RhySearch
Das Forschungs- und Innovationszentrum Rheintal

ELLIPSOMETER

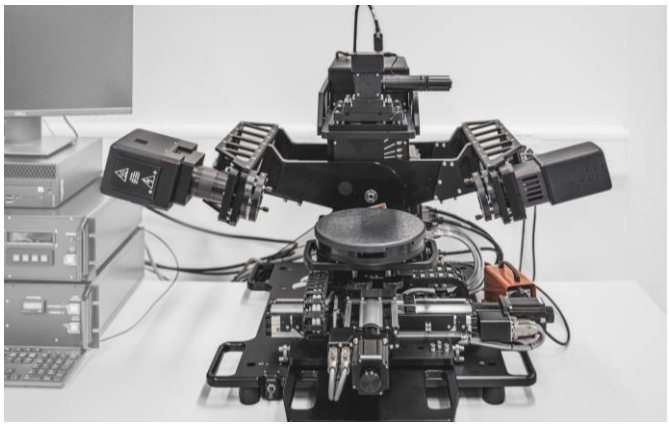
SPECTROSCOPIC ELLIPSOMETER

Thickness and optical constant measurement of thin film coatings

Ellipsometry uses polarized light to characterize thin film and bulk materials. It measures the changes in polarization of the incident light due to its interaction with the sample structure. The measurement is typically expressed as two values: Psi (Ψ) and Delta (Δ). The measured data is then analyzed to determine material properties of interest.

Most commonly the ellipsometer is used to measure film thickness, refractive index "n" and extinction coefficient "k". It also permits the determination of other material properties such as composition, crystallinity, conductivity, anisotropy, surface and interfacial roughness – based on the changes induced in the optical constants.

One advantage of the setup at RhySearch is the capability to automatically map the properties of wafers up to 200mm in diameter. For example, one can then plot the uniformity of the thickness and the refractive index over the whole wafer surface.

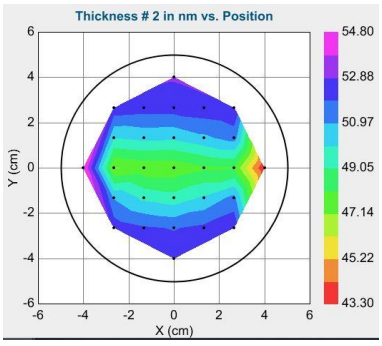


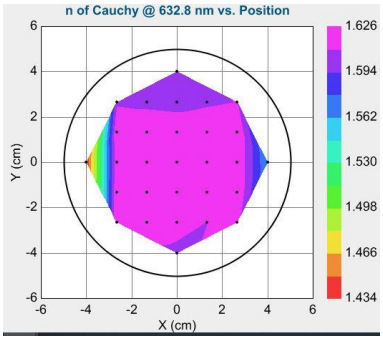
Wavelength range
211nm – 1698nm

Thickness Measurement range
1 nm to 1 mm

Test conditions
In Cleanroom
Max. sample size 8 inch

Standard
-





Thickness and refractive index uniformity mapping of an Al_2O_3 coated 4'' Wafer

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