MProbe® NIR

Thin Film Measurement System

It is easy to be an expert with MProbe

Semiconsoft,Inc
Measurement Solutions

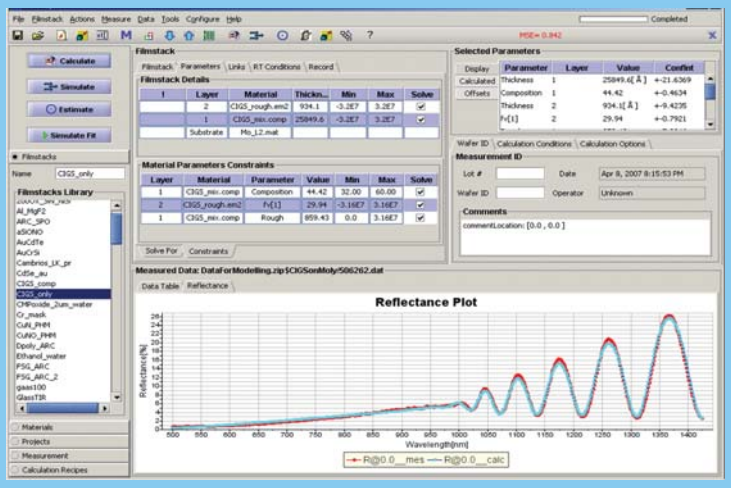
Spectroscopic Reflectance and/or Transmittance measurement in NIR (900nm -1700nm) allows to analyze applications that are optically opaque at visible or UV wavelengths. Solar cells absorbers (e.g. CIGS, CdTe), rough surface interfaces, other light scattering applications (high haze polymer web, layer with nanoparticles), dyed polymers, Si,Ge and many other application can be measured quickly and reliably. MProbe NIRHR (1500 nm -1550 nm) enables measurement of thick films and wafers (Quartz, Ge, Si).

Thickness Range: 50 nm - 1800 μm
Wavelength Range: 900nm -1700 nm /1500-1550nm

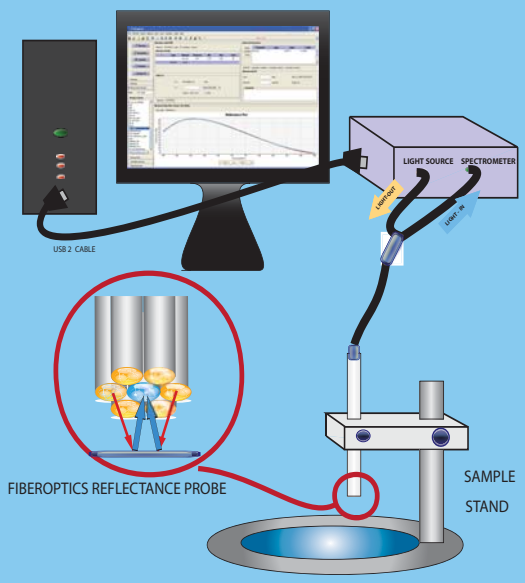
Real time measurement and analysis. Multi-layer, thin,thick, freestanding and nonuniform layers.

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 or inline. Easy integration with external system using TCP Modbus interface

Measurement: thickness, optical constants
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.



CIGS measurement: thickness and composition.
Oscillations indicate transparency in NIR



MProbe system diagram

Precision	0.01%
Accuracy	0.2%
Stability	0.03%
Spot Size	0.5 mm
Sample Size	from 10 mm

MProbe system (desktop configuration)

Specification

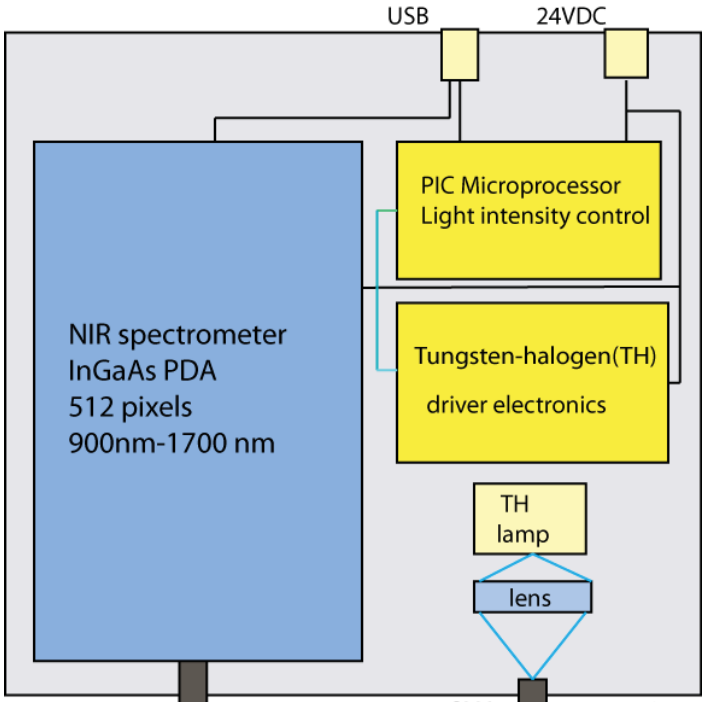
MProbe NIR HR

Spectral range (nm)	1500-1550
Spectrometer/detector	F4 spectrometer 512 pixels InGaAs PDA, 16 bit ADC, TE cooled detector. High-sensitivity and high-dynamic range modes. S/N >6000
Wavelength resolution	<0.3 nm
Thickness range	10 µm-1800 µm (quartz) 4 µm- 500 µm (Si)
Light source	5 W Tungsten-halogen lamp (Xe filled), CT 2800° Lifetime: 10000 hrs
Reflectance probe	Fiberoptics (7 fibers assembly), 400µm fiber core
Precision	0.01%
Accuracy	<0.2%
Weight (main unit)	7 kg
Size (main unit)	8"x 12" x 4" (WxDxH)
Power	100-250VAC, 50/60 Hz 20W

MProbe NIR

Spectral range (nm)	900-1700
Spectrometer/detector	F4 spectrometer 512 pixels InGaAs PDA, 16 bit ADC, TE cooled detector. High-sensitivity and high-dynamic range modes. S/N >6000
Wavelength resolution	<3.0 nm
Thickness range	50 nm-250 µm (quartz) 100 nm- 30 µm (Si)
Light source	5 W Tungsten-halogen lamp (Xe filled), CT 2800° Lifetime: 10000 hrs
Reflectance probe	Fiberoptics (7 fibers assembly), 400µm fiber core
Precision	0.01%
Accuracy	<0.2%
Weight (main unit)	7 kg
Size (main unit)	8"x 12" x 4" (WxDxH)
Power	100-250VAC, 50/60 Hz 20W

Options	
-MOD	remote control (TCP) based on Modbus protocol
- KM	kinetic measurement with specified number of measurement and/or delay between them
-FD	SH200A upgrade for measurement of foils, transparent and flexible samples
-TO	Transmittance option
-SLD	20mW SLD fro NIRHR system, replaces 5W TH lamp



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 and USB cable

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