

## BIOAM-2023 PROGRAMME

SEPTEMBER, 13<sup>th</sup>, 2023

8:00 – 9:00	<b>REGISTRATION, COFFEE</b>	
<b>SESSION I</b>	<b>Chair: Tatiana NOVIKOVA, LPICM, CNRS, Ecole polytechnique, IP Paris, France</b>	
9:00-9:10	<b>Kees van der BEEK</b> Vice-Provost for Research at Ecole polytechnique, France	Welcome address
9:10-9:40	<b>Etienne BRASSELET</b> University of Bordeaux, CNRS, LOMA, Talence, France	Shaping Soft Matter with Light <b>(Invited)</b>
9:40:10:00	<b>Rodrigo GUTIÉRREZ-CUEVAS</b> Institut Langevin, ESPCI Paris, PSL University, CNRS, France	Measuring, Analyzing, and Tailoring the Rotational Memory Effect in Multimode Fibers
10:00-10:30	<b>Edik RAFAILOV</b> Aston University, Birmingham, UK	Conical Refraction, Phenomenon and Applications <b>(Invited)</b>
10:30-11:00	<b>COFFEE BREAK</b>	
<b>SESSION II</b>	<b>Chair: Oriol ARTEAGA, University of Barcelona, Spain</b>	
11:00-11:30	<b>Qiwen ZHAN</b> University of Shanghai for Science and Technology, Shanghai, China	Spatiotemporal Vortices of Light <b>(Invited)</b>
11:30-11:50	<b>Igor MEGLINSKI</b> College of Engineering and Physical Sciences, University of Aston, Birmingham, UK	Memory of Orbital Angular Momentum of Light in Multiple Scattering
11:50-12:20	<b>Daryl PREECE</b> Beckman Laser Institute and Medical Clinic, University of California Irvine, CA, USA	Vectorial Light Shaping for the Creation of Uniform Bottle Beams <b>(Invited)</b>
12:20-13:20	<b>LUNCH BREAK</b>	
13:20-14:00	<b>VISIT TO ECOLE POLYTECHNIQUE MUSEUM</b>	<b>POSTER SESSION</b>
<b>SESSION III</b>	<b>Chair: Marie-Claire SCHANNE-KLEIN, LOB, CNRS, Ecole polytechnique, IP Paris, France</b>	
14:00-14:30	<b>François HACHE</b> LOB, CNRS, Ecole polytechnique, IP Paris, INSERM, Palaiseau, France	Fast Folding Dynamics of DNA G-Quadruplex Studied with Time-Resolved Circular Dichroism <b>(Invited)</b>
14:30-14:50	<b>Olivier ACHER</b> HORIBA, Palaiseau, France	Advances in Polarized Raman Microscopy
14:50-15:20	<b>Hilton BARBOSA DE AGUIAR</b> Lab. Kastler Brossel, CNRS, École Normale Supérieure - Sorbonne University, Paris, France	Compressive Raman Microspectroscopy <b>(Invited)</b>
15:20-15:50	<b>COFFEE BREAK</b>	
<b>SESSION IV</b>	<b>Chair: Igor MEGLINSKI, University of Aston, Birmingham, UK</b>	
15:50-16:20	<b>Grigorii SOKOLOVSKII</b> Ioffe Institute, St Petersburg, Russia	Generation of Bessel Beams and Superfocusing of Semiconductor Laser Radiation <b>(Invited)</b>

16:20-16:50	<b>Iago PARDO</b> Dep. Física Aplicada, Universitat de Barcelona, Barcelona Spain	Wide-field Mueller matrix polarimetry for spectral characterization of basic biological tissues: muscle, fat, connective tissue, and skin <b>(Invited)</b>
16:50-17:10	<b>Pascale CHANGENET</b> LOB, CNRS, Ecole polytechnique, IP Paris, INSERM, Palaiseau, France	Artifact-Free Balanced Detection for Measurement of Circular Dichroism with a Subpicosecond Time Resolution
17:10-18:30	<b>POSTER SESSION / WELCOME COCKTAIL</b>	

