



**ESULAB 2019**

# European Symposium on Ultrafast Laser driven Biophotonics

September 3 – 6 // Jena, Germany // Friedrich Schiller University

It is our greatest pleasure and honor to invite you to the 1st European Symposium on Ultrafast Laser driven Biophotonics held in **Jena, Germany** from **September 3 – 6, 2019**. We have an interesting program prepared for you and you have the chance to be a part of it.

Discussed will be the latest developments and trends in the field of spectroscopy and imaging using ultra-short pulse laser concepts to answer biophotonic question. The spectrum of topics includes among others non-linear imaging (e. g. SHG / THG microscopy, coherent Raman microscopy) for biomedical diagnostics, imaging of biological objects with highest spatial resolution by exploiting non-linear phenomena (e. g. STED microscopy) as well as wavelengths in the EUV/X-ray range and ultrafast time-resolved spectroscopy of biological systems e. g. protein folding dynamics using 2D spectroscopy.

## You can look forward to talks by:

- Stefan Hell / MPI for Biophysical Chemistry, Göttingen
- Ferenc Krausz & Mihaela Zigmán // MPI of Quantum Optics // Garching
- Elisabet Romero // Institute of Chemical Research of Catalonia
- Wei Min // Columbia University // New York
- Marloes Groot // Vrije Universiteit Amsterdam
- Mischa Bonn // MPI for Polymer Research // Mainz
- Hervé Rigneault // Institut Fresnel // Marseille
- and more

## Conference Chairs



Prof. Dr. Juergen Popp  
Scientific Director  
Leibniz Institute of  
Photonic Technology



Dr. Peter Vogt  
Director Field Sales  
Europe Scientific  
Coherent Europe BV

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The event is  
free of charge  
for registered  
participants.



