Semiconsoft, Inc
Measurement Solutions

MProbe VisNIR
Thin Film Measurement System
It is easy to be an expert with MProbe

Majority of translucent or lightly absorbing films can be measured quickly and reliably: Oxides, Nitrides, Photo-resists, Polymers, Semiconductors (Si, GaAs, aSi, polySi, etc.), Hard coatings (SiC, DLC, AlN), Polymer coatings (Paralene, PMMA, Polyamides), ITO, Cell Gaps, Alumina, thin metal films(<50nm) and many more.

Specification highlights:

- **Thickness Range: 10 nm - 250μm**
- **Wavelength Range: 380nm -1700 nm**
- **Connection: USB2.0 /1GbE LAN**
- **Data acquisition rate: up to 1.5kHz**
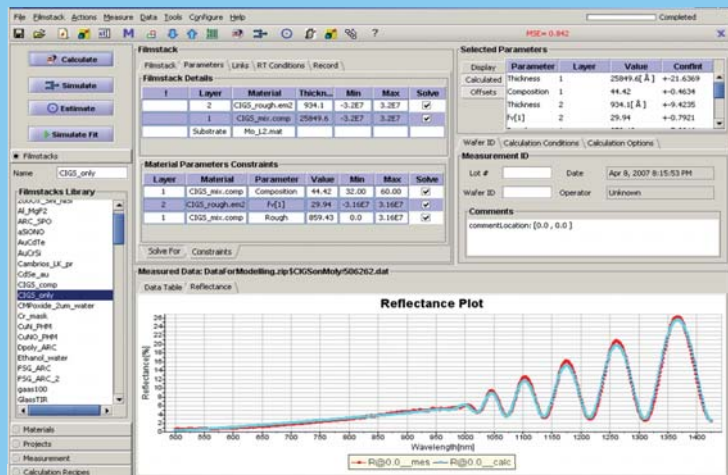- **Minimum measurement time: 10 μs**

Real time measurement and analysis. Multi-layer, thin, thick, free-standing 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....
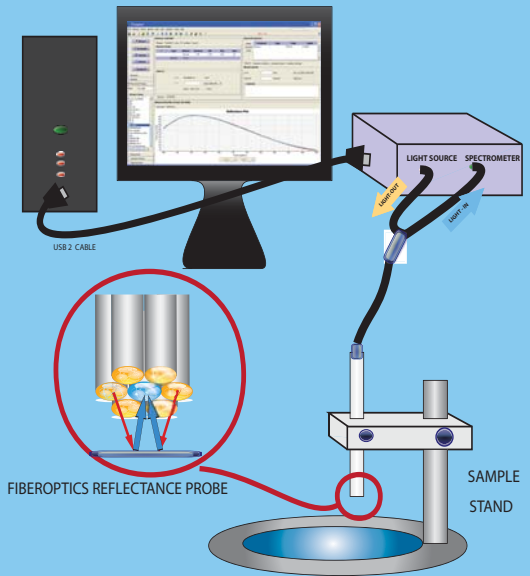
Flexible: Desktop or in-situ, R&D or on inline. Easy integration with external system using TCP-IP. Customization for OEM

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, multi-sample measurements, dynamic measurements and production batch processing.

MProbe system diagram

Precision	0.01nm or 0.01%
Accuracy	0.2% or 1 nm
Stability	0.02nm or 0.03%
Spot Size	<1 mm standard
Sample Size	10 mm - 200 mm (300mm optional)

Measurement of CIGS film on Mo substrate
Measurement vs. model data fit.

MProbe system (desktop configuration)

Specification

MProbe Advantage

- 1 GbE LAN connectivity
- Fast measurement
- Standalone software included
- Remote diagnostics
- Measurement history to recall and display results (plots and statistics)
- Compare and evaluate multiple reflectance/transmittance spectra
- FPGA controlled light source with 10000+ hours lifetime
- Correction options for angle, wavelength resolution and intensity variations
- Clean room class 1000 compatible
- Free software update for 12 months

Included in the Box:
1. Main unit (spectrometer/light source/electronics)
2. Reflectance probe VisNIR
3. Sample Holder SH200A with VisACH focusing lens
4. Calibration set
5. TFCompanion -RA software
6. Power adapter, USB cable

Spectral range (nm)	Vis Channel: 380-1000nm NIR channel: 900-1700nm
Spectrometer/detector	Vis channel: F3 astigmatism-corrected spectrometer, 2048 pixels Si CMOS, 16 bit ADC, 380-1000 nm range NIR channel: F3 astigmatism-corrected spectrometer, 512 pixels InGaAs detector, 16 bit ADC, 900-1700 nm range
Spectral resolution	Vis channel: <1 nm NIR channel: < 3nm
Light source	5 W Tungsten-halogen lamp (Xe filled), CT 2800° Lifetime: 10000 hrs (regulated intensity)
Reflectance probe	Fiberoptics (7 fibers assembly), 400μm fiber core
Precision	<0.01 nm or 0.01%
Accuracy	<1nm or 0.2%
Weight (main unit)	5 kg
Size (main unit)	9"x 12" x 4" (WxDxH)
Power	100-250VAC, 50/60 Hz, 20W

Software options	
-MOD	remote control (TCP) based on Modbus protocol
- CM	continuos measurement with specified number of measurement and/or delay between them
-TCP	TCP server for continuous production line measurement. Customized to requirements.

Hardware options	
-LP500	long-pass filter, limits wavelength below 500nm. Used for photoresist measurement. (other filters available)
-DAC	4 channels DAC board for analog output of the measurement results (0-20mA)
-TO	Transmittance option
-AUX	Auxilary port for I2C, SPI, GPIO and triggers for integration with external systems
-20W	replace 5W TH lampo with 20W TH lamp (2000 hrs lifetime)

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