



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

LUBRICANT ON STEEL MEASUREMENT

I. SUMMARY

Steel sample with lubricated surface was measured using MProbeVis-Micro with 40um measurement spot size. Measurements were done at 3 points. Dispersion of the lubricant was represented using Cauchy approximation assuming R.I. ~ 1.43 . Steel dispersion was represented using standard library material. Surface of the steel has some roughness/grains that caused light scattering. Effective roughness was determined from the measurement.

The results of the measurements are summarized in the Table I.

Measurement point	Thickness, nm (of lubricant)	Effective roughness, nm
1. (left side)	77	24
2. (right side)	129	34
3. (center)	147	43

Table 1. Results of the lubricant thickness measurement

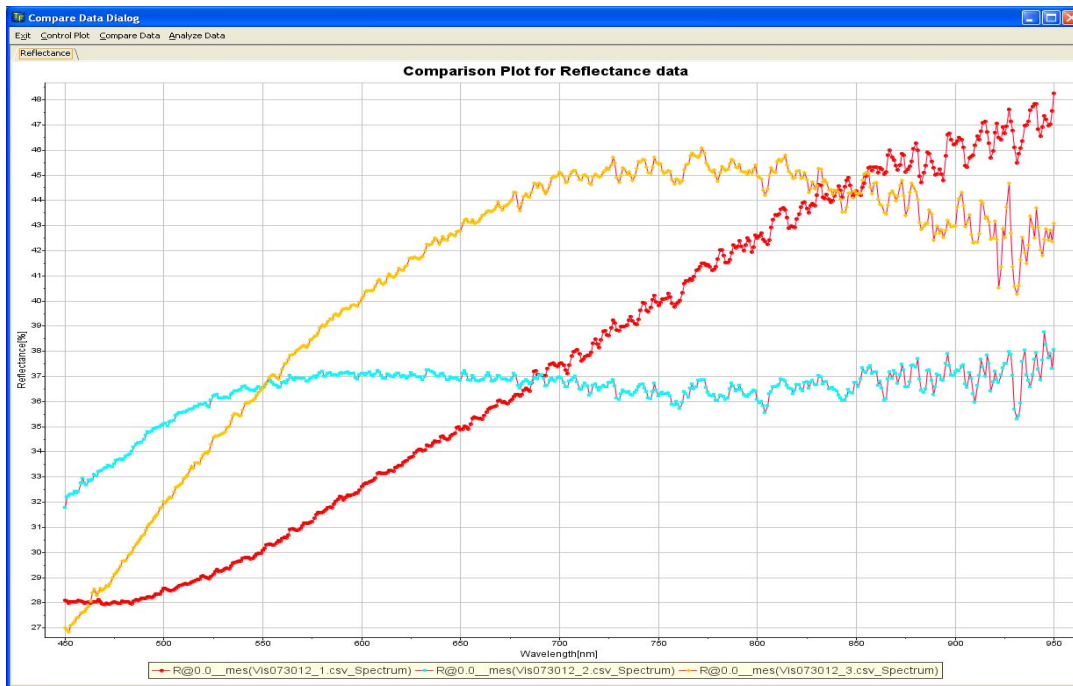


Fig. 1 Measured reflectance spectra at 3 points.

