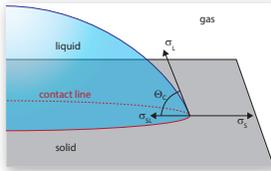


## Modern Measurement Techniques for Surface Chemistry

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.

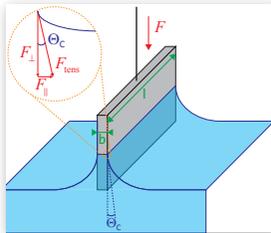
### → Drop shape analysis and contact angle measurement

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.

## Registration & additional information

We will gladly accept your seminar registration via online form, e-mail or phone. On our website [www.dataphysics-instruments.com](http://www.dataphysics-instruments.com) you can find information on our other advanced trainings as well as additional seminar dates.

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 costs 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 other incurred expenses.

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**dataphysics**  
Understanding Interfaces

## Applied Seminar

## Modern Measurement Techniques for Surface Chemistry

13<sup>th</sup> & 14<sup>th</sup> November 2019

### Seminar contents

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

## Seminar schedule

In our practice oriented seminar “Modern Measurement Techniques for Surface Chemistry” we provide you compactly, within two days, with an overview of different methods and measurement techniques used to analyse surfaces and interfaces.

→ The first day of the seminar is dedicated to the **optical drop shape analysis and contact angle measurement** which is used to determine interfacial tension and surface energy. After a **basic introduction** and a **company tour** a mix of interesting lectures and demonstrative practice phases in the laboratory ensure an inspiring and entertaining learning atmosphere. Additionally, a **guest lecturer** shares insights into the diverse possibilities of applying the presented measuring techniques.

→ On the second seminar day we focus on **tensiometry** and **spinning drop tensiometry**. With a varied program of lectures and practical demonstrations we give you a thorough understanding of the measuring techniques, plus we invited another experienced expert for a guest lecture. Finally, a session on the MultiScan technique for the **stability analysis of dispersions** completes the seminar.

Characteristic for all our seminars is an **informal, open atmosphere** with lots of room for **discussions**. Thus, you have the opportunity to **exchange experiences** with other seminar participants and our proven experts give you **advice on your personal questions**.



On the first day we start the seminar at 9:30 and end at about 16:30. Afterwards you are invited to a nice **seminar dinner** together.

On the second day we begin at 9:00 and finish on schedule at 16:00, such that you can leave in time to travel home.

## 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:

### → Dr. Michaela Müller

Dr. Michaela Müller is manager of the group “Polymeric Interfaces, Biomaterials and Biopolymers” at the Fraunhofer Institute for Interfacial Engineering and Biotechnology IGB in Stuttgart, Germany.

She deals with surface coatings and functionalisation as well as with biological materials. At our seminar the chemist will present wettability tests for the evaluation of functional surfaces.



Dr. Michaela Müller  
Fraunhofer IGB Stuttgart

### → Prof. Dr. Thomas Sottmann

Apl. Prof. Dr. Thomas Sottmann is group leader at the Institute for Physical Chemistry at the University of Stuttgart, Germany. 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