

# Single Molecule Microscopy and Manipulation

9. – 13.10. 2023  
Practical course at BIOCEV,  
Průmyslová 595, Vestec



## Programme

### Monday, Oct 9th.

08:45 – 09:00 Registration

09:00 – 09:10 Welcome and organizational details

Aleš Benda

09:10 – 10:00 Introduction to principles of single molecule fluorescence detection and correlation analysis

Dalibor Pánek

10:00 – 11:00 Methods of fluorescence correlation analysis on confocal microscopes

Aleš Benda

11:00 – 11:20 Coffee Break

11:20 – 12:20 Advanced FCS methods – focus on molecular diffusion in membranes

Aleš Benda

12:20 – 13:10 Lunch

13:10 – 13:30 Introduction to DNA-PAINT single molecule localization microscopy

Eliška Macíčková

13:30 – 14:35 Introduction of the participants (3 min about yourself and your research)

14:35 – 14:55 Coffee break – Hands-on group assignment

14:55 – 15:25 Biological motivation for single molecule imaging – cytoskeleton and molecular motors

Ján Sabó

15:25 – 16:15 Introduction to TIRF microscopy and optical tweezers, kymography and single molecule tracking.

Alexandre Beber

16:15 – 18:00 Get together (beer and snacks)

## Tuesday, Oct 10th. – Friday, Oct 13th.

### Groups 1 – 2

09:00 – 12:30 Hands-on session - part I.

Around 10:45 Coffee break 15 min

12:30 – 13:30 Lunch

13:30 – 17:00 Hands-on session - part II.

Around 15:15 Coffee break 15 min

	Group 1	Group 2
Tuesday, Oct 10.	FCS	SMLM
Wednesday, Oct 11.	SMLM	FCS
Thursday, Oct 12.	TIRF	Opt. Tweezers
Friday, Oct 13.	Opt. Tweezers	TIRF

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