MProbe UVVisSR

Thin Film Measurement System

It is easy to be an expert with MProbe

Semiconsoft,Inc

Measurement Solutions

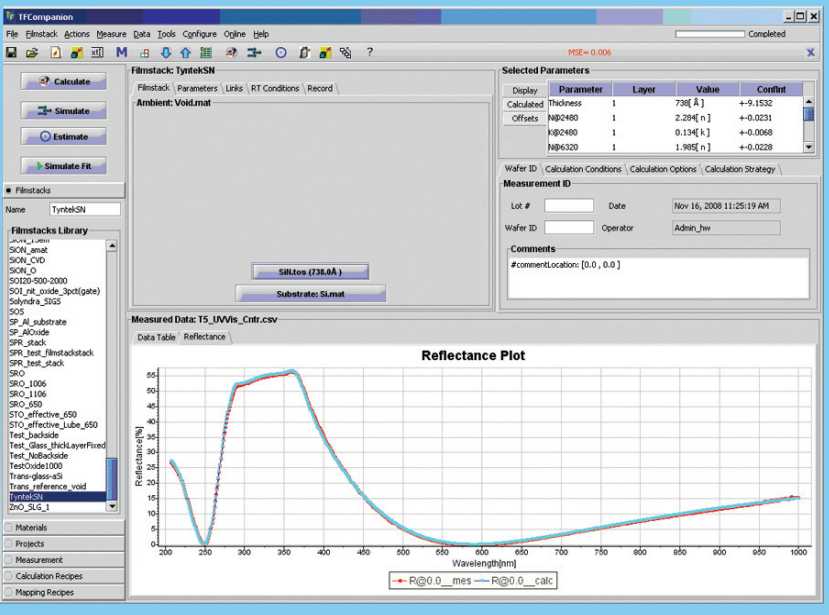
Majority of translucent or lightly absorbing films can be measured quickly and reliably:Oxides,Nitrides, Photoresists, Polymers, Semiconductors (Si, aSi, polySi), Hard coatings (SiC, DLC), Polymer coatings (Paralene, PMMA, Polyamides), thin metal films and many more.

Thickness Range: 1 nm - 50 μm
Wavelength Range: 200nm -1000 nm

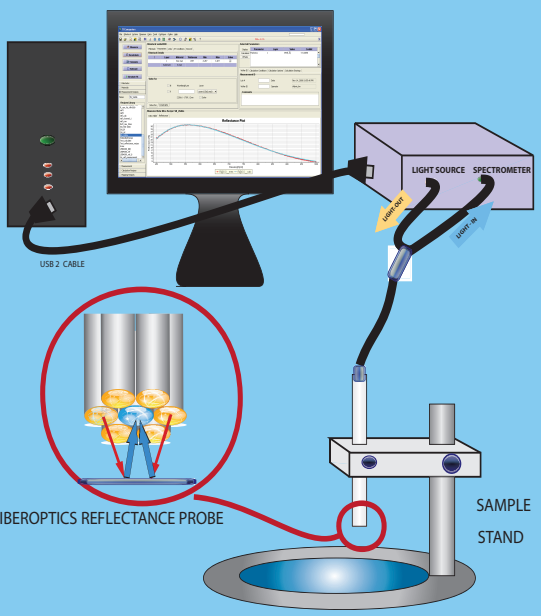
LCD, FPD application: ITO, Cell Gaps, Polyamides. Optical Coatings: dielectric filters, hardness coating, anti-reflection coating Semiconductor and dielectics: Oxides, Nitrides, OLED stack
Real time measurement and analysis. Multi-layer, thin,thick, freestanding and nonuniform layers.

Extensive materials library (500+ materials) - new materials easily added. Support of parameterized materials: Cauchy, Tauc-Lorentz, Cody-Lorentz, EMA
and many more....
Flexible: Desktop or in-situ, R&D on inline. Easy integration with external system using TCP Modbus interface

Measurement: thickness, optical constants, surface roughness
User friedly and powerful: One-click measurement and analysis. Powerful tools: simulation & sensitivity, background and scaling correction,linked layers and materials, multisample measurements, dynamic measurement and production batch processing.



