



*Thin Film Measurement solution
Software, sensors, custom development
and integration*

TOUCH SCREEN SAMPLE MEASUREMENT

Touch screen sample: glass with ITO layer and photoresist spots (grid pattern) was measured using MProbeMSP Vis system. This system is a thin-film measurement microscope that allows measurement of thicknesses in 10nm -20 μm range in the small areas (down to 4 μm) and includes camera for visualization and navigation to the measurement site.

Photoresist spots were $\sim 15 \mu\text{m} \times 15 \mu\text{m}$ (Fig. 1). The measurement was done using a 40x objective that gives effective measurement spot size of $\sim 10 \mu\text{m}$.

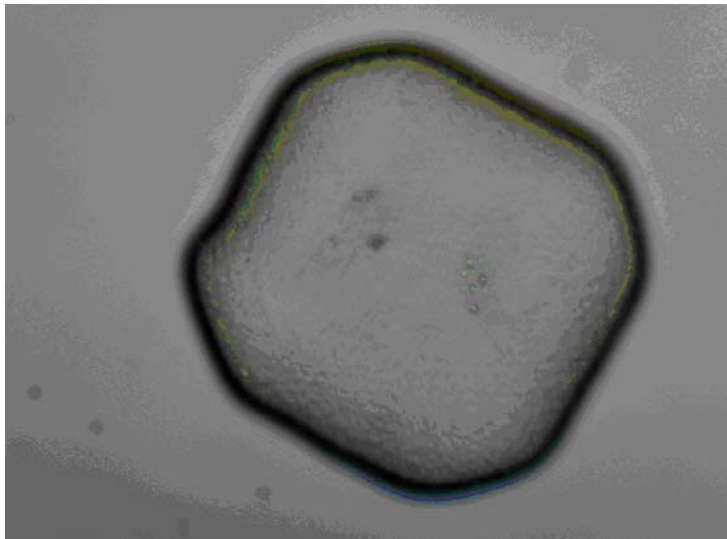


Fig. 1 Photoresist spot (15 x 15 μm) viewed with 40 x objective

Photoresist's refractive index dispersion was represented using Cauchy approximation (effective R.I. ~ 1.65). Reflectance measurement data (Fig. 2) was analyzed using thick film algorithm (Fig. 3). PR thickness is in 3 -4 μm and using thick -film algorithm is preferable since, in this case, ITO layer effect does not need to be taken into account.

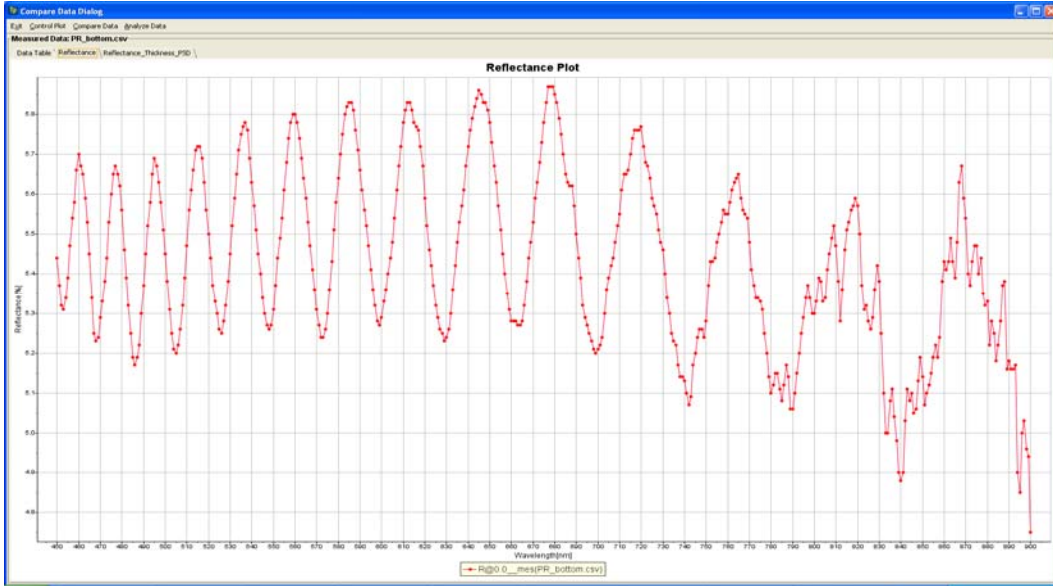


Fig. 2 Reflectance spectra at photoresist spot.

