

Ellipsometry & SPR



DESCRIPTION

Ellipsometry and Surface Plasmon Resonance (SPR), both measure the thickness or refractive index. Whereas, Spectroscopic ellipsometry (SE) and SPR can both determine thickness and refractive index.

The main difference comes from the samples that the techniques can work with, which is given by the optical set-up of the two.

ELLIPSOMETRY

- In ellipsometry, the collected light travels through the sample and its air/liquid environment
- Ellipsometry works the best with very flat and very well reflecting substrates
- In traditional ellipsometry, the optical parameters d or n need to be known
- Ellipsometry is well suited for measurements in air
- There is only 1 channel (channel volume is 1 mL, which makes biological experiments too expensive and without a reference channel difficult to validate)

SPR

- SPR measures from the back of the sample (the collected light does not travel through the sample or the air/liquid environment)
- SPR uses simple substrates with at least one plasmonic layer
- SPR utilizes the Plasmon, which enhances sensitivity of the method especially for metals
- SPR can determine both d and n
- SPR is suited for measurements in gas or liquids
- 2 channels enable easy referencing (channel volume is 1 μ L)