The exciting world of surface chemistry
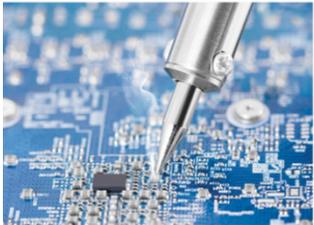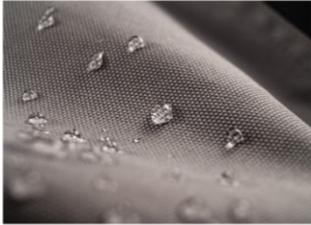
...is everywhere!

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 Wednesday evening in the NH hotel Filderstadt.

On request, we can also book accommodation for you. We have reserved a sufficient number of rooms in a hotel close by.

Your lecturers

Guest speakers:

Dr. Astrid Drechsler, Leibniz Institute of Polymer Research Dresden (IPF)

Apl. Prof. Dr. Thomas Sottmann, University of Stuttgart, Institute for Physical Chemistry

DataPhysics experts team:

Dr. Martin Grüßer and Dina Otto, *application centre*

Nils Langer, Dr. Peter Oberschachtsiek, Daniel Scholz, Marina Langer and Lynn Meissner, *customer care*

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

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Understanding Interfaces

Applied Seminar

Modern Measurement Techniques for Surface Chemistry
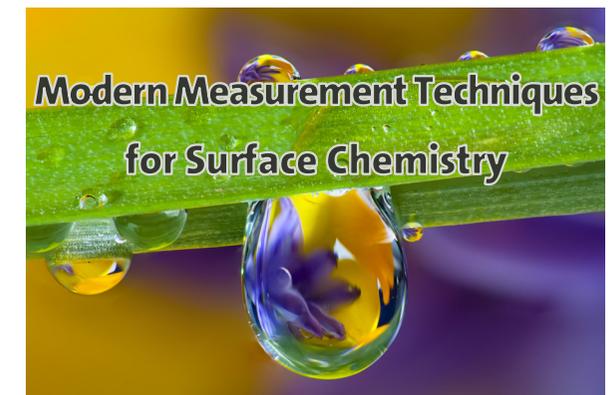
27. – 28. September 2017

Contents

→ *Drop shape analysis*

→ *Contact angle measurement*

→ *Tensiometry*

→ *Spinning drop tensiometry*

Seminar program

→ **Wednesday, 27. September 2017**

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	"From pattern collapse to self-cleaning surfaces – comprehensive investigation of interfacial phenomena in polymeric systems" *Dr. Astrid Drechsler, IPF Dresden*
14:00 – 16:30	Practice: Measurements with the OCA contact angle measuring devices from DataPhysics
18:00	*Seminar dinner in the NH hotel Filderstadt*

→ **Thursday, 28. September 2017**

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

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.

The various possibilities of optical drop shape analysis and contact angle measurement as well as of force-based tensiometry and spinning drop tensiometry are briefly described in the following.

→ **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 free 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. An appropriate method for measuring very low interfacial tensions is spinning drop tensiometry. 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 for the seminar on 27. – 28. September 2017

I will participate in the seminar *Modern Measurement Techniques for Surface Chemistry*:

_____
name   first name

_____
position / title

_____
company / institute   department

_____
street

_____
postal code   city   country

_____
phone   fax

_____
email

☐ participation for regular fee of 790,- € plus VAT

☐ participation for reduced fee of 540,- € plus VAT
(student confirmation must be sent)

☐ Please book a hotel room for me for the night(s)

from _____ to _____.
(85,- € / night incl. breakfast; not included in the seminar fee)

_____
date, signature

We gladly accept your registration via email, fax or telephone. Alternatively you can use the underlined seminar registration form on our homepage.
Your registration is binding upon receipt of payment. Should the situation arise, a substitutional participant can be named.

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