

Particle Size Analyzer: Laser Diffraction

■ Reference: PSA1

■ Duration: 1 day

■ Dates: March 12, 2019
October 7, 2019

■ Who should attend

Users of Laser Diffraction Analyzers LA 300, LA350,
LA950, LA960 Analyzers

■ From 9 am to 5:30 pm

Objectives

- Acquire theoretical and practical knowledge on the particle size analyzer
- Learn how to optimize operating conditions for any sample

Program

Laser Diffraction Theory

- Description of optical configuration & hardware
- Fraunhofer and Mie theory
- Refractive Index (RI) definition and optimization, mathematical data treatment
- Results and interpretation (distribution base (volume, number, surface), description of typical statistical parameters (D10, D50, D90, Mode, std, D43....))

Presentation of the unit with its different parts and accessories demonstrating associated applications.

Software

- Installation
- Software description for quick handling
- How to create SOP and check reference materials
- How to create a standard SOP
- Method (SOP) set up on customer samples

Importance of sample preparation (sampling, sample predispersion)

Choice of Analytical Conditions and Optimisation

- Pump speed/stirrer speed (wet mode), Pressure / feeder vibration (dry mode)
- Acquisition time
- Concentration
- Ultrasonics: internal/external use
- Refractive index selection and optimization

Results interpretation (fit optimization, right size parameters selected regarding sample distribution, etc.)

Data exportation and setup

Specific software functions

Hands-on with Common Samples such as:

- Colored samples
- Dense materials
- Polydisperse & multimodal samples
- Granulated formulations / friable samples
- Emulsions

Maintenance of First Level

Particle Size Analyzer: Light Scattering Technique

■ Reference: PSA2

■ Duration: 1 day

■ Dates: March 13, 2019
October 8, 2019

■ Who should attend

Users equipped with a DLS analyzer, Camsizer P4 or Camsizer XT

■ From 9 am to 5:30 pm

Objectives

- Learn how to set up good conditions to properly run a sample
- How to interpret results in DLS

Program

Dynamic Light Scattering Theory

- Principle
- Description of optical configuration & hardware
- Parameters necessary to set up and influence result
- Cumulant method and histogram method
- Results and interpretation (distribution base (Intensity, volume, number), description of typical statistical parameters (Zave, PI, mean size, mode, std)
- Zeta potential principle (DLVO approach)
- Henry equations (models available: Schmolukovski, Huckel...)
- Molecular weight measurement (Debye plot)

Presentation of the unit with its different parts and accessories demonstrating associated applications

Software

- Installation
- Software description for quick handling
- How to create SOP and check reference materials
- How to create a standard SOP

Method (SOP) set up on customer samples

Importance of sample preparation

Choice of Analytical Conditions and Optimisation

- Media RI and viscosity set up
- Detector angle selection / attenuation filters
- Correlator set up
- Measurement acquisition time
- Model of computation
- Result display configuration (Intensity base, volume base, etc.)

Results interpretation (fit optimization, and data evaluation and treatment)

Data exportation and setup and recomputation

Hands on with Common Samples such as :

- Diluted and concentrated samples
- Broad size distribution samples
- Very small sample sizes (< 10nm)
- Proteins approach
- Emulsions
- Powders approach

Maintenance of First Level

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:

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

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».

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



For further information, contact:

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