MProbe Thin Film Measurement System

Film Thickness, Optical Constants, Surface Roughness

The MProbe series is a complete thin-film measurement system that uses a fibre optic probe for spectroscopic reflection or transmittance measurements. This approach yields a very compact and low-cost system. Careful design of the critical components and measurement optimisation algorithms implemented in the software results in a remarkably precise and robust instrument.

Fast Set Up

With the MProbe you'll be ready to obtain measurements immediately – everything is included: spectrometer/light source unit, fibre optic probe, sample stage, software and reference wafer.

Multilayer Films

We can measure all manner of translucent films including multilayer stacks, thin films, thick films, freestanding and non-uniform layers.

One Click Measurement

One-click measurement combines data acquisition (reflection or transmittance spectrum) and data analysis. Everybody is a measurement expert with MProbe!

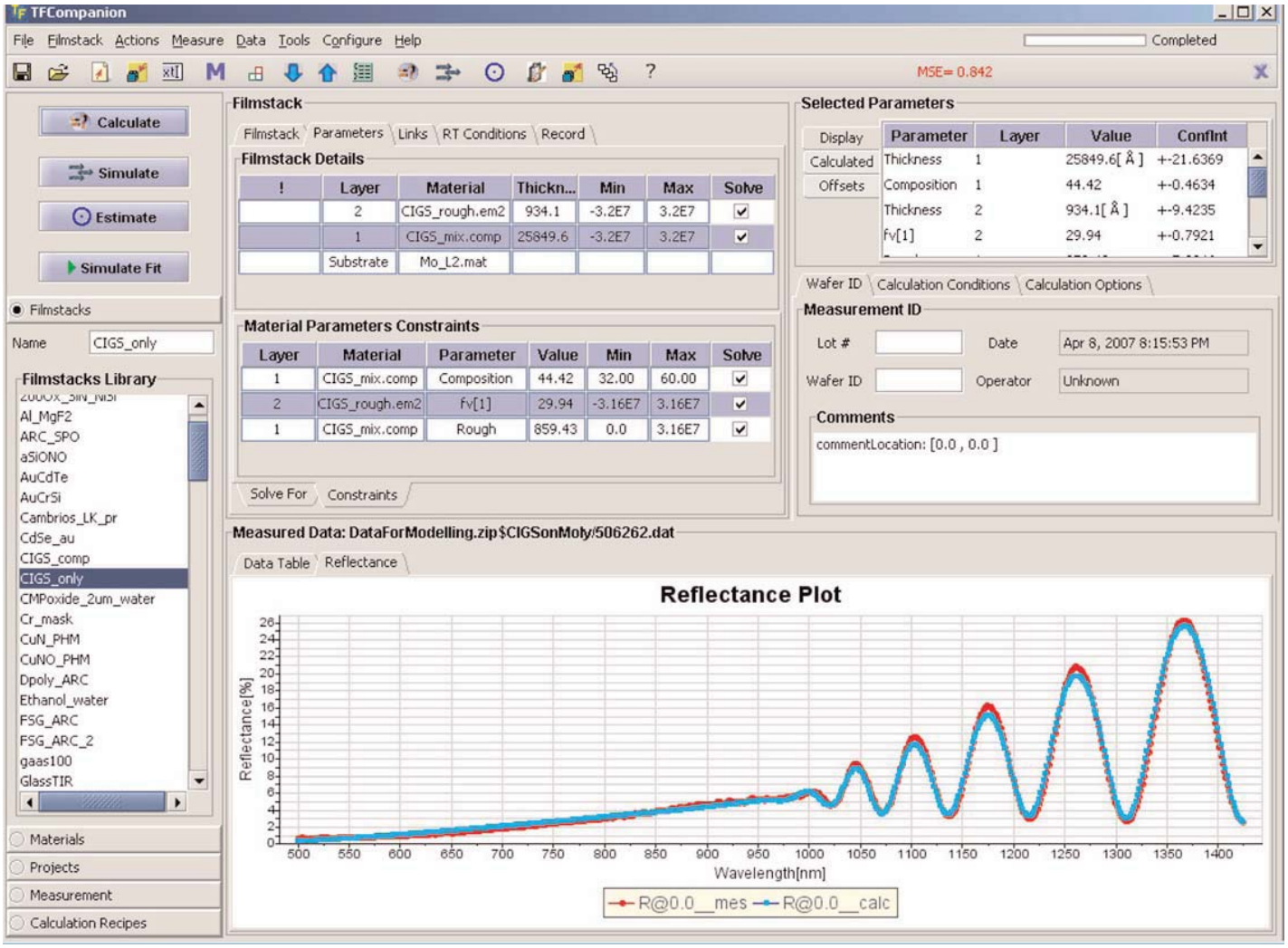
Lambda

www.lambdaphoto.co.uk **T: +44 (0)1582 764334**

Powerful Software

Of course, we have all the sophisticated tools including sensitivity analysis, error-estimator, simulation, film stack switching, global optimisation, layers and materials linking, etc. for complicated applications development.

The raw reflectance and transmittance spectral data is also available for use in a wide range of other applications e.g. chemical concentration (we have a range of flow cells), filters and coating testing, etc.



