

Business Unit

Technology



Application and hands on training courses for Malvern instrument



Business Line
Instrumentation

Think Asia. Think DKSH.



We want you to get the most out of the instrumentation you purchase from DKSH. This means that more in-depth training for your laboratory personnel may be necessary. To address this need, DKSH offers training courses conducted by our factory-trained Application Specialist for the various Malvern instrument.

We encourage you to take advantage of our expertise and participate in our training courses to improve users' analysis skills, knowledge and particle theory for optimal productivity of your instrument.

These training courses are highly recommended if you:

- want a cost-efficient, quality training program for new laboratory personnel
- are new to Malvern instrument or particle size theory
- are experienced with Malvern instrument operation but need a better understanding of what the instruments are actually doing
- supervise people who operate Malvern instrument and need to understand data generation for review and troubleshooting
- simply need a refresher on the application
- have a new application for your Malvern instrument and need the background to develop, validate, and execute new methods

Application and instrument training courses

Malvern Zetasizer series training course



The Zetasizer series training course usually spans a single day. A typical course cover particle sizing using the Dynamic Light Scattering (DLS) technique, and the zeta potential technique used in the Zetasizer range of instruments from Malvern Instruments.

Specifically, the DLS portion is applicable to the following models: Zetasizer Nano ZSP/Nano S/Nano S90/Nano ZS, Zetasizer APS , Zetasizer μ V

The zeta potential portion is applicable to the following models: Nano Z/Nano ZS/Nano ZS90/Nano ZSP

Aims

By the end of the course, the users should be able to:

Dynamic Light Scattering (DLS)

To gain an understanding of the theory of DLS, understand what and how it is being measured, what a DLS instrument consists of, the unique features of the Nano series, how a correlator works and how size is obtained from the correlation function, experimental limits of the DLS technique, preparing samples for size measurement, to recognise the quality of data obtained from measurements, data interpretation.

Zeta potential

To gain a general understanding of colloidal chemistry and colloidal stability,

measurement of zeta potential using M3-PALS, preparing samples for zeta potential analysis, to recognise the quality of data obtained from measurements, data interpretation.

Course flexibility

The course can also be tailored to individual customer's requirements. Depending on the capability of the Zetasizer and available Zetasizer accessories at the customer's site, additional content like molecular weight determination by static light scattering (SLS), surface zeta potential, and auto-titration can be included.

Course schedule

One day course

A typical course schedule is shown below:

- Morning session – Theory
- Afternoon session – Practical

Content outline

Dynamic Light Scattering (DLS)

- Light scattering theory
- Particle/molecular size concepts
- DLS theory
- Sample requirements
- Sample preparation
- Setting up of measurements (standard operating procedures)
- Live measurement display
- Data interpretation



Zetasizer NANO ZSP/
Nano S/Nano S90/Nano ZS



Zetasizer APS



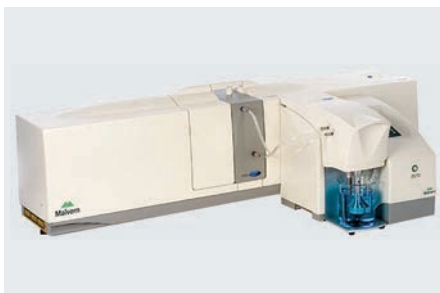
Zetasizer μ V

Content outline

Zeta potential

- Zeta potential overview
- Electrokinetics
- Laser Doppler electrophoresis/ Electrophoretic light scattering
- Phase analysis light scattering
- Capillary cell preparation and insertion
- Sample preparation and requirements
- Setting up of measurements (standard operating procedures)
- Live measurement display
- Data interpretation
- Instrument verification

Malvern Mastersizer 2000 series training course



The course usually spans a single day and typically covers size measurements using the wet dispersion method and/or dry dispersion method in the Mastersizer 2000 series instruments.

It is applicable to the following models:
Mastersizer 2000E and Mastersizer 2000

The dispersion accessories applicable:
Hydro 2000G, Hydro 2000S, Hydro 2000MU, Hydro 2000SM, Sirocco 2000

Aims

By the end of the course, the users should be able to:

- Perform standard sample measurements with confidence

- Interpret the data obtained and make adjustments to SOP if necessary
- Customise the software features with ease
- Perform basic maintenance for everyday operation

Who should attend

The course is mainly catered for new replacements not familiar with the theory and measurement techniques, but also existing users who required refresher training or more in-depth understanding.

Course schedule

One day course

A typical course schedule is shown below:

- Morning session – Theory
- Afternoon session – Practical

Content outline

Theory

- Basic concepts of particle sizing
- Data quality
- Obtaining and understanding size distribution
- Analysis models
- Method screening – wet and/or dry measurements

Practical

- Hardware and software introductions
- Basic operation
- Use of software and detailed SOP set-up
- Sample measurement and data interpretation
- Software customisation
- Maintenance

Malvern Mastersizer 3000 series training course



The Mastersizer 3000 is the latest generation of the world's most widespread particle sizing instrument, used by many thousands of companies and research institutes across a wide range of industries. Industry-leading design and ergonomics means the Mastersizer 3000 combines a stylish modern look with practicality in a compact footprint, giving maximum value from both your instrument investment and precious laboratory space. The patented folded optical design in the Mastersizer 3000 provides an impressive particle size range from 0.01 μm up to 3.5mm using a single optical measurement path. Combined with a new range of wet and dry dispersion accessories, this opens up more applications than ever before. The Mastersizer 3000 software delivers a modern intuitive interface, streamlined method development and expert advice on your results.

