Spectroscopic Ellipsometry (SE 800)

Ellipsometry is a powerful tool for the characterization of thin films and multi-layer structures. Linearly polarized light is reflected from the surface of a material. The reflected light becomes elliptically polarized, the degree of ellipticity being determined by the optical properties of the solid being probed. Film thickness and refractive index of single films and each layer of a multi layer stack can be measured. It is a non-destructive and contact less measurement tool for the characterization of thin film. An optical model and fitting procedure are necessary to obtain film thickness and dispersion of the optical constants n and k.

Specifications:

- **Spectral range**: 240nm - 930 nm
- **Incident angles**: 40° - 90°, 5° steps, generally kept at 70° fixed
- **Parameters can be extracted**: Thin film thickness, Refractive index, Uniformity of films and layer stacks

Capabilities:

- **Substrate used**: Si substrate or transparent substrate like Glass
- **Sample size**: minimum 1cm* 1cm, maximum 6 inch wafer
- **Thickness**: Minimum 1-2 nm, maximum 100 microns