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# Preliminary Schedule

<b>TUESDAY // SEPTEMBER 3rd</b>		
06:00 pm – 09:00 pm	Registration & Get Together // Friedrich Schiller University // Carl-Zeiss-Str. 3	
<b>WEDNESDAY // SEPTEMBER 4th</b>		
09:00 am – 09:30 am	Opening	Juergen Popp (Leibniz IPHT) & Peter Vogt (Coherent)
09:30 am – 11:00 am	Session 1	
Wei Min	Columbia University, New York, USA	Stimulated Raman scattering microscopy for biomedical imaging
Francesco Pavone	European Laboratory for Non Linear Spectroscopy (LENS), Sesto Fiorentino, Italy	Large area functional and structural non linear brain imaging
Christian Spielmann	Friedrich Schiller University Jena, Germany	Toward lensless imaging of biological samples with table-top XUV sources
11:00 am – 11:30 am	Coffee Break	
11:30 am – 01:00 pm	Session 2	
R. J. Dwayne Miller	Max Planck Institute for the Structure and Dynamics of Matter, Hamburg, Germany	Picosecond Infrared Laser (PIRL) Scalpel: Achieving Fundamental (Single Cell) Limits to Minimally Invasive Surgery and Biodiagnostics
Hervé Rigneault	Institut Fresnel, Marseille, France	Multiphoton Imaging Endoscopy
Maria Chernysheva	Leibniz Institute of Photonic Technology, Jena, Germany	Tailoring performance of ultrafast fibre lasers for applications in surgery and diagnostics
01:00 pm – 02:30 pm	Lunch Break	
02:30 pm – 04:00 pm	Session 3	
Ferenc Krausz & Mihaela Zigman	Max Planck Institute of Quantum Optics, Garching, Germany	ATTOSECOND SCIENCE From Basic Research to Cancer Detection
Stefan Witte	Vrije Universiteit, Amsterdam, The Netherlands	Spectroscopic lensless imaging: from visible to soft-X-ray wavelengths
Daniele Brida	University of Luxembourg, Luxembourg	Ultrafast Er: fiber lasers and new routes to microscopy and spectroscopy
04:00 pm – 04:30 pm	Coffee Break	
04:30 pm – 06:00 pm	Session 4	
Marloes Groot	Vrije Universiteit, Amsterdam, The Netherlands	Instant pathology with higher harmonic generation
Gert-Jan Bakker	Radboud University Medical Center, Nijmegen, The Netherlands	Deep 2-, 3-, and 4-photon microscopy in skin tumor models with excitation in the 1700 nm spectral window
Thomas Neicke	APE Berlin, Germany	tba
Karsten König	Saarland University, Saarbruecken, Germany	Translation of Two-Photon Microscopy to the Clinic: In Vivo Multiphoton CARS Tomography of Patients with Skin Disorders
06:00 pm – 08:00 pm	Poster Session	
<b>THURSDAY // SEPTEMBER 5th</b>		
09:00 am – 10:00 am	Plenary Lecture	
Stefan Hell	Max Planck Institute for Biophysical Chemistry, Göttingen, Germany	MINIFLUX Nanoscopy: Superresolution post Nobel
10:00 am – 10:30 am	Coffee Break	
10:30 am – 12:00 pm	Session 5	
Marc Vrakking	Max Born Institute for Nonlinear Optics and Short Pulse Spectroscopy, Berlin, Germany	Attosecond Science: Past, Present and Future
Elisabet Romero	Institute of Chemical Research of Catalonia, Tarragona, Spain	Two-Dimensional Electronic Spectroscopy: a Tool to Unravel Quantum Coherence
Gerhard G. Paulus	Friedrich Schiller University Jena, Germany	XUV coherence tomography for cross-sectional nanoscale imaging
12:00 pm – 01:30 pm	Lunch Break	
01:30 pm – 03:00 pm	Session 6	
Gabriele Bixel	Max Planck Institute for Molecular Biomedicine, Münster, Germany	Intravital multiphoton imaging of cellular dynamics in the bone marrow microenvironment
Peter Hamm	University of Zurich, Switzerland	A Nonequilibrium Approach to Allosteric Communication
Joseph Henrich	Coherent, Inc, Santa Clara, USA	Ultrafast Lasers for Lifesciences
tba	Sphere Ultrafast Photonics, Porto, Portugal	tba
03:00 pm – 03:30 pm	Coffee Break	
03:30 pm – 05:00 pm	Session 7	
Mischa Bonn	Max Planck Institute for Polymer Research	Quantitative Coherent Anti-Stokes Raman Scattering Microspectroscopy
Fabio Novelli	Ruhr University Bochum, Germany	Transient Alignment of Liquid Water
Tom Oliver	University of Bristol, United Kingdom	Photoprotection in crop species and iridescent plants
07:00 pm – 11:00 pm	Conference Dinner // Volksbad Jena // Knebelstr. 10	
<b>FRIDAY // SEPTEMBER 6th</b>		
09:00 am – 10:30 am	Session 8	
Rienk van Grondelle	Vrije Universiteit, Amsterdam, The Netherlands	The Quantum Design of Photosynthesis
Maria Wächtler	Leibniz Institute of Photonic Technology, Jena, Germany	Charge-carrier dynamics in semiconductor/metal hybrid nanostructures for light-driven catalysis
Timo Eidam	Active Fiber Systems, Jena, Germany	Fiber-laser driven imaging and spectroscopy applications
Klaus Gerwert	Ruhr University Bochum, Germany	tba
10:30 am – 11:00 am	Coffee Break	
11:00 am – 12:30 pm	Session 9	
Jochen Küpper	Center for Free-Electron Laser Science, Hamburg, Germany	Controlled molecules and nanoparticles
Bettina Weigel	Eberhard Karls University of Tübingen, Germany	Intravital multiphoton and higher harmonic generation microscopy for visualizing tumor invasion and immunotherapy
Jens Limpert	Friedrich Schiller University Jena, Germany	Ultrafast Fiber Lasers for Applications in Biophotonics