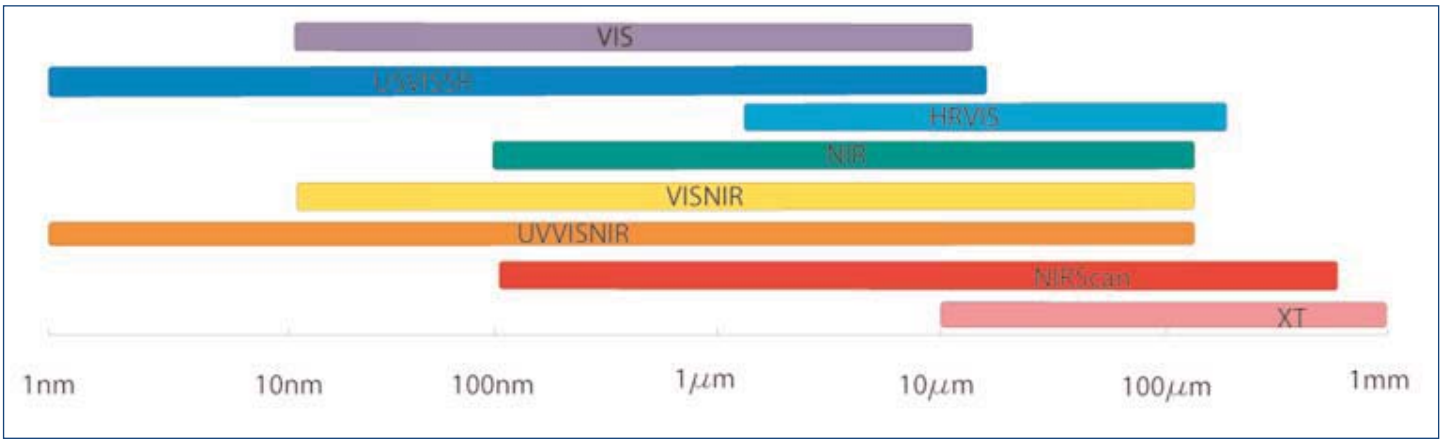
Extensive Library

Our extensive materials library has 500+ materials, with easy import/creation of new materials and support for a wide range of parameterised materials (from Cauchy to Cody-Lorentz) is included.

MProbe Specifications

Parameter	Value	Notes
Film Thickness	1nm to 1mm	Dependent on system configuration
Wavelength Range	200nm - 5000nm	Dependent on system configuration
Precision	0.1Å or 0.01%	s.d. of 100 thickness reading of 100nm SiO2/Si calibration sample
Accuracy	0.2% or 10Å	Film stack dependent
Stability	0.2Å or 0.02%	2 sigma over 20 days (100 measurements daily) on 100nm/Si calibration sample
Spot size	3 mm standard	Optional down to 3 µm
Sample size	from 1 mm	

System Configurations



MProbe System Configurations

Model	Wavelength range/nm	Spectrometer/ Detector	Light Source	Thickness Range
VIS	400-1100	Spectrometer F4/Si CCD 3600pixels/ ADC - 16 bit	Tungsten-Halogen	15nm-20μm (50μm option) High-precision measurements
UV-VIS-SR	200-1100	Spectrometer F4/Si CCD 3600pixels/16 bits ADC - 16 bit	Deuterium/ Tungsten-Halogen	1nm-20μm (50μm option)
HR-VIS	700-1000	Spectrometer F4/Si CCD 3600 pixels/ ADC 16 bit/ resolution <0.25nm	Tungsten-Halogen	1um-400μm
NIR	900-1700	F2 Transmission InGaAs PDA 512 pixels, ADC - 16 bit	Tungsten-Halogen	100nm-200μm
VIS-NIR	400-1700	Two spectrometer channels/ detectors (F4 Si 3600 pixels CCDand F2 InGaAs 512 pixels PDA)/ADC - 16 bit	Tungsten-Halogen	15nm-200μm
UV-VIS-NIR	200-1700	Two spectrometer channels/ detectors (F4 Si 3600 pixels CCD and InGaAs 512)/ ADC - 16 bit	Deuterium/ Tungsten-Halogen	1nm-200μm
NIR-SCAN	900 -5000	Scanning spectrometer/ InGaAs, MCT detectors/ ADC 24 bits	Tungsten-Halogen/ SiN (IR source)	100nm-800μm
XT	1590-1650	F2 Transmission/InGaAs PDA 512 pixels, ADC - 16 bit	Tungsten-Halogen	10μm-1mm

What's in the box:

- Main unit includes spectrometer(s), light source, electronics
- Reflectance probe
- Sample table with reflectance probe holder
- TFCompanion – Reflectance software CD (advanced version) plus USB dongle licence
- Calibration sample (Si or Al depending on system purchased)
- USB cable (connecting main unit to computer)
- Universal power adapter (110V/220V)
- Hardcopy of User Manual

Applications:

Laboratory, At-line, On-line and OEM measurement solutions for

- Semiconductors – Si, aSi, polySi
- Compound Semiconductors – AlGaAs, InGaAs, CdTe, CIGS
- Photoresists
- Polymer coatings – Paralene, PMMA, Polyamides
- Thin Films – Oxides, Nitrides, Metal films
- Solar Cells – aSi, TCO, CIGS, CdS, CdTe, OLED stacks
- LCD, FPD application – ITO, Cell Gaps, Polyamides
- Optical Coatings – Dielectric filters, Hardness coatings, AR coatings

Distribution in the UK & Ireland

Lambda

Characterisation, Measurement & Analysis

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