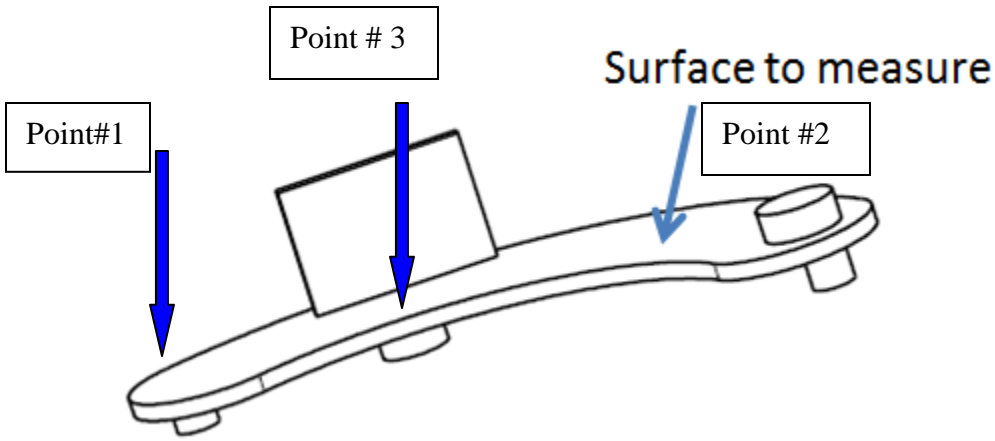


Fig. 2 Measurement points location

II. DETAILS

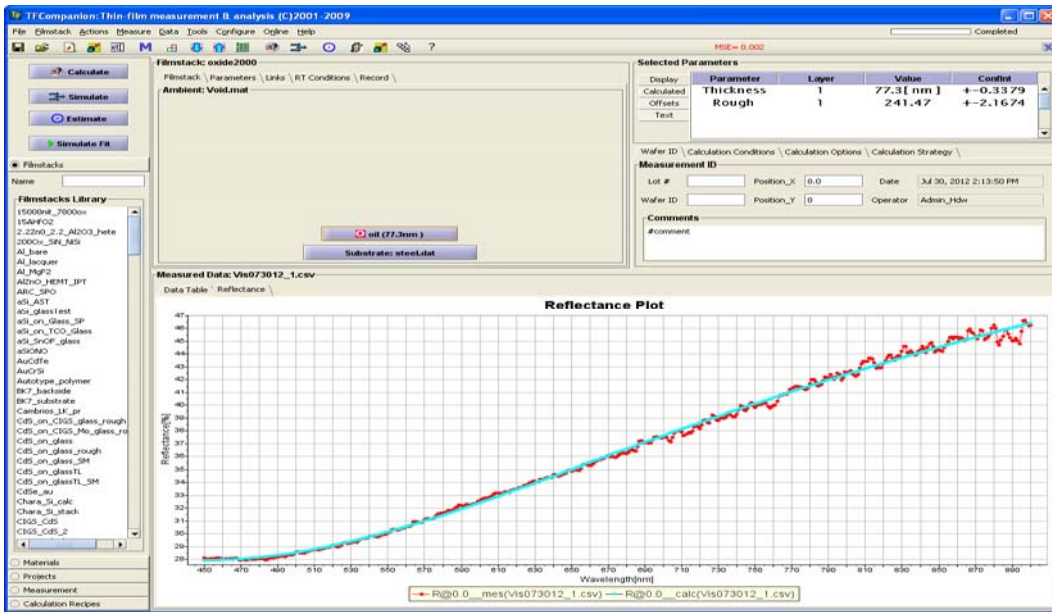


Fig. 3 Point #1 measurement vs. model fit. Measured parameters: layer thickness and surface roughness

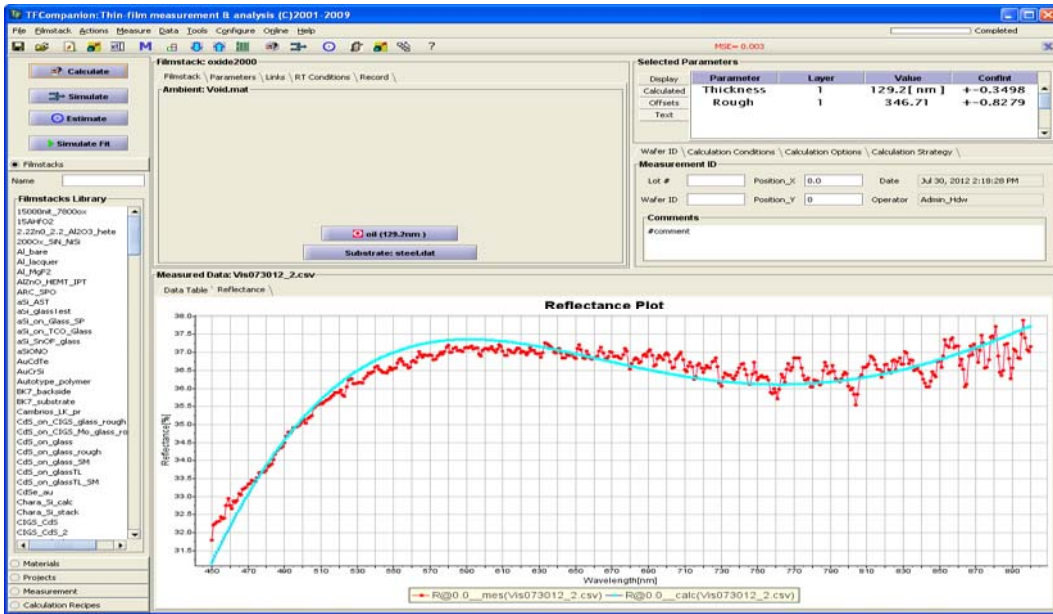


Fig. 4 Point #2 measurement vs. model fit. Measured parameters: layer thickness and surface roughness