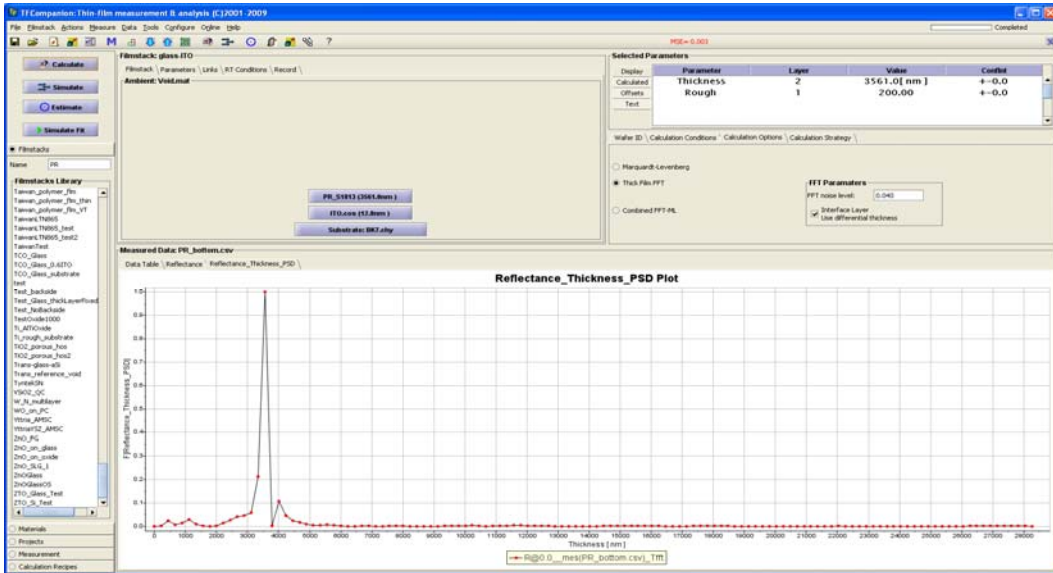


Fig. 3. Thick-film data analysis results (using reflectance spectra Fig. 2). The presence of the 3.56 μm photoresist layer is clearly identified by the sharp peak.

ITO layer thickness was measured separately, at the clear area near a photoresist bump (Fig. 4)

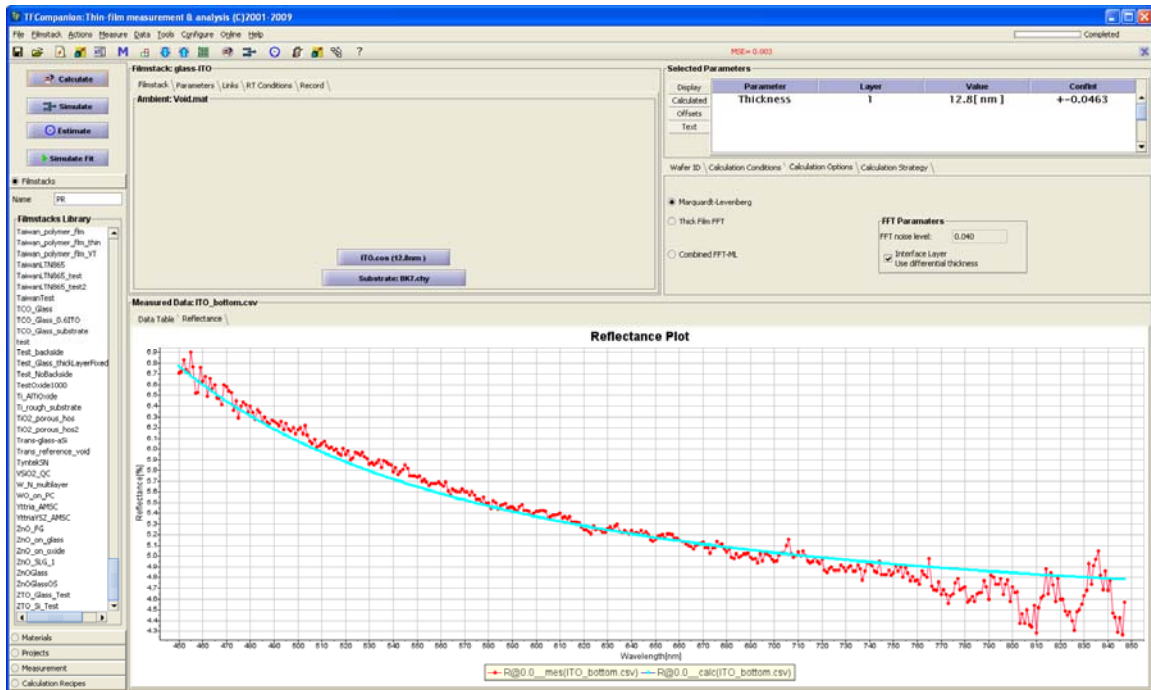


Fig. 4 Measurement of the thin ITO layer (12.8nm)