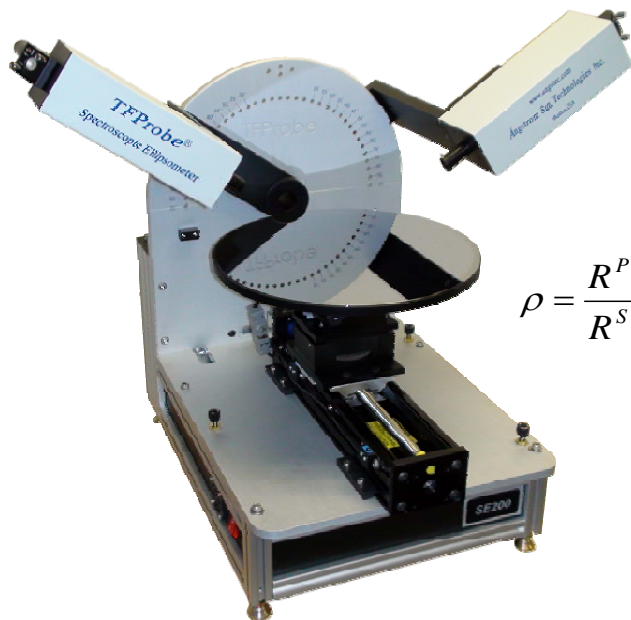


TFProbe[®] SE300BM

Advanced Thin Film Thickness Measurement System



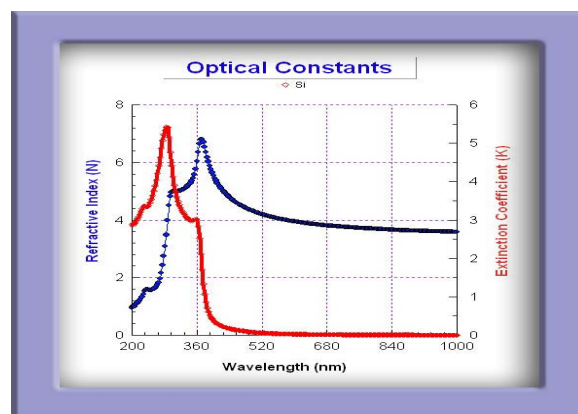
$$\rho = \frac{R^P}{R^S} = \tan \psi \cdot e^{i\Delta} = f(n_i, k_i, d_i \dots)$$

Features

- Low Cost
- Easy to set up
- Easy to operate with Window based software
- Advanced optics design for best system performance
- High Power VIS light source for broad band applications
- CCD Array detector allows for fast measurement
- Measure film thickness and Refractive Index up to 12 layers
- System comes with comprehensive optical constants database and model recipes
- Advanced TFProbe Software allows user to use either NK table, dispersion or effective media approximation (EMA) for each individual film.
- Apply to many different type of substrates with different thickness
- Various options, accessories available for special configurations such as mapping stage, wavelength extension, focus spot etc.

Applications

- Photoresist, polyimide, Oxides, Nitrides
- Optical coatings, TiO₂, SiO₂, Ta₂O₅,.....
- Semiconductor compounds, Cell gaps
- Functional films in MEMS/MOEMS
- Thin film transistors (TFT) stack
- Conductive oxide: Indium Tin Oxide
- Coatings on medical devices
- Amorphous, nano and crystalline films
- Thin Metal Layers



Configuration

- Model: SE300BM-M300
- Detector: CCD-Array
- Light Source: High Power Vis
- Software: TFProbe 3.3
- Angle Change: Manual
- Mapping Stage: 300mm Rho-Theta
- Measurement Type: Film thickness, refractive index, multiple layers
- Computer: Intel Duo Core processor and 19" LCD monitor
- Power: 110–240 VAC / 50-60Hz, 10 A
- Warranty: One year labor and parts

Specifications

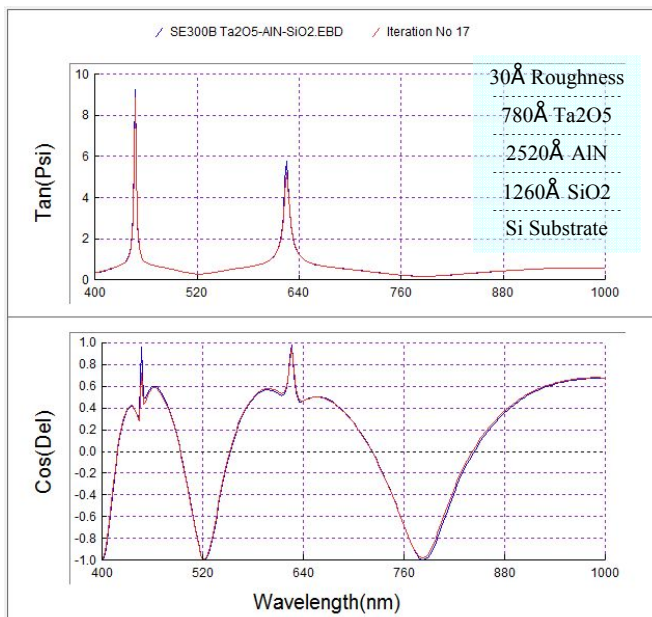
- Wavelength range: 380 to 1050 nm
- Beam Size: 1mm to 5mm
- Sample Size: up to 300mm in diameter
- Measurable thickness range*: up to 20 µm
- Measurement Time: typical 1s /site
- Angle Range: 10 to 90 degree with 5° Interval
- Accuracy*: better than 0.25%
- Repeatability*: < 1 Å (1 sigma from 50 thickness readings for 1500 Å Thermal SiO2 on Si Wafer)

1. System configuration and Specifications subject to change without notice
2. * Film property, surface quality and layer stack dependent
3. Customized system available for special applications
4. TFProbe is registered trademark of Angstrom Sun Technologies Inc.

Structure Setup

Layer ID	Layer Name	Layer Type	Thickness(nm)	Fit	Profile	Iso/Aniso	Group	P. N
Medium	Air.nkt	NK Table		<input type="checkbox"/>	Homog	Isotropic		
Layer 1	Interface	Interface	3.00	<input checked="" type="checkbox"/>	Homog	Isotropic		
Layer 2	TA2O5.nkt	NK Table	78.00	<input checked="" type="checkbox"/>	Homog	Isotropic		
Layer 3	AIN.nkt	NK Table	252.00	<input checked="" type="checkbox"/>	Homog	Isotropic		
Layer 4	SiO2.nkt	NK Table	126.00	<input checked="" type="checkbox"/>	Homog	Isotropic		
Substrate	Si.nkt	NK Table	0.00	<input type="checkbox"/>	Homog	Isotropic		

Fitting Example



Options

- Wavelength Extension to NIR range
- Wavelength Extension to DUV range
- Motorized X-Y Stage for mapping Measurement
- Focused Beam Setup
- Integration of Reflectometer or Microspectrophotometer
- Heating or Cooling Stage
- Real Time Measurement Module for Processing Monitoring Application
- Vertical Sample Mounting Goniometer with Liquid Cell Setup
- Scanning Monochromator for Wavelength to Wavelength Selection
- Compensator for Advanced Applications
- Straight Line Transmission Measurement or Reflection measurement at Variable (Arbitrary) Incident Angles with Configurable Polarizer and Analyzer Positions.....