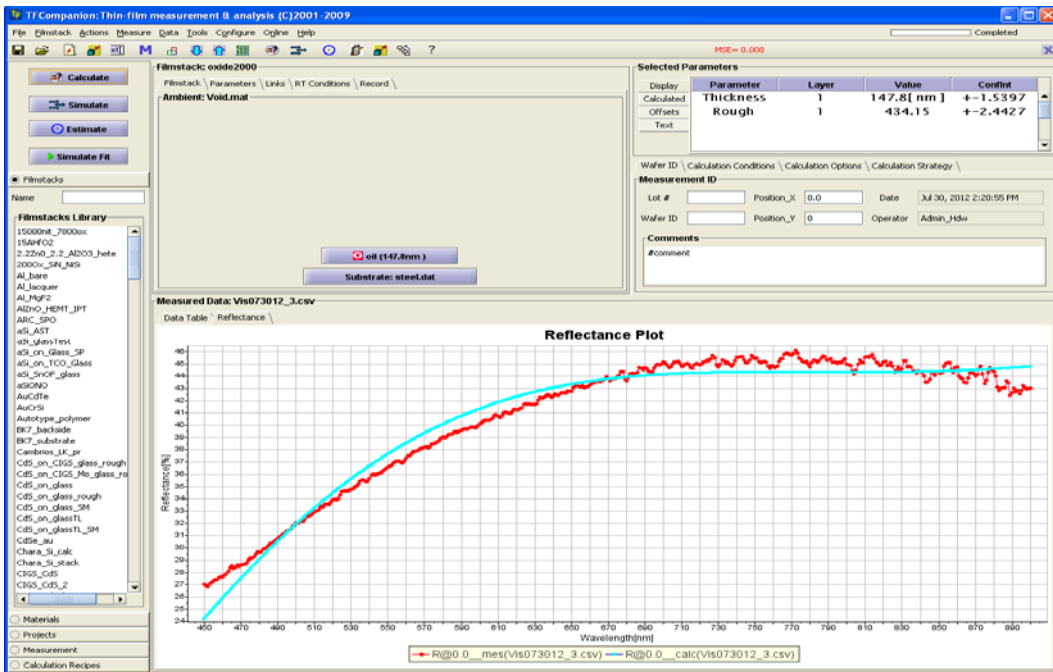


Fig. 5 Point #3 measurement vs. model fit. Measured parameters: layer thickness and surface roughness

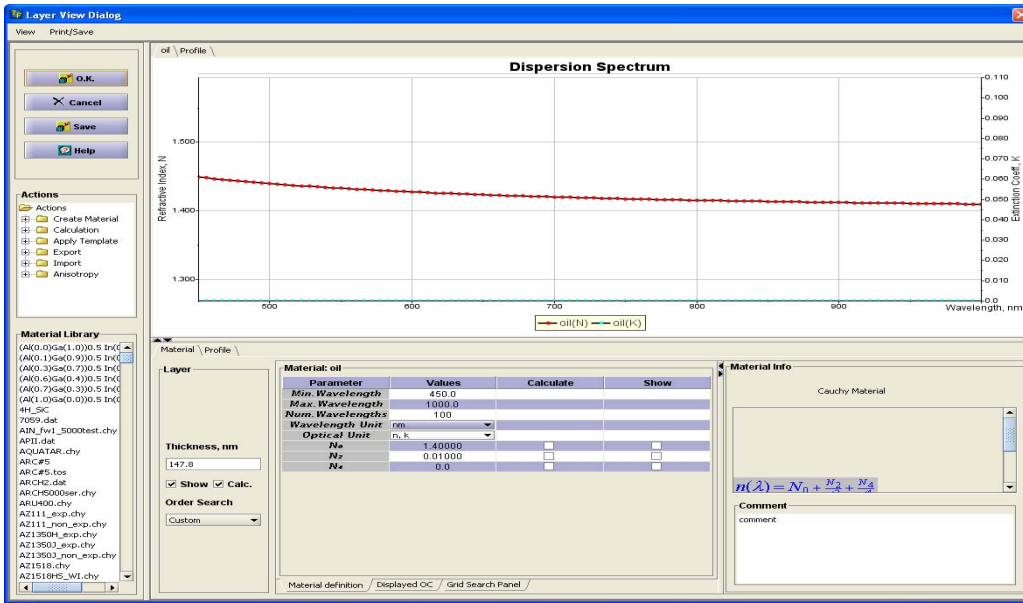


Fig.6 Lubricant dispersion represented using Cauchy approximation