

15th Advanced Biofilm Course

24 – 29 October 2022

In 2005 the Advanced Biofilm Course (aka „**ABC**“) was born combining theoretical and practical aspects of biofilm research. The **ABC** aims to explore biofilms with advanced methods for examination and exploitation of structural and functional features.

TOPICS IN DETAIL

Cultivation of biofilms	growth devices and reactors, processes (e.g., substrate metabolism), development/lifecycle (e.g., growth and decay)
Biofilm imaging	theory and application of optical sectioning at the microscale (e.g., confocal laser scanning microscopy, CLSM) as well as at the mesoscale (e.g., optical coherence tomography, OCT)
Digital image analysis	quantification and visualization of 3-d datasets
Microsensors	substrate gradients, diffusion and kinetics theoretical and practical aspects of micro-environmental analyses
Biofilm modeling	biofilm modeling principles building blocks and applications

The course combines lectures and hands-on session about

- ✓ confocal laser scanning microscopy (multi-channel microscale imaging)
- ✓ optical coherence tomography (mesoscale imaging)
- ✓ microsensor measurements (gradients and processes)
- ✓ numerical modeling (computer practice with 1-d, 2-d and 3-d numerical models)

SCOPE AND KEY ISSUES

The course is intended for PhD students and post-doctoral researchers in microbiology, environmental technology, bioengineering and related areas, who are going to use this combined multidisciplinary approach for characterization of their own microbial biofilm systems. Attendees should feel free to communicate to the organizers whether their personal samples can be analyzed. Please bring your own computer (Windows only) for the modeling part. You will be provided with the necessary installation files.

FEE AND REGISTRATION

In order to provide high-value lessons and practical hands-on experience, the number of participants is limited to 12. **The course fee is 900€.** The fee includes tax (0%), course materials as well as lunch, refreshments in the breaks and a workshop dinner. In case the **ABC** is cancelled due to German COVID-19 regulations, payments are reimbursed.

Send your short application including CV and a letter of motivation (max. 1/2 page) as a single PDF to prantik.samanta@partner.kit.edu (e-mail subject: „ABC2022“).

ORGANIZATION

Prof. Dr. Harald Horn
Dr. Andrea Hille-Reichel
Dr. Michael Wagner

Karlsruhe Institute of
Technology



Prof. Dr. Michael Kühl

University of Copenhagen



Prof. Dr. Cristian
Picioareanu

King Abdullah University of
Science and Technology



Prantik Samanta

German Technical and Scientific
Association for Gas and Water



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LOCATION

DVGW Research Center at the Engler-Bunte-Institut of KIT
Engler-Bunte Ring 9 | building 40.04 | [map](#)
76131 Karlsruhe, Germany



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ACCOMODATION

Local hotels and Airbnb in Karlsruhe are to be arranged individually.