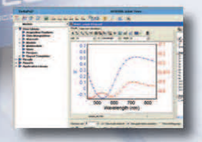
"User Oriented Software Platform"

The fully automatic mode provides a very intuitive software based on the use of icons. Four main interfaces are available to build experimental recipes, manage data, control the system in real-time, and for maintenance.

DeltaPsi2 Scientific Mode to Extend the Measurement Capability

DeltaPsi2 is a fully integrated spectroscopic ellipsometry platform that includes advanced measurement and analysis capabilities and a complete materials database.



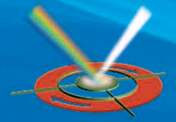
This software is ideal for engineering applications for new sample characterization or optimization of an existing experimental recipe. Once the new recipe is validated it can be performed repeatedly without expert intervention.

Auto Soft

Fully Automatic Mode for Routine Analysis

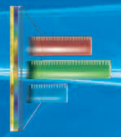
1> Load Sample

- Automatic adjustment of the sample
- Visualization of the spot on the sample with the MyAutoView vision system
- Choose your measurement site



2> Run Measurement

- Select your experimental recipe in the ready to use application database
- Push the Run button
- Measure at a single position or multiple positions to map thin film uniformity



3> Accurate Results

- Clear table provides thickness, optical constants, film uniformity and other material properties of the sample
  - Thin film result status: in or out tolerance limits
  - Automatic reporting
  - Reprocessing capability

HORIBA Scientific

Worldwide Customer Support

Founded nearly 190 years ago, HORIBA Jobin Yvon is one of world's largest manufacturers of analytical and spectroscopic systems and components. Certified ISO 9001 and 14001, our instruments are manufactured under a strict quality assurance program. They are supported by a worldwide network of strategically located facilities in the United States, Europe and Asia that are ready to provide assistance when and where it is needed.
Our staff of highly trained service and application specialists install and certify instrument performance, and conduct technical and application user training for smooth and efficient commissioning of the instruments.
This commitment to product excellence and continued support is part of the HORIBA Jobin Yvon culture.

Auto SE Awards

2008 IC Industry New System Award

2008 ACCSI Best New Instrument of the Year

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JOBIN YVON Technology

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Auto SE Specifications

Standard Configuration

Light source	Combination halogen and blue LED
Spectral range	450 – 1000 nm
Spot size	500 µm x 500 µm; 250 µm x 500 µm; 250 µm x 250 µm; 70 µm x 250 µm; 100 µm x 100 µm; 50 µm x 60 µm; 25 µm x 60 µm
Detector	CCD – Resolution: 2 nm
Sample stage	200 mm x 200 mm, automatic XYZ adjustment, vacuum chuck, Z height 35 mm
Sample viewing	CCD camera – Field of view: 1.33*1 mm Resolution: 10 µm
Goniometer	Fixed at 70° - Possible set up at 66° or 61.5°

Options

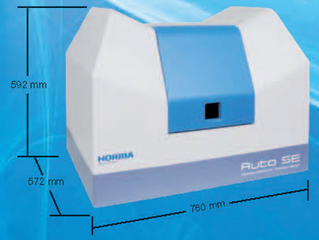
Accessories	• Sample cells: Temperature controlled cell, Electrochemical cell, Liquid cell • Sample stage: Autosampler, 360° Rotation control, Transmission mount, Plastic film mounts, Lens and curved sample mounts
Microspot	Xenon lamp needed for spot sizes < 100 x 100 µm
Table	Dimension (wxdxh): 1400-1840 x 530 x 740 mm

Performance

Measurement time	< 2 sec, typical 5 sec
Accuracy	NIST 1000 Å SiO_2/Si: d ± 4 Å - n(632.8 nm) ± 0.002 Fused silica: n ± 0.004
Repeatability	± 0.2 Å – Tested on NIST 150 Å SiO_2/Si

Facility Requirements

Operating systems	Windows® 7
Power supply	100 V / 115 V / 230 V, 200 W; 50 / 60 Hz
Weight	80 kg
Certificate	CE



Technology Spectroscopic Ellipsometer, liquid crystal modulation based

Auto SE

"Designed for your thin film measurements, to deliver maximum efficiency with simplicity"

The **Auto SE** is a new thin film measurement tool that provides fully automated analysis of thin film samples with simple, push button operations.

Sample analysis takes only a few seconds and a complete report is generated automatically. The report provides a comprehensive description of the thin film stack over the wavelength range 440-1000 nm, and includes film thicknesses, optical constants, surface roughness, and film inhomogeneities.

The **Auto SE** includes numerous automatic features, and the patented MyAutoView vision system allows the user to measure at exactly the right place every time.

The **Auto SE** is a turnkey instrument ideal for routine thin film measurement and device quality control.

Thin Film Analysis Made Easy

- Ready-to-use system configured to meet your specific application needs
- Full automatic analysis of thin film samples with simple push button operations
- Comprehensive display results with automatic reporting and compliance
- Multilanguage software

"Optimized for enhanced functionality and flexibility"

MyAutoView Vision System

- Visualization of the measurement site for all kinds of sample
- Exact positioning of the measurement spot on a sample
- Unique advantage for measurement of transparent substrates
- Integrated microspot optics

Highly Featured System

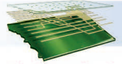
- Automatic sample loading and adjustment
- Automatic sample mapping
- Fast measurement from 450-1000 nm < 2 sec
- Automated selection of seven spot sizes
- Accessories to suit all applications

Intelligent Diagnostics

- Detect and diagnose problems automatically with comprehensive operator guidance for troubleshooting
- Stage with integrated reference samples for instrument quality control
- Simple instrument maintenance

Broad Range

of Thin Film Applications

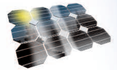


Semiconductors

- LED
- Dielectrics
- Thin metal films
- Polymers, photoresists
- Silicon
- PZT
- Laser diodes: GaN, AlGaN
- Transparent electronics

Flat Panel Displays

- TFT
- OLED
- Plasma display panel
- Flexible display



Photovoltaic Devices

- Amorphous, poly, micro, nano crystalline silicon
- Transparent conducting oxides
- Anti-reflective coatings
- Organic materials

Functional Coatings

- Optical coatings: Anti reflective, self-cleaning, electrochromic, mirrors
- Surface coatings and treatments: polymers, oil, Al_2O_3

Biological and Chemical Engineering

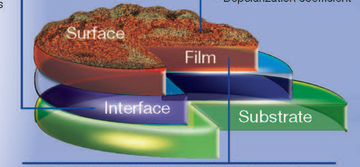
- Organic films, LB, SAM, protein
- Film adsorption
- Surface functionalization
- Liquids

Interfacial Behavior

- Interface thickness
- Composition of mixed materials forming interface
- Monitor interface thickness in real-time: film growth, film adsorption
- Monitor real-time changes at interfaces

Surface Measurement

- Roughness thickness
- Native oxide thickness
- Any surface film thickness
- Depolarization coefficient



Thickness Measurement

- From a few Å to 15 µm
- Single and multi layers

Optical Properties

- Optical constants (n,k) and α
- Optical bandgap Eg
- Transmittance

Material Properties

- Graded and anisotropic film
- Film porosity expressed in void percentage