### SEPTEMBER, 14<sup>th</sup>, 2023

<b>SESSION V</b>	<b>Chair: Thomas GERMER, NIST, Gaithersburg, MD, USA</b>	
9:00-9:30	<b>Miguel ALONSO</b> , Ecole Centrale Marseille, France, University of Rochester, USA	The Theory of 3D Polarization and Its Application in SMOLM <b>(Invited)</b>
9:30-10:00	<b>Chris STURM</b> , Felix-Bloch-Institut für Festkörperphysik, Universität Leipzig, Germany	Electromagnetic Waves in Crystals: the Presence of Exceptional Points <b>(Invited)</b>
10:00-10:30	<b>Roman NOVIKOV</b> CMAP, CNRS, Ecole polytechnique, France	Super-Resolution Reconstruction from Truncated Fourier Transform <b>(Invited)</b>
10:30-11:00	<b>COFFEE BREAK</b>	

<b>SESSION VI</b>	<b>Chair: Jessica RAMELLA-ROMAN, Florida International University, Miami, FL, USA</b>	
11:00-11:30	<b>Daniel ELSON</b> , Faculty of Medicine, Department of Surgery & Cancer, Imperial College of London, UK	Endoscopic Polarization-Resolved Imaging <b>(Invited)</b>
11:30-11:50	<b>Marie-Claire SCHANNE-KLEIN</b> LOB, Ecole polytechnique, CNRS, INSERM, Palaiseau, France	Circular-Dichroism Second Harmonic Microscopy: a New Tool to Probe the Sub-micrometer Scale Polarity Distribution of Out-of-plane Collagen Fibrils
11:50-12:20	<b>Sophie BRASSELET</b> Institut Fresnel, Marseille, France	Imaging of Proteins' Organization in 3D Using Single Molecule Orientation and Localization Microscopy (SMOLM) <b>(Invited)</b>
12:20-13:30	<b>LUNCH BREAK</b>	

<b>SESSION VII</b>	<b>Chair: Sophie BRASSELET, Institut Fresnel, Marseille, France</b>	
13:30-14:00	<b>Mark DENNIS</b> School of Physics and Astronomy, University of Birmingham, UK	Ray and wave mechanics for structuring light <b>(Invited)</b>
14:00-14:30	<b>Marc GUILLON</b> , Institute for the Neurosciences, CNRS, Université Paris Cité, France	Vector Wave Lateral Shearing Interferometry <b>(Invited)</b>
14:30-14:50	<b>Jessica RAMELLA-ROMAN</b> Florida International University, Miami, FL, USA	Collagen Organization in the Remodeling Uterine Cervix during Pregnancy
14:50-15:20	<b>Thomas GERMER</b> National Institute of Standards & Technology, Gaithersburg, MD, USA	Combining Mueller Matrix Imaging with Spatial Frequency Domain Imaging <b>(Invited)</b>
15:20-15:50	<b>COFFEE BREAK</b>	

<b>SESSION VIII</b>	<b>Chair: Miguel ALONSO, Ecole Centrale Marseille, France, University of Rochester, USA</b>	
15:50-16:20	<b>Anna BEZRYADINA,</b> California State University Northridge, CA, USA	Propagation of OAM and Polarization through Red Blood Cell Suspension ( <b>Invited</b> )
16:20-16:50	<b>Juan CAMPOS,</b> Autonomous University of Barcelona, Spain	Demosaijing Polarization Color Camera in the Fourier Domain ( <b>Invited</b> )
16:50-17:20	<b>Ruth SIMS,</b> Institut de la Vision, Sorbonne Université, Inserm,CNRS, Paris, France	Scanless Two-Photon Voltage Imaging ( <b>Invited</b> )
17:20--18:30	<b>BEST POSTER AWARD CEREMONY / WINE AND CHEESE PARTY</b>	

### SEPTEMBER, 15<sup>th</sup>, 2023

<b>SESSION IX</b>	<b>Chair: Alexander BYKOV, University of Oulu, Finland</b>	
9:00-9:30	<b>Sergey SERGEYEV,</b> Aston University, Birmingham, UK	Polarization Attractors Generated by Mode-Locked Fiber Lasers ( <b>Invited</b> )
9:30-10:00	<b>Regina GUMENYUK,</b> Tampere University, Finland	Towards Generating High-Power Structured Light for Biomedical Applications ( <b>Invited</b> )
10:00-10:30	<b>Angel LIZANA,</b> Autonomous University of Barcelona, Spain	Polarimetric Observables for Biological Tissue Enhanced Imaging ( <b>Invited</b> )
10:30-11:00	<b>COFFEE BREAK</b>	

