

LASERLAB EUROPE USER TRAINING WORKSHOP on Time-Resolved Techniques

20-22 June 2018, BioCeV, Vestec, Czech Republic

Organized by:



BIOCEV



BioCeV, Biotechnology and Biomedicine Centre of Academy of Sciences and Charles University,
Vestec near Prague, Czech Republic

ILC, International Laser Centre, Bratislava, Slovakia

Supported by:



LLE TReT Workshop on Time-resolved techniques

Day 1, June 20	
8:00 – 9:00	Registration
9:00 – 9:10	Workshop Opening Representatives of the Laserlab, ILC and Biocev
9:10 – 9:40	Laserlab Europe overview - concepts and working modes Dušan Chorvat , ILC Bratislava and Laserlab Europe
Block I.	INTRODUCTION TO TIME-RESOLVED SPECTROSCOPY AND IMAGING
9:40 – 10:20	Introduction to Light-Based Technologies Ales Benda , BioCeV // Dusan Chorvat , ILC
10:20 – 11:00	Time-resolved emission spectra – application of solvent relaxation in biological research Jan Sýkora , Institute of Physical Chemistry, CAS, Prague
<i>11:00 – 11.20</i>	<i>Coffee break</i>
11:20 – 11:35	TECHNICAL PROGRAM - company presentations: Pragolab
11:35 – 12:15	PLENARY - Insight into tumor biology using FLIM Marina Shirmanova , Inst. of Biomed. Technologies, Nizhny Novgorod
<i>12:15 – 13:15</i>	<i>Lunch</i>
13:15 – 13:30	TECHNICAL PROGRAM - company presentations: Carl Zeiss
13:30 – 14:10	Femtosecond Stimulated Raman Spectroscopy Miroslav Kloz , ELI Beamlines
Technical Block I.	HANDS-ON USER TRAINING
14:10 – 15:45	Hands-on user training I. 5 stands: <ol style="list-style-type: none"> 1. Importance of proper timing in STED microscopy 2. Lipid membrane order sensing by Laurdan 3. Autofluorescence of plants 4. FLIM data analysis 5. ELI – spectroscopy lab
<i>15:45 – 16.00</i>	<i>Refreshment</i>
16:00 – 17:30	Hands-on user training II. stands: <ol style="list-style-type: none"> 1. Importance of proper timing in STED microscopy 2. Lipid membrane order sensing by Laurdan 3. Autofluorescence of plants 4. FLIM data analysis 5. ELI – spectroscopy lab
Round table I.	CAREERS IN LIGHT-BASED TECHNOLOGIES: INFRASTRUCTURES
17:30 – 18:30	Careers in light-based technologies in research infrastructures: EU opportunities, Laserlab Europe, ELI, BioCeV ... Round table with speakers and infrastructure representatives national contact points (LLE, H2020, ELI...)
19:00 – 22:00	<i>Conference Dinner</i>

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Day 2, June 21	
Block II.	TIME-RESOLVED TECHNOLOGIES IN BIOLOGY, MEDICINE AND CHEMISTRY
9:00 – 9:40	Time resolved study of cellular autofluorescence Alzbeta Marcek Chorvatova, International Laser Centre, Bratislava
9:40 – 10:20	Detection of singlet oxygen using time-resolved techniques Veronika Huntosova, University of Pavel Jozef Safarik, Kosice
10:20 – 10:35	TECHNICAL PROGRAM - company presentations: Becker&Hickl, Germany
<i>10:35 – 10:50</i>	<i>Coffee break</i>
10:50 – 11:30	PLENARY – Correlated imaging of cell metabolism and oxygen modulation by FLIM and PLIM Angelica Rueck, University of Ulm
11:30-12:00	Time-resolved fluorescence correlation spectroscopy Aleš Benda, BIOCEV, Prague
<i>12:00 – 13:00</i>	<i>Lunch</i>
13:00 – 13:30	Whole-body fluorescence lifetime imaging Vladislav Shcheslavskiy, Becker-Hickl GmbH
13:30 – 14:10	FRET along with Monte Carlo simulations and Fluorescence Cross-Correlation Spectroscopy allows for quantitative description of membrane protein dimerization Jana Humpolíčková, Institute of Organic Chemistry and Biochemistry of the CAS, Prague
Technical Block II.	HANDS-ON USER TRAINING
14:10 – 15:40	Hands-on user training III. stands: <ol style="list-style-type: none"> 1. FLCS and photon antibunching 2. FLIM-FRET with acceptor photobleaching 3. NAD(P)H quantification in live cells 4. FLIM data analysis 5. ELI – spectroscopy lab
<i>15:40 – 16:00</i>	<i>Refreshment</i>
16:00 – 17:30	Hands-on user training IV. stands: <ol style="list-style-type: none"> 1. FLCS and photon antibunching 2. FLIM-FRET with acceptor photobleaching 3. NAD(P)H quantification in live cells 4. FLIM data analysis 5. ELI – spectroscopy lab
Round table II.	CAREERS IN LIGHT-BASED TECHNOLOGIES: ENTREPRENEURS
17:30 – 18:30	Careers in light-based technologies in private sector: Start-ups, companies, positive examples, opportunities. Round table with company representatives
<i>19:00 – 22:00</i>	<i>Informal meeting</i>

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Day 3, June 22	
Block III.	ANALYSIS OF COMPLEX DATA, TIME-RESOLVED AND MULTI-MODAL IMAGING
9:00 – 09:40	Analysis of multi-modal TCSPC data Dusan Chorvat, Anton Mateasik , International Laser Centre, Bratislava
9:40 – 10:20	PLENARY The Multi-Dimensional World of TCSPC FLIM - Advanced Techniques and Applications Wolfgang Becker , Becker-Hickl GmbH
10:20 – 10:40	<i>Coffee break</i>
10:40 – 11:40	ELI Beamlines - General description Miroslav Kloz , ELI Beamlines
11:40 – 12:00	Training school summary and closing remarks <i>Distribution of Certificates of Attendance</i>
12:00 - 13:00	<i>Lunch</i>
13:00 - 15:00	Excursion to ELI Beamlines, Dolní Břežany



Venue description:

Biotechnology and Biomedicine Centre of Academy of Sciences and Charles University, Vestec,
www.biocev.eu