

ABSTRACT**THICKNESS MEASUREMENT TECHNIQUE FOR MULTI-LAYER
THIN FILMS AND SUBSTRATE SIMULTANEOUSLY BASED ON
HYBRID TECHNOLOGY**

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Most of the single optical measurement technologies or tools are facing challenges in retaining the accuracy and precision in surface characteristic measurements of micro/nano sized holes, vias and trenches with high slope sidewalls and narrow openings. To overcome these
10 limitations, a novel hybrid surface measurement tool has been introduced by integrating multiple measurement principles or technologies into one hardware setup incorporated within one optical illumination and detection hardware. Here the integration is done by the combination of confocal microscopy (CM), through focus variation microscopy (TSOM) and focus variation (FV). A simple algorithm can be used to fuse the data from each pixel point
15 which is most suitable for the particular position dynamically. The tool will provide wide applications in the field of surface characteristic measurement of micro/nano level holes, vias and trenches with high slope sidewalls.

Figure 1