Measurement of 73nm SiN film (Thickness, n&k)
Measure vs. model data

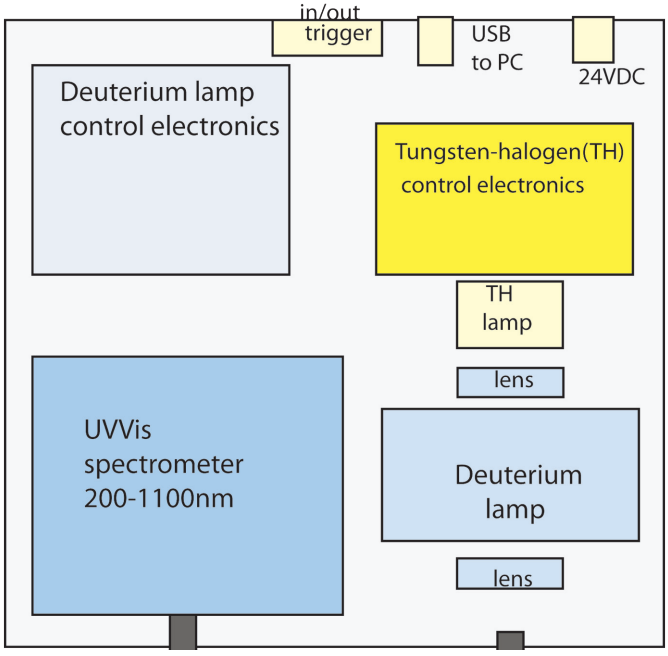


MProbe system diagram

Precision	<0.01nm or 0.01%
Accuracy	<0.2% or 1 nm
Stability	<0.02nm or 0.03%
Spot Size	3 mm standard, down to 3 µm
Sample Size	from 1 mm

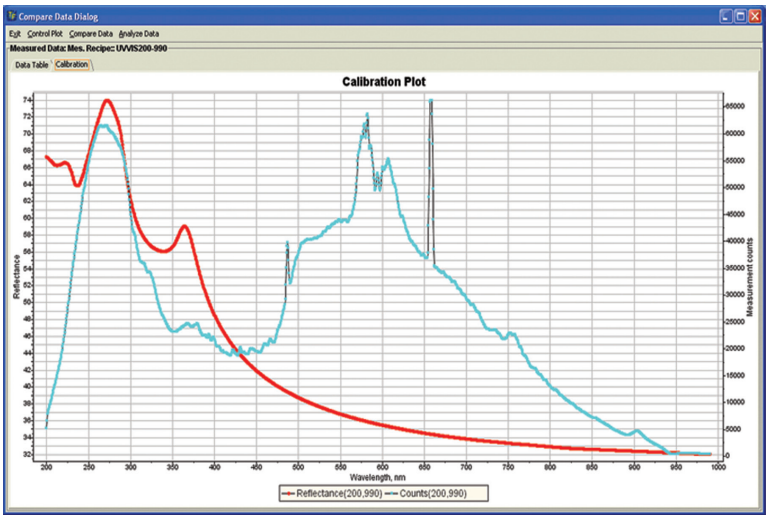
MProbe UVVis system (desktop configuration)

Specification details



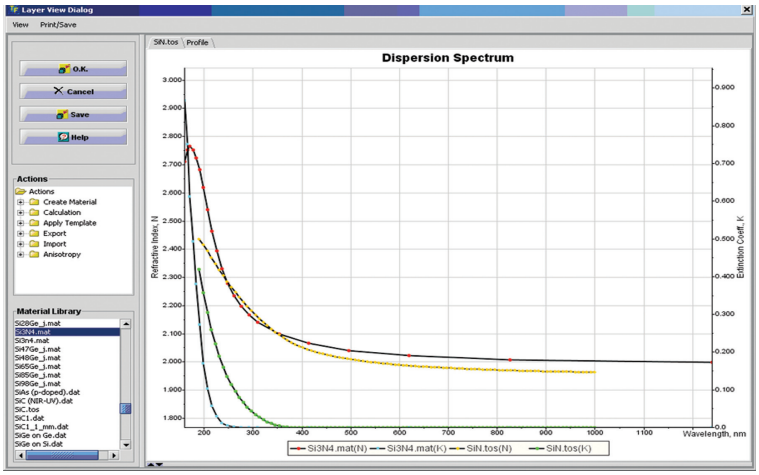
Inside the box

Spectral range (nm)	200-1100
Spectrometer/detector	F4 spectrometer, 3600 pixels Si CCD, 16 bit ADC, 200-1000 nm range
Spectral resolution	<2 nm (standard) <1 nm (option)
Light source	20W Tungsten-halogen lamp,2000hrs 30W Deuterium lamp 2000 hrs
Reflectance probe	Fiberoptics (7 fibers assembly), 400μm fiber core solarization resistant.
Precision	<0.01 nm or 0.01%
Accuracy	<1nm or 0.2%
Weight (main unit)	4 kg
Size (main unit)	8”x 10” x 4” (WxDxH)
Power	100-250VAC, 50/60 Hz 20W



Calibration plot: Si reflectance(red) vs. Intensity(blue). Max intensity: 16 bit. Integration time: 20ms

Options	
-FLUVNIR	UVNIR achromatic triplet lens (CaF2/Quartz). WD:25mm. Spot size: <80μm.
-FLUV	Quartz focusing lens. WD: 35mm Spot size: <0.5mm
-FDHolder	Face-down sample holder.For measurement of transparent and flexible samples
-TO	Transmittance option
-TO Switch	2 channel switch, allows to combine reflectance and transmittance measurement.
-HR	upgrade spectrometer for <1nm resolution
- TR	In/Out trigger 5V TTL. 1 External (in) trigger to start measurement, 6 out triggers
- MOD	remote control (TCP) based on Modbus protocol
- CM	continuos measurement with specified number of measurement and/or delay between them



Measured n,k dispersion of SiN vs. library data. n,k dispersion represented using Tauc-Lorentz model

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