

Organization

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Registration

Send your short application including CV and a letter of motivation (max. 1/2 page) as a single PDF at the course website:

<http://biotechnologycourses.nl/courses/biofilm-course/>

application deadline 19.08.2019

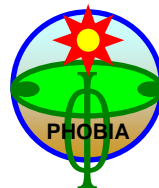
confirmation of acceptance 06.09.2019

In order to provide high-value lessons and practical hands-on experience, the number of participants is limited to 20.

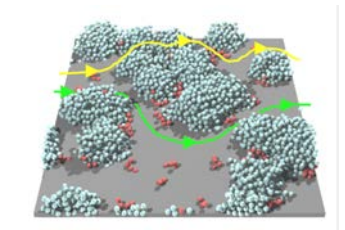
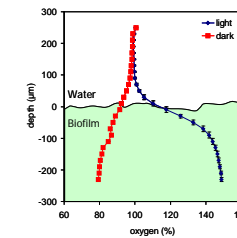
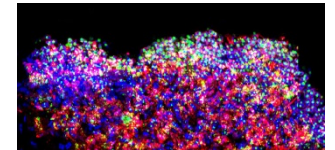
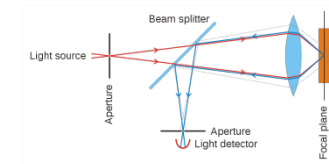
Fee

The regular course fee is 1000 € and the reduced fee for PhD candidates is 800 €. The fee includes course materials as well as lunch, refreshments in the breaks and a workshop dinner. Fee includes taxes.

The course evolved as a result of the EC project PHOBIA (QLK3-CT-2002-01938).



14th Advanced Biofilm Course



7 - 12 October 2019

Department of Biotechnology
Delft University of Technology
Van der Maasweg 9
Delft, The Netherlands

Welcome note

In 2005 the idea came up to offer an Advanced Biofilm Course (ABC) with theoretical and practical aspects implementing an innovative approach.

The aim of the course is to explore a given biofilm with advanced methods for examination of structure, function and processes of biofilms. This includes:

- confocal laser scanning microscopy (multi-channel microscale imaging)
- optical coherence tomography (mesoscale imaging)
- microsensor measurements (gradients and processes)
- numerical modeling of the data (data organization and logical thinking)

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.

The course is a hands-on course. Attendees should feel free to communicate to the organizers whether their personal samples can be analyzed.

Location

Department of Biotechnology
Faculty of Applied Sciences, Building 58
Van der Maasweg 9
2629 HZ, Delft
The Netherlands

<https://goo.gl/maps/zjTc7Nu5UnT2>

Accommodation

Local hotels and Airbnb in Delft, to be arranged individually.

Scope and key issues

The course aims to teach the major tools used in biofilm research:

- 1) biofilm imaging at the micro- and mesoscale
- 2) microelectrode techniques
- 3) mathematical modeling

Please bring your own computer for the modelling part (with mouse and power supply). You will be provided with the necessary installation files. It is also possible to get a Surface Pro4 laptop for the duration of the course.

Topics in detail

Cultivation of Biofilms

- growth devices and reactors
- processes (e.g. substrate metabolism)
- development (e.g. growth and decay)

Biofilm Imaging

- microscopic imaging with fluorescence microscopy
- theory and application of optical sectioning at the microscale by means of confocal laser scanning microscopy (CLSM)
- theory and application of optical sectioning at the mesoscale by means of optical coherence tomography (OCT)

Digital Image Analysis

- visualization of 3d data sets
- quantification of 3d data sets

Microsensors

- substrate gradients, diffusion and kinetics
- theoretical and practical aspects of microenvironmental analyses

Theory and Practice of Biofilm Modeling

- biofilm modeling principles, building blocks and applications
- computer practice with 1-d, 2-d and 3-d numerical models