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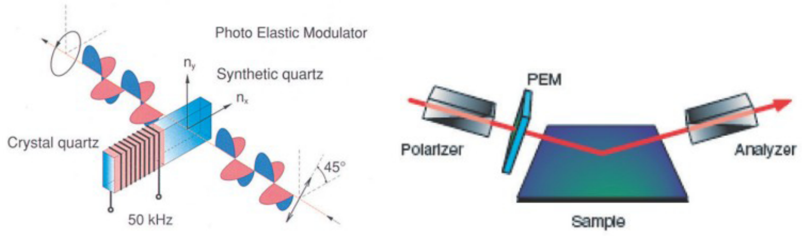
# 橢圓儀
# Ellipsometer

## M-220 / M-550 Ellipsometer

Ellipsometry is a method for determining the refractive index and extinction coefficients of a sample by measuring the change in polarization state of surface reflected light. Film thickness and optical constants of an adsorption layer or oxide film on a substrate surface can be determined with exceptional sensitivity. Conventional interference spectroscopy utilizes light passed through separate optical paths, while ellipsometry is a form of interferometry that uses two vibrational components with the same optical path, providing measurements with excellent accuracy and repeatability.

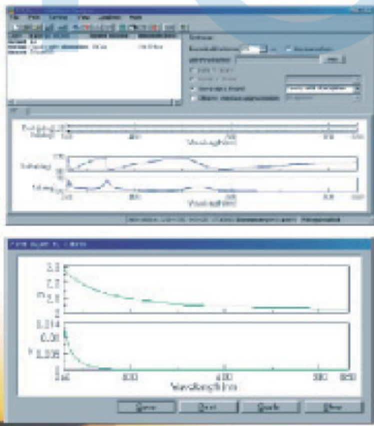


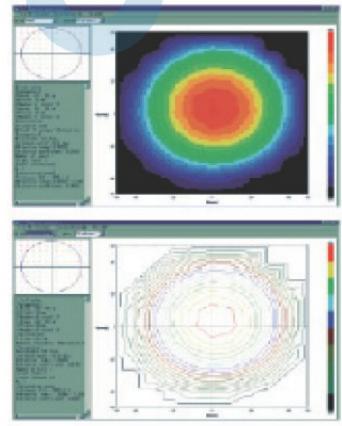

## Multilayer film analysis

JASCO developed a special program for calculating the film thickness and optical constants for each layer of a multilayer film based on the ellipsometric parameters ( $\Delta, \Psi$ ) $\lambda$ =for the material. A multilayer film model is developed for the sample, the film thickness and optical constants optimized to minimize the deviation from the measured values.

## Mapping analysis

The figure shows the thickness distribution of silicon nitride on a four-inch substrate. An average film thickness of 902 Å and a refractive index of 2.01 were obtained. The film is clearly thicker towards the center and thinner toward the periphery.





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