The Mastersizer 3000 series training course usually spans a single day. The course typically

covers size measurements using the wet dispersion method and/or dry dispersion method in the Mastersizer 3000 series instruments.

It is applicable to the following models: Mastersizer 3000E and Mastersizer 3000

The dispersion accessories applicable: Hydro SM, Hydro EV, Hydro MV, Hydro LV, Aero S

Aims

By the end of the course, the users should be able to:

- Perform standard sample measurements with confidence
- Interpret the data obtained and make adjustments to SOP if necessary
- Customise the software features with ease
- Perform basic maintenance for everyday operation

Who should attend

The course is mainly catered for new replacements not familiar with the theory and measurement techniques, but also existing users who required refresher training or more in-depth understanding.

Course schedule

One day course

A typical course schedule is shown below:

- Morning session – Theory
- Afternoon session – Practical

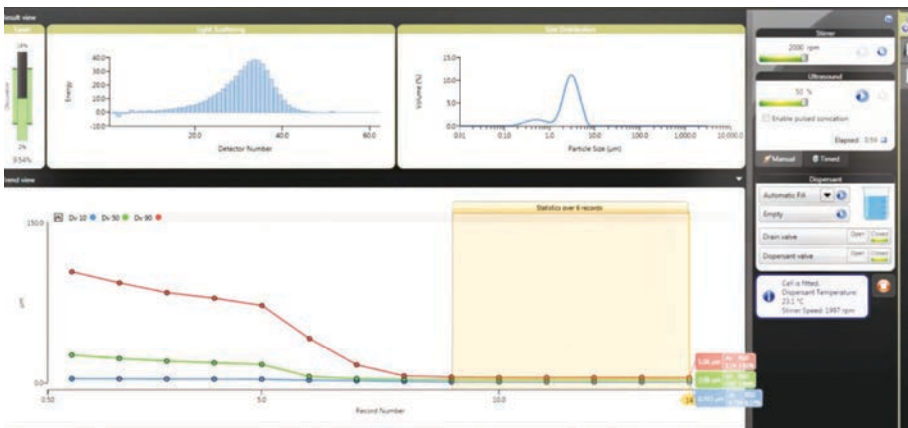
Content outline

Theory

- Basic concepts of particle sizing
- Data quality
- Obtaining and understanding size distribution
- Analysis models
- Method screening – wet and/or dry measurements

Practical

- Hardware and software introductions
- Basic operation
- Use of software and detailed SOP set-up
- Sample measurement and data interpretation
- Software customisation
- Maintenance



Course fees

Zetasizer series



Malvern Mastersizer 2000



Malvern Mastersizer 3000



Chargeable courses

SGD 1,500 (excluding GST) on a per-day-basis



Training Materials

CD-lecture notes, relevant application and technical notes, software, white papers and etc.

* In an effort to minimise green waste, no hardcopies of the notes will be provided unless requested.



Measurements will be conducted on-site using customers samples

It is advisable for customers to make available own consumables for the duration of the course. Any request for consumables will be charged as per quotation separately



Registration Form

By mail: DKSH Technology Pte Ltd, 625 Lorong 4 Toa Payoh #03-00, Singapore 319519

Fax +65 6273 1503

tec-marketing.sin@dksh.com

Course title: Malvern Mastersizer 2000 series
 Malvern Zetasizer series

Malvern Mastersizer 3000 series
Date _____

Personal information

First name _____

Last name _____

Gender _____ Date of birth _____

Mobile _____

Company name _____

Job title _____

Phone _____

Fax _____

Email _____

Office phone _____

I understand and accept the terms and conditions of this registration.

Signature _____

Date _____

Payment methods – Please choose one only:

Payment at DKSH Technology office.

Payment at DKSH Technology office may be made by NETS, cheque, cash, or bank draft in Singapore currency drawn on a bank in Singapore. Please bring your bill with you. Cheques should be made payable to DKSH Technology Pte Ltd. Please cross the cheque and write the Registration Reference ID, Applicant Name and NRIC/FIN number on the back of the cheque.

Payment by GIRO

GIRO is the most convenient way to pay your bill. There are several ways to obtain a GIRO form:

1. Call 1800-738 3330 (24 hours), select option 2 and follow the step by step guide
2. Download the form below URL
 - New GIRO application (info.singtel.com/sites/default/files/file/Support/giro.pdf)
 - Visit the DBS/POSBank website (www.dbs.com.sg/index/default.page)

Terms and conditions:

Total course(s) fee: SGD _____

- Prices quoted in Singapore Dollars and are exclusive of GST.
- Course fees will be refunded in full for any withdrawal from the course provided a written notice as received at least seven working days before the course commences.
- Refund is inapplicable after the later date. However, any substitute of participant(s) is accepted with no extra charge.
- If withdrawal is done in less than five working days before the course commences, a 100% of the course cancellation fee will be imposed.
- DKSH Technology Pte Ltd reserves the right to make appropriate changes to its trainer, course schedule and course outline if it deems necessary. However, participant(s) will be notified of the changes in advance.

DKSH Technology Pte. Ltd.

625 Lorong 4 Toa Payoh #03-00, Singapore 319519

Phone +65 6274 1222, Fax +65 6273 1503

www.dksh.com.sg