

Understanding Interfaces

*We are glad to help you
with this matter!*



Range of advanced trainings:

- practice-oriented seminars
- measuring technique training days
- individual device trainings
- measurement days

The exciting world of surface chemistry



...is everywhere!

Dear Sir or Madam,

today many innovative products are based on the understanding of surface and interfacial phenomena and of the associated physico-chemical properties of the material. Two examples are water-repelling wall paint and functional surfaces. Hence, in many industries it has become an essential part of the R&D activities to characterise the properties of surfaces and interfaces.



Dr. Michaela Laupheimer
DataPhysics Instruments
Public relations & knowledge transfer

DataPhysics Instruments is a leading manufacturer offering high-end measuring instruments for studying interfaces and surfaces. However, not only do we provide excellent tools, we also help you use them in the optimal way. For this purpose we offer a diverse range of advanced trainings as you will learn in this brochure.

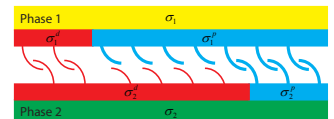
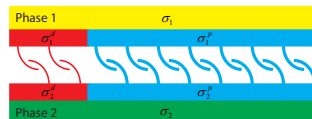
On the following pages you find more information on our practice-oriented overview seminar "Modern Measurement Techniques for Surface Chemistry", on our training days which focus on specific measurement techniques, on individual device trainings, as well as on measurement days and contract measurements in our application laboratory.

As experts in the field of interfacial measuring techniques we are keen to share our knowledge with you. After all our motto is not an empty promise:

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Interfacial measuring techniques

Important quantities for the specification of interfaces are the surface and interfacial tension of liquids, the surface energy of solids, as well as contact angles which characterise the wetting behaviour. See what different techniques are used to determine these quantities.

Tensiometry



Tensiometry is a weight-based measuring technique for the determination of surface and interfacial tensions. For different measuring situations numerous different test bodies are available.

Moreover, employing appropriate sample holders, a tensiometer can be used to measure dynamic contact angles and to investigate the wetting behaviour of powders, single fibres, fibre bundles and fabrics.

Drop contour analysis

Surface and interfacial tensions can be determined based on the contour of a drop that hangs from a dosing needle. Furthermore, the optical contour analysis systems can measure the contact angle of liquid drops on surfaces and hence determine the surface energy of solids. Suitable accessories allow dynamic, temperature- and humidity-dependant measurements. Innovative nanolitre and picolitre dosing systems ensure utmost precision for the analysis of even the smallest surfaces and also single fibres.

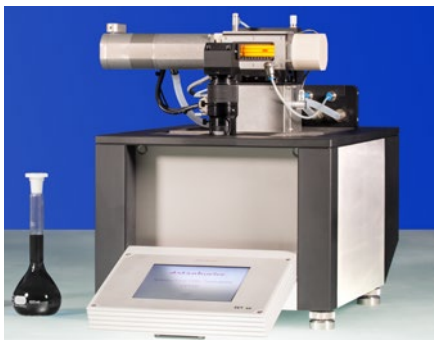


Spinning Drop Tensiometry

Low interfacial tensions, in particular, can be measured with a spinning drop tensiometer.

Here a liquid drop in a rotating capillary is being deformed by the centrifugal force.

The optical evaluation of the drop contour yields the interfacial tension and, during oscillation experiments, furthermore information on the rheological properties of the drop interface.



Stability analysis

A stability analysis is essential for the development of emulsions and suspension – whether for pharmaceutical products, for food or for technological products. For a sensitive and objective analysis an optical scan process is used which evaluates the transmitted and backscattered light intensity of the sample, both time- and position-resolved.



Practice-oriented seminar

In our practice-oriented seminar “**Modern Measurement Techniques for Surface Chemistry**” we provide you compactly, within two days, with an overview over the different methods and measurement techniques used to analyse surfaces and interfaces. This of course benefits beginners. But also as experienced user you should take the opportunity to broaden your horizon and learn about new developments and alternate methods, and to discuss your procedures with our experts. In the seminar we will give you a thorough understanding of the interfacial measuring techniques and also touch on the subject of the MultiScan method for stability analysis of dispersions.

During our seminars we provide **ideal learning conditions** in which you will learn new techniques that you can apply easily to your own set of tasks:

→ Well-balanced mix of practice and theory

In the seminar you will get to know and understand different measuring techniques. By alternating between lectures with practice related examples and hands-on device trainings in our application laboratory, you will get an in-depth insight into the capabilities of state-of-the-art measuring devices.

→ Competent contact persons

For every seminar we invite experts from science and industry as guest speakers to share with you their treasure trove of practical experience. Furthermore, you have the opportunity to exchange information with experienced DataPhysics Instruments employees of different divisions. All of them will gladly answer your questions and give tips and tricks for your very own application specific tasks.



→ Small seminar groups

Our seminars are designed for a maximum of 16 attendees. During practical phases the group will even be divided into two. Hence, an intensive exchange of information and experiences is possible. The small groups also make it possible to discuss many individual and specific questions.



→ Modern training centre & yummy catering

A comfortable learning environment is provided by the well equipped, modern seminar rooms and laboratories in our head office in Filderstadt near Stuttgart, Germany. Furthermore, you can look forward to great catering and a delicious seminar dinner.

In addition to our seminars in the DataPhysics Instruments facilities, we are glad to offer tailor-made **seminars at your site**. Hence, you and your colleagues can have an individual on-site seminar focussing on the measuring methods that are most relevant to you.

Contact us. We will be pleased to provide a quotation.