<b>SESSION X</b>	<b>Chair: Igor MEGLINSKI, University of Aston, Birmingham, UK</b>	
11:00-11:20	<b>Alexander BYKOV,</b> University of Oulu, Finland	Leveraging Orbital Angular Momentum for Glucose Sensing in Tissue-Like Scattering Medium
11:20-11:40	<b>Payvand ARJMAND</b> Université Paris Cité, SPPIN, CNRS, Paris, France	STED Microscopy with Speckles
11:40-12:00	<b>Omar RODRÍGUEZ-NÚÑEZ,</b> Department of Neurosurgery, Inselspital, Bern University Hospital, Bern, Switzerland	Robustness of the Wide-Field Imaging Mueller Polarimetry for Brain Tissue Differentiation and White Matter Fiber Tract Identification in Surgery-Like Environment
12:00-12:20	<b>Matthew GLEESON,</b> LOB, Ecole Polytechnique, CNRS, INSERM, Palaiseau, France	Kidney Stone Classification Using Multimodal Multiphoton Microscopy
12:20-13:20	<b>LUNCH BREAK</b>	

<b>SESSION XI</b>	<b>Chair: Igor MEGLINSKI, University of Aston, Birmingham, UK</b>	
13:20-13:50	<b>Gennadii PIAVCHENKO,</b> First Moscow State Medical University of I.M. Sechenov, Moscow, Russia	Polarization Microscopy and Its Application in Experimental and Translational Diagnostics of Heart Attack ( <b>Invited</b> )
13:50-14:10	<b>Tatjana GRIC,</b> Semiconductor Physics Institute, Center for Physical Sciences and Technology, Vilnius, Lithuania	Beam Steering with the Enhanced Hyperprism
14:10-14:40	<b>Anna YAROSLAVSKY,</b> University of Massachusetts Lowell, MA, USA	Rapid Optical Cytology for Thyroid Cancer Detection ( <b>Invited</b> )
14:40--14:50	<b>CLOSING REMARKS</b>	

<b>POSTER SESSION : September, 13<sup>th</sup>, 13:20-14:00, 17:10-18:30</b>	
<b>Sophie VO,</b> The Institute of Optics, University of Rochester, Rochester, USA	Analytical Expressions for Round Pulsed Scalar and Electromagnetic Spatiotemporal Optical Vortices
<b>Romain GROS,</b> Institute of Tissue Medicine and Pathology, University of Bern, Bern, Switzerland	Evolution of Polarimetric Properties of Brain Tissue With Time Following Formalin Fixation
<b>Isael HERRERA,</b> Aix Marseille University, CNRS, Centrale Marseille, Institut Fresnel, Marseille, France	Advantages of Circular Polarization Basis for PSF Engineering
<b>Michael SINGH,</b> Department of Medical Biophysics, University of Toronto, Toronto, ON, Canada	Polarized Light Responses to Scatterer Properties: toward Improved Tumour Detection and Characterization
<b>Poncia NYEMBO-KASONGO,</b> LOB, Ecole polytechnique, CNRS, Inserm, IP Paris, Palaiseau, France	Polarization-Resolved SHG Imaging: Characterization of the Human Cornea Lamellar Structure over Its Full Thickness
<b>Lidia ZAHARIEVA,</b> Institute of Electronics, Bulgarian Academy of Sciences, Sofia, Bulgaria	Evaluation of Skin Pathologies Through Confocal Fluorescence Laser Microscopy and Muller Microscopy
<b>Deyan IVANOV,</b> LPICM, CNRS, Ecole polytechnique, IP Paris, Palaiseau, France	Polarization-Based Digital Histology of Ex Vivo Skin Samples and Deep Learning
<b>Tsanislava GENOVA,</b> Institute of Electronics, Bulgarian Academy of Sciences, Sofia, Bulgaria	Utilizing Polarimetry to Characterize Tissue Samples Affected by Collagenosis
<b>Vanesa LUKINSONE,</b> University of Latvia, Riga, Latvia	Photon Propagation Measurements through Biological Tissue Utilizing Time-of-Flight Method