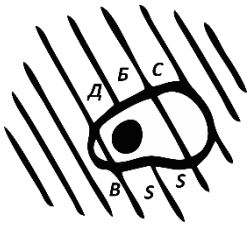

RBC

2026

Regional Biophysics Conference

P R O G R A M

1 – 4 June 2026

Belgrade, Serbia

Organized by the Biophysical Society of Serbia (BSS)

MONDAY • 1 June 2026

▶ PLENARY • INVITED • ORAL • ★ POSTER SESSION

TIME	HALL A — MAIN HALL
09:00	**Registration**
10:30 – 11:00	**Opening Ceremony**
11:00 – 11:45	▶ PLENARY LECTURE **Prof. Branimir Bertoša (Croatia)** **The Synergy of Computational and Experimental Research in Biophysics**
11:45 – 12:15	*Coffee Break*
12:15 – 13:45	**SESSION I · MOLECULAR AND STRUCTURAL BIOPHYSICS (MSB)** ***Chairs: Velia Minicozzi, Ana Popović-Bijelić***
12:15 – 12:40	INVITED **Bence Fehér** *Structural Investigation of Protein Assemblies with Small-Angle X-Ray Scattering*
12:40 – 13:05	INVITED **Paolo Calligari** *From Allosteric Activation to Targeted Inhibition: Multiscale