

FLIM not only for biologists (FNOB)

SIS code: MB100P03

Nov 18. – Nov 21., 2024

BIOCEV, Průmyslová 595, Vestec



Program *(still subject to last-minute changes)*

Monday, Nov 18. (at BIOCEV)

09:00 – 09:10 Welcome and introduction of organizers

Aleš Benda

09:10 – 09:55 Fluorescence lifetime and imaging – Basic principles

Dalibor Pánek

09:55 – 10:35 Introduction to TCSPC based FLIM instrumentation part I.

Peter Kapusta

10:35 – 10:50 Coffee break

10:50 – 11:30 Introduction to TCSPC based FLIM instrumentation part II.

Peter Kapusta

11:30 – 11:50 LIFA FLIM System with SPAD powered vTAU camera

Johan Herz

11:50 – 12:30 Flash talks by participants – (2 min about yourself and your research)

12:30 – 13:10 Lunch

13:10 – 13:20 FLIM data formats

Aleš Benda

13:20 – 13:40 NEXT GENERATION **STELLARIS FALCON** - How does it work and applications

Daniel Smeets

13:40 – 14:40 Instrument Introduction 1st round – 3 stations (Abberior Inst. Infinity Line,
Leica SP8 WLL + MH150 P, Carl Zeiss LSM880 NLO + HH400)

14:40 – 15:00 Coffee break

15:00 – 16:00 Instrument Introduction 2nd round



The course is supported by the National Infrastructure for Biological and Medical Imaging (Czech-BioImaging, Ministry of Education, Youth and Sports – Large Research Infrastructure, LM2023050).

16:00 – 17:00 Instrument Introduction 3rd round

17:00 – 19:00 [Get together \(pizza time :\)\) + technical checkup for data analysis hands-on](#)

Tuesday, Nov 19. (at BIOCEV)

9:00 – 9:45 Different ways of FLIM data analysis

[Dalibor Pánek](#)

9:45 – 10:45 Demonstration of basic FLIM data analysis in SymphoTime64

[Peter Kapusta](#)

10:45 - 11:00 [Coffee break](#)

11:00 – 11:15 Overview of open access FLIM software packages

[Aleš Benda](#)

11:15 – 12:15 FLIM acquisition artefacts and interpretation pitfalls

[Peter Kapusta](#)

12:15 – 13:00 [Lunch](#)

13:00 – 13:15 FLIM Integration in NIS Elements

[Jan Horký, Jonáš Chudý](#)

13:15 – 17:30 Image segmentation, object-based analysis and statistical evaluation –
combined talk and hands-on

[Zuzana Čočková, Aleš Benda](#)

Flexible [Coffee break](#)



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Wednesday, Nov 20. (Group 1 and 2 at BIOCEV; Group 3 and 4 at IMG/IPhy)

Hands-on sessions:

1. **Flipper TR** – BIOCEV – Piotr Jurkiewicz and Aleš Benda - *Sensing lipid membrane packing by Flipper-TR probe in living cells and model membranes* on Leica SP8 SMD with MH150P
2. **pH sensor** – BIOCEV - Dalibor Pánek and Petra Prokšová – *FLIM-based measuring of intracellular pH* on CZ LSM880 NLO with HH400
3. **NAD(P)H** – IPhys – Davide Basello and Daniel Hadraba - *Fluorescence lifetime imaging of cellular metabolic pathway* on Leica SP8 2P
4. **Perovskite Imaging** – IMG – Michaela Blažíková and Filip Gaizura - *FLIM usage for material science* on Leica Stellaris 8

		Group 1	Group 2	Group 3	Group 4
Wednesday Nov 20 th	1 st round	Flipper TR	pH sensor	NAD(P)H	Perovskite Imaging
	2 nd round	pH sensor	Flipper TR	Perovskite Imaging	NAD(P)H
Thursday Nov 21 st	3 rd round	NAD(P)H	Perovskite Imaging	Flipper TR	pH sensor
	4 th round	Perovskite Imaging	NAD(P)H	pH sensor	Flipper TR

09:00 – 09:20 Lipid membrane micro-environment sensing

[Piotr Jurkiewicz](#)

09:20 – 12:30 Hands-on – 4 groups – 1st round

[Flexible](#) [Coffee break](#)

[12:30 – 13:10 Lunch](#)

13:10 – 13:35 Luminosa - Push the boundaries of confocal FLIM

[Kevin Kramm](#)



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13:35 – 14:00 FLIM multiplexing for live cell imaging

Aleš Benda

14:00 – 17:30 Hands-on – 4 groups – 2nd round

Flexible Coffee break

Thursday, Nov 21. (Group 1 and 2 at IMG/IPhy; Group 3 and 4 at BIOCEV)

09:00 – 09:20 Spatially Quantifying Protein Functions in Tissue with QF-Pro®

James Miles

09:20 – 12:30 Hands-on – 4 groups – 3rd round

Flexible Coffee break

12:30 – 13:10 Lunch

13:10 – 13:35 Advanced Fluorescence Microscopy: Metal/Graphene-Induced Energy Transfer (MIET/GIET)

Chen Tao

13:35 – 14:00 Color coding in FLIM

Piotr Jurkiewicz

14:00 – 17:30 Hands-on – 4 groups – 4th round

Flexible Coffee break + evaluation form

Transportation to IMG/IPhy

- **Address: Vídeňská 1083, 142 00 Prague 4**
- **Meeting at 8:40 at reception at the address above, be on time please.**
- Public transport – bus stop “Ustavy akademie ved”
- By car: 50.0177539N, 14.4665875E



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