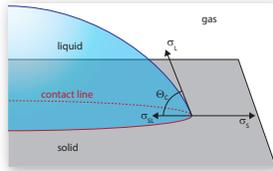


Modern Measurement Techniques for Surface Chemistry

Today surface chemistry plays an increasingly important role in many fields like materials and chemical engineering. Hence, the study of interfacial properties provides crucial information for the development, manufacturing and processing of many products. For this purpose there are different measurement methods of which you will learn both fundamental basics and practical aspects during our seminar.

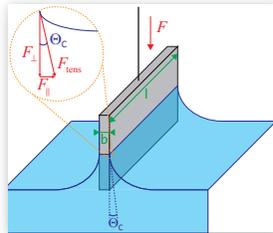
→ Drop shape analysis and contact angle measurement

The optical shape analysis of liquid drops yields surface and interfacial tensions. Moreover static and dynamic contact angles can be determined and used to calculate the surface energy of solids. Knowing these parameters one can characterize wetting behaviour and optimize surface coatings, e.g., paints and varnishes, inks and adhesives. Modern, automatic measuring instruments enable time, temperature and humidity controlled measuring processes and innovative microdosing systems allow studying even smallest surface areas and single fibres.



→ Tensiometry and spinning drop tensiometry

Surface and interfacial tensions as well as dynamic contact angles can also be measured using a force-based tensiometer. For these purposes there are various probes and different measurement methods available. Using appropriate sample holders one can study the wetting behaviour of powders, single fibres, fibre bundles and fabric.



Spinning drop tensiometry is the technology of choice for measuring extremely small interfacial tensions. With this technique the shape of a drop in a rotating capillary is evaluated optically. Oscillation experiments with varying rotational velocity furthermore yield information about the rheological properties of the drop interface.

Additional information & registration

For additional information about our advanced trainings and more dates please refer to our website www.dataphysics.de.

We will gladly accept your seminar registration via online form, e-mail or phone.

For further questions feel free to contact us at any time.



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Annotation

In case you are unable to attend a seminar, you can cancel your registration or change to another date without any fees, up until 3 weeks before the booked date. For a later cancellation we are charging the whole seminar fee. Of course you can name a surrogate without additional cost at any time. We reserve the right to cancel the seminar, in case the required minimum number of participants is not met. In this case we will notify you not later than 2 weeks before the seminar date. Naturally the whole seminar fee will be refunded in such a case. Please note that we are unable to compensate you for any incurred expenses.

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dataphysics
Understanding Interfaces

Applied Seminar

Modern Measurement Techniques for Surface Chemistry

15th & 16th of May 2018

Seminar contents

- Drop shape analysis
- Contact angle measurement
- Tensiometry
- Spinning drop tensiometry

Seminar schedule

→ Tuesday, 15th of May 2018

9:15 - 9:45	Welcome address
9:45 - 10:30	“Modern measurement techniques for surface chemistry – An introduction”
10:30- 10:50	Company tour
11:15 – 12:00	“Optical methods for determining surface and interfacial tensions, contact angles and surface energies”
12:00- 13:15	Lunch break
13:15 – 14:00	“Spot on Biomimetics and Smart Surfaces: Surface Characterization and Limits” Dipl.-Ing. (FH) Richard Thelen, Karlsruhe Institute of Technology
14:00 – 16:30	Practice: Measurements with the DataPhysics contact angle measuring devices of the OCA series
18:00	Seminar dinner

→ Wednesday, 16th of May 2018

9:00 - 9:10 Uhr	Wrap up
9:10 - 9:55 Uhr	“Tensiometric methods for determining surface and interfacial tensions and dynamic contact angles”
9:55 - 12:00 Uhr	Practice: Measurements with the DataPhysics tensiometers of the DCAT series
12:00 – 13:15 Uhr	Lunch break
13:15 – 14:00 Uhr	“The spinning drop method” Apl. Prof. Dr. Thomas Sottmann, University of Stuttgart
14:00 – 14:45 Uhr	Practice: Measurements with the DataPhysics spinning drop tensiometer of the SVT series
15:00 – 15:45 Uhr	“MultiScan technique for analyzing the stability of dispersions”
15:45 – 16:00 Uhr	Seminar review & farewell

Target group

Our seminar is aimed at everybody who wants to get an overview of the state-of-the-art measurement techniques for surface analysis.

No matter if you are already working in the field and want to discuss your methods with our experts, or if you are interested in how your surface chemistry questions could be approached – in our seminar you benefit by extending your fundamental knowledge and by learning how to practically deal with applied experimental aspects.



Key information

The seminar takes place in the modern training centre and laboratories of DataPhysics Instruments GmbH in Filderstadt near Stuttgart, Germany.

The number of participants is limited to 16.

The seminar fee is 790,- €* plus VAT, for students reduced to 540,- €* plus VAT, and covers seminar documentation, snacks and drinks during breaks, lunch and the seminar dinner on the evening of the first seminar day.

On request, we can also book accommodation for you.

* We offer a 10 % discount for registration until 2 months before the seminar



Your lecturers

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 employees of different divisions. All of them will gladly answer your questions and give tips and tricks for your very own application specific tasks.

Our **guest lecturers** for this seminar are:

→ Richard Thelen

Mr. Richard Thelen works at the Institute of Microstructure Technology (IMT) of the Karlsruhe Institute of Technology (KIT). In the group Biomimetics and Smart Surfaces he investigates micro and nano structures inspired by nature. At our seminar he will present amongst other things, how combining AFM and contact angle measurements facilitates the determination of adhesive forces.



Dipl.-Ing. (FH) Richard Thelen
Karlsruhe Institute of Technology

→ Prof. Dr. Thomas Sottmann

Apl. Prof. Dr. Thomas Sottmann is group leader at the Institute for Physical Chemistry at the University of Stuttgart. His group studies the thermodynamic, structural and interfacial properties of smart complex fluids. At our seminar the physicist will present the spinning drop method and its application to measure ultra-low interfacial tensions.



Prof. Dr. Thomas Sottmann
University of Stuttgart