Particle Characterization Analyzer: Light Scattering Technique

Reference
PCA2

Price
605€ per attendee

Duration
1 day

Dates
15 March 2024

Schedule
From 9 am to 5.30 pm

Registration deadline
15 February 2024

Location
14 Boulevard Thomas Gobert,
91120 Palaiseau - France

Prerequisites
Dedicated to HORIBA customers only and knowledge of the technique and equipment.

Who should attend
Users equipped with a DLS and ELS analyzer.

Certification
A diploma is delivered at the end of the course.

Learning methods
Theoretical presentation and instruments practice.

Course language
English

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

PROGRAM

Day 1

Dynamic Light Scattering Theory:
· Principle of the technique, optical configuration and hardware description
· Parameters necessary to set up and influence results
· Cumulant and histogram methods
· 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, accessories and their associated applications.

Software:
· Installation and description for quick handling
· How to create method and check reference materials
· How to create a standard method
· Method set up on customer samples
· Importance of sample preparation

Choice of Analytical Conditions and Optimization:
· 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 re-computation

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

First level maintenance