



SEAL SP16 – WAAVE WAFER LEVEL AUTOMATIC ACOUSTIC VERY HIGH RESOLUTION CHARACTERIZATION

AT A GLANCE

Assessment of acoustic
characterization tool
Development of new methods
for analysis of buried layer
and substrate parameters

SEAL SP16 – PARTNERS

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Advances in WAAVE

- Evaluation of an innovative acoustic microscope applying multiple transducers inside an automated 200/300mm device.
- Increasing the frequency results in an improved resolution capability since the frequency is one of the most important parameters impacting the spatial resolution.
- Using longitudinal, transverse and surface wave modes, the estimation of mechanical properties of bonded interfaces and defect analysis. The technology enables progress in 3D integration.
- Independent GHz kit available for high resolution SAM studies.

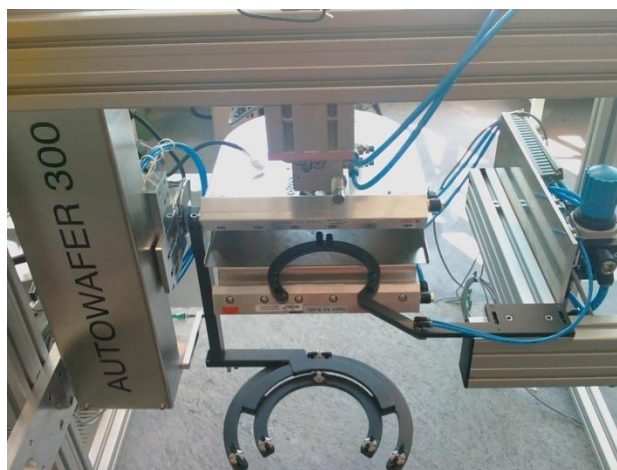


FIGURE 1: WAAVE prototype



Semiconductor Equipment Assessment Leveraging Innovation



SEAL PROJECT – BULLETIN

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Project Results

The aim of WAAVE was the development of an innovative acoustic characterization tool for wafer level inspection (200/300mm) providing a very high resolution capability. Additionally a novel characterization method has been developed containing the capability of detecting and characterizing mechanical properties of buried layers and interfaces. The main target was the inspection of 3D integrated devices and monitoring during the entire integration process (various bonding steps and stacking, etc.). The development of the acoustic inspection tool combines several imaging and analysis approaches based on the propagation of alternative acoustic wave modes. Besides a pure qualitative evaluation of defects a quantitative estimation of mechanical substrate parameters is achieved.

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