FLIM not only for biologists

imcf.natur.cuni.cz/FNOB

Feb 10. – Feb 12., 2021
BIOCEV, Průmyslová 595, Vestec

Organized by:
Imaging Methods Core Facility at BIOCEV, Faculty of Science, Charles University
J.Heyrovský Institute of Physical Chemistry of the Czech Academy of Sciences
Institute of Organic Chemistry and Biochemistry of the Czech Academy of Sciences
PicoQuant, Germany

Programme

Wednesday, Feb 10.

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 – 10:00 Mini Break

10:00 – 11:30 PicoQuant Demo: Fluorescence spectrometer FluoTime 300 and FluoMic Add-On
Frank Birke

11:30 – 12:10 Lunch

12:10 – 13:10 Introductions of the participants – (2 min about yourself and your research)

13:10 – 14:10 Introduction to FLIM instrumentation
Peter Kapusta

14:10 – 14:30 Break

14:30 – 15:30 Instrument Introduction 1 (Abberior Inst. Expert Line + TimeHarp 260N)

15:30 – 15:40 Break

15:40 – 16:40 Instrument Introduction 2 (Leica SP8 + 4ch HydraHarp 400)

16:40 – 16:50 Break

16:50 – 17:50 Instrument Introduction 3 (Carl Zeiss LSM880 + 2ch HydraHarp 400)

Thursday, Feb 11.

09:00 – 09:45 Different ways of FLIM data analysis
Dalibor Pánek

09:45 – 10:30 Lipid membrane micro-environment sensing – principles
Piotr Jurkiewicz

10:30 – 10:45 Break

10:45 – 11:05 Background for NAD(P)H imaging
Aleš Benda

11:05 – 11:45 Basic principles of FLIM-FRET
Marie Olšinová

11:45 – 12:45 Lunch

12:45 – 14:45 Group 1: Remote Hands-On Data analysis

Group 2+3: FLIM Demo 1 - NAD(P)H imaging

14:45 – 15:00 Break

15:00 – 17:00 Group 1: FLIM Demo 1 - NAD(P)H imaging

Group 2: Remote Hands-On Data analysis

Group 3: Free time

* Group 3 is welcome to join the session on Google Meet, only due to the limited number of available licenses will not be able to participate hands-on

Friday, Feb 12.

09:00 – 10:00 FLIM acquisition artefacts and interpretation pitfalls
Peter Kapusta

10:00 – 10:45 Protein-protein interactions visualized by FLIM-FRET: considerations needed for reliable experiments.
Jana Humpolíčková

10:45 – 11:00 Break

11:00 – 11:20 Lipid membrane micro-environment sensing – case study
Piotr Jurkiewicz

11:20 – 11:50 FLIM-FRET based sensor for inhibition of viral proteases in the precursor form and for drug evaluation
Jana Humpolíčková

11:50 – 12:15 Color coding in FLIM
Piotr Jurkiewicz

12:15 – 13:00 Lunch

13:00 – 14:30 FLIM Demo 2 - FLIM-FRET

14:30 – 14:45 Break

14:45 – 16:15 FLIM Demo 3 - Laurdan Imaging

16:15 – 16:30 Wrap Up – Course End

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