

Ellipsometry for Beginners

■ Reference: ELL1eng

■ Duration: 3 days

■ Dates: March 26-28, 2019
November 18-20, 2019

■ Who should attend

New users of HORIBA ellipsometers

■ From 9 am to 5 pm

Objectives

- Provides a thorough background in the basic ellipsometry theory and focus on modeling techniques with a large variety of hands-on sample analysis.
- Use of the ellipsometer and DeltaPsi2 software through a large variety of hands-on sample analysis.

Program

Day 1

Theory and Practical Session

- Ellipsometry theory
- Instrumentation
- Overview of modeling process
- Description of main functions of DeltaPsi2 software & hands on the ellipsometer
- Procedure to check the system before to perform measurements
- Measurement and modeling of transparent films on opaque substrates

Day 2

Practical Session & Software Use

- Sample analysis of semi-absorbing thin films in monolayers and multilayers of opaque substrate
- EMA, Roughness
- Sample analysis of glass substrate
- Sample analysis of semi-absorbing thin films on glass
- Sample analysis of absorbing films
- Dispersion formulae parameterization
- Sample analysis of thickness of non-uniform layers

Day 3

Practical Session: Customer Samples

Ellipsometry : Advanced Modeling Techniques

■ Reference: ELL2 eng

■ Duration: 3 days

■ Dates: June 3-5, 2019
November 25-27, 2019

■ Who should attend

Advanced users. A level of knowledge equivalent to Level ELL1 is required

■ From 9 am to 5:30 pm

Objectives

This training course target advanced users, with a level of knowledge equivalent to ELL1. Attendees should have at least some ellipsometry experience and skill with DeltaPsi2 software.

- Provides a good practice of modeling methods used for the characterization of complex structures such as: unknown materials, ultra thin films, anisotropic samples, limited backside reflection parameterization, etc. Customers are invited to bring samples.

Program

Day 1

Practical Session of Non-ideal Samples: Measurements and Modeling

- Review of theory
- Analysis of gradient layer
- Analysis of thick films $>2\mu\text{m}$
- Non-uniform thicknesses
- Study of depolarizing sample

Day 2

Practical Session of Non-ideal Samples

- Analysis of combined ellipsometric and transmission data for thin metallic films sample
- Anisotropy: learn how to identify the axis orientation to run appropriate measurements for modeling

Day 3

Practice session - Customer samples



Practical information

Courses range from basic to advanced levels and are taught by application experts. The theoretical sessions aim to provide a thorough background in the basic principles and techniques. The practical sessions are directed at giving you hands-on experience and instructions concerning the use of your instrument, data analysis and software. We encourage users to raise any issues specific to their application. At the end of each course a certificate of participation is awarded.

Standard, customized and on-site training courses are available in France, Germany, USA and also at your location.

Dates mentioned here are only available for HORIBA France training center.

Registration

Fill in the form and:

- Email it to: training.hfr@horiba.com
- Or Fax it to: +33 (0)1 69 09 07 21
- More information: Tel: +33 (0)1 69 74 72 00

General Information

The invoice is sent at the end of the training. A certificate of participation is also given at the end of the training. We can help you book hotel accommodations. Following your registration, you will receive a package including training details and course venue map. We will help with invitation letters for visas, but HORIBA FRANCE is not responsible for any visa refusal.

Pricing

Refreshments, lunches during training and handbook are included. Hotel transportation, accommodation and evening meals are not included.

Location

Depending on the technique, there are three locations: Longjumeau (France, 20 km from Paris), Palaiseau (France, 26 km from Paris), Villeneuve d'Ascq (France 220 km from Paris) or at your facility for on-site training courses. Training courses can also take place in subsidiaries in Germany or in the USA.

Access to HORIBA FRANCE, Longjumeau

HORIBA FRANCE SAS
16 - 18 rue du canal
91165 Longjumeau - FRANCE

Depending on your means of transport, some useful information:

- if you are arriving by car, we are situated near the highways A6 and A10 and the main road N20
- if you are arriving by plane or train, you can take the train RER B or RER C that will take you not far from our offices. (Around 15 €, 150 € by taxi from Charles de Gaulle airport, 50 € from Orly airport).

We remain at your disposal for any information to access to your training place. You can also have a look at our web site at the following link:

<http://www.horiba.com/scientific/contact-us/france/visitors-guide/>

Access to HORIBA FRANCE, Palaiseau

HORIBA FRANCE SAS
Passage Jobin Yvon, Avenue de la Vauve,
91120 Palaiseau - FRANCE

From Roissy Charles de Gaulle Airport By Train

- Take the train called RER B (direction Saint Remy Les Chevreuse) and stop at Massy-Palaiseau station
- At Massy-Palaiseau station, take the Bus 91-06 C or 91-10 and stop at Fresnel
- The company is a 5 minute walk from the station, on your left, turn around the traffic circle and you will see the HORIBA building

Around 150 € by taxi from Charles de Gaulle airport.