On the backside of this brochure you can find what former attendees say about our seminars.



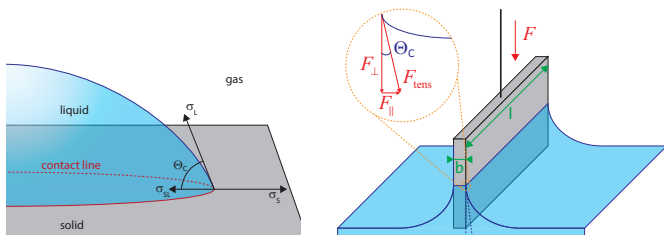
Measuring technique training days

In addition to our seminars which provide you with an overview over the various possibilities to analyse surfaces and interfaces, we also offer training days that focus on one measuring technique individually:

→ **Optical contact angle measurement & drop shape analysis**

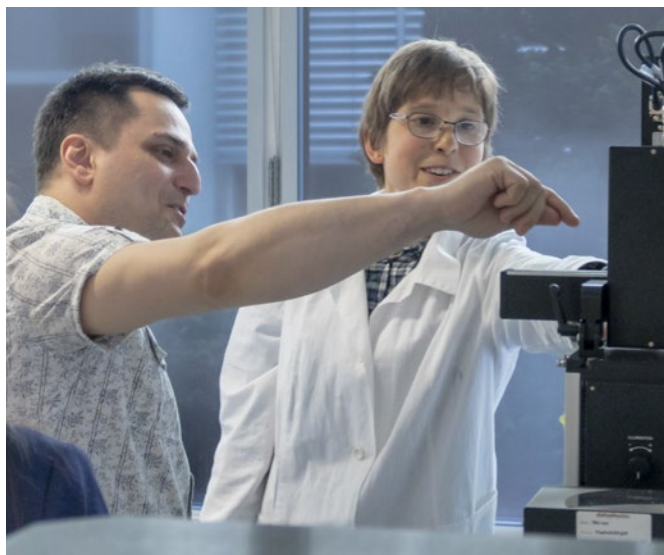
or

→ **Tensiometry**



This focus allows you to selectively improve your skills in the measuring technique that is most relevant to you.

We organise our measurement technique training days for small groups of 4–8 attendees. Practical measurements using the devices in our application laboratory are predominant and the different available measuring methods are dealt with. You can even bring your own sample for testing a few measurements if you want.

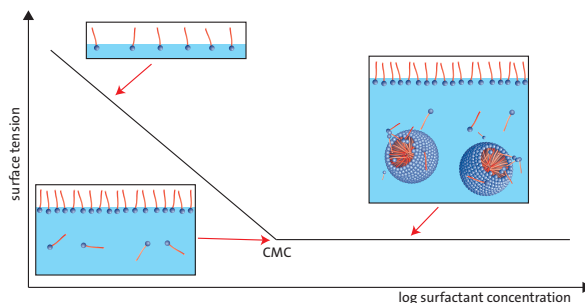


Individual device trainings

Our individual device trainings are the ideal option to introduce you and your colleagues to the functions and possibilities of your newly acquired or long unused measuring device.

Avoid a single-handed time consuming familiarization with your device. Instead let our experts help you to learn the proper and smart equipment use. Measurements will be done on your own samples and all the measuring methods that are relevant to you will be explained. This ensures that you are ideally prepared for working with your measuring device.

The device training is tailor-made for your needs and can be done on your preferred date either in our application centre or at your site.



Further offers of the application centre

Measurement days

In case you want to conduct measurements on your sample and require our support – be it a measuring device not available to you or simply some experienced expert's know-how – you can always come to our application laboratory for one or several measurement days.

Here we have access to our wide product and accessory range and will surely find the matching measuring system for your task. Our experienced employees plan and perform the necessary measurements together with you. Hence, the measuring plan can be designed to your liking and of course adjusted at any time.

The opportunity of direct and continuous communication during a measurement day ensures a fast, productive measuring advancement and reliable results even with complex tasks or samples that are hard to handle.

Contract measurements

We will gladly perform contract measurements with all our measuring devices for you. Just send us your samples and we take care of the measurements in our laboratory.

Use this service and receive within shortest time clearly presented results of measuring techniques that may not be currently available in your own laboratories, or that can be used to compare and verify your own measuring data.



Additional information

On our website www.dataphysics-instruments.com you can find additional information on our advanced trainings. In particular you can find:

In the section “*knowledge*”

- the **upcoming dates** of our seminar “Modern Measurement Techniques for Surface Chemistry” and of our measuring technique training days “Optical contact angle measurement & drop shape analysis” and “Tensiometry”
- information on our **guest lecturers**
- flyers with **in-depth information** on the next seminars and training days

In the section “*application*”

- **information** on device trainings, measurement days and contract measurements

In the section “*contact*”

- a **registration form** for the seminars and training days



Contact

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Our training and application centre is located in the head office of the DataPhysics Instruments GmbH, Raiffeisenstraße 34, in Filderstadt near Stuttgart, Germany. You can arrive comfortably either by car or train as well as by plane to Stuttgart airport which is just a few minutes away.

A few voices of former seminar attendees

“close interaction between theory & practice”

“good ratio of overview knowledge and in-depth discussions”

“good explanations”

“I was able to ask questions at any time”

“many competent contact persons”

“offers very good suggestions for own measuring challenges”

“excellent catering”

“comprehensive program and ideal group size”

“small seminar group allows for discussion of individual measuring challenges”

„good interaction between participants & staff.
Every staff member had useful information to share“

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