelengths for which the silicon encapsulation is opaque and inhibits MEMS inspection. Thus, LDV testing of such MEMS via visible wavelengths requires either un-encapsulated MEMS or to decap the device.

However, the step of MEMS capping in fabrication processes may result in additional stress, which might alter the device performance. Therefore, a comprehensive characterization of the MEMS device in its final and encapsulated state is indispensable.

As silicon is transparent in the near infrared spectra above wavelengths of 1050 nm, the underlying technology of infrared-interferometer-based vibration measurement opens up the possibility for inspecting of encapsulated MEMS for authentic and most representative analysis results. Polytec's brand new, patented state-of-the-art interferometer technology now delivers supreme data quality due to superior separation of individual device layers in the capped MEMS devices.



Highlights

- Ask for our PolyXperts measurement service, using this patented, cutting-edge laser technology for immediate analysis w/o investment
- Superior separation of individual device layers in capped MEMS delivers the true dynamical MEMS behaviour
- Extracting real motion data even from complex-structured Si-capped MEMS
- High resolution modal data up to 25 MHz for straightforward FE model validation of MEMS in final state
- Integrated high performance IR microscope allows for measuring through SI walls
- Video microscope measuring mode revealing in-plane motion up to 2.5 GHz
- Standard data export formats for modal data, graphics and video for direct post-processing
- Free ScanViewer and desktop software for viewing and sharing measurement results

For comprehensive and representative analysis of capped MEMS, contact us.

Our PolyXperts are looking forward to receiving your capped MEMS sample for modal testing, feasibility studies and consulting throughout all phases from development over prototyping to manufacturing of your encapsulated micro-structures.

Step ahead without risk – go for a free try

Please contact your PolyXpert
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