From Orly Airport By Train

- At Orly airport, take the ORLYVAL, which is a metro line that links the Orly airport to the Antony RER station
- At Antony station, take the RER B (direction St Remy Les Chevreuse) and stops at Massy-Palaiseau station
- At Massy-Palaiseau station, take the Bus 91-06 C, 91-06 B or 91-10 stop at Fresnel
- The company is 5 minutes walk from the station, on your left, turn around the traffic circle and you will see the HORIBA building
- Or at Orly take the Bus 91-10 stop at Fresnel. The company is 5 minutes walk from the station, on your left, turn around the traffic circle and you will see the HORIBA building. We remain at your disposal for any information to access to your training place. You can also have a look at our web site at the following link:

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Around 50 € by taxi from Orly airport.

Access to HORIBA FRANCE, Villeneuve d'Ascq

HORIBA Jobin Yvon SAS
231 rue de Lille,
59650 Villeneuve d'Ascq - FRANCE

By Road from Paris

When entering Lille, after the exit «Aéroport de Lequin», take the direction «Bruxelles, Gand, Roubaix». Immediately take the direction «Gand / Roubaix» (N227) and No «Bruxelles» (A27) Nor «Valenciennes» (A23).

You will then arrive on the ringroad around Villeneuve d'Ascq. Take the third exit «Pont de Bois».

At the traffic light turn right and follow the road around, (the road will bend left then right). About 20m further on you will see the company on the right hand side where you can enter the car park.

By Road from Belgium (GAND - GENT)

Once in France, follow the motorway towards Lille. After «Tourcoing / Marcq-en-Baroeul», follow on the right hand side for Villeneuve d'Ascq. Take the exit «Flers Chateau» (This is marked exit 6 and later exit 5 - but it is the same exit). (You will now be following a road parallel to the motorway) Stay in the middle lane and go past two sets of traffic lights; at the third set of lights, move into the left hand lane to turn under the motorway.

At the traffic lights under the motorway go straight, (the road shall bend left then right). About 20 m further you shall see the company on the right hand side where you can enter the car park.

Aeroplane

From the airport Charles de Gaulle take the direction 'Terminal 2' which is also marked TGV (high speed train); where you can take the train to 'Lille Europe'.

Train - SNCF

There are two train stations in Lille - Lille Europe or Lille Flandres. Once you have arrived at the station in Lille you can take a taxi for HORIBA Jobin Yvon S.A.S., or you can take the underground. Please note both train stations have stations for the underground.

Follow the signs:

1. From the station «Lille Flandres», take line 1, direction «4 Cantons» and get off at the station «Pont de bois».
2. From the station «Lille Europe», take line 2, direction «St Philibert» and get off at the following station «Gare Lille Flandres» then take line 1, direction «4 Cantons» and get off at the station «Pont de Bois».

Bus

Bus n°43, direction «Hôtel de Ville de Villeneuve d'Ascq», arrêt «Baudoin IX».



For further information, contact:

Tel: + 33 (0) 1 69 74 72 00, Fax: + 33 (0) 1 69 09 07 21, training.hfr@horiba.com

Registration form

Training course:..... Date:

Family Name:..... First Name:.....

Company/Organisation:.....

Address:.....

Telephone Number:..... Fax:

Email:.....

Purchase order number:.....

Invitation letter requested: Yes No

If yes: Hotel accommodation:.....

Passport number:..... Date of arrival:.....

Date of passport validity:..... Date of departure:.....

Date of birth:..... Additional hotel dates (if requested in Paris):

Place of issue (as mentioned on the passport):.....

Date & signature

Stamp of the company

Information

Registration: Fill in the form and send it back by FAX or Email four weeks before beginning of the training.

Registration fees: the registration fees include the training courses and documentation. Hotel, transportation and living expenses are not included except lunches which are taken in the HORIBA Scientific Restaurant during the training.

Your contact: HORIBA FRANCE SAS, 16-18 rue du Canal, 91165 Longjumeau, FRANCE Tel: + 33 1 64 74 72 00

Fax: + 33 1 69 09 07 21

E-Mail: training.hfr@horiba.com

Siret Number: 837 150 366 00024

HORIBA Scientific continues contributing to the preservation of the global environment through analysis and measuring technology



Certified ISO 14001 in 2009, HORIBA Scientific is engaged in the monitoring of the environmental impact of its activities during the development, manufacture, sales, installation and service of scientific instruments and optical components. Training courses include safety and environmental precautions for the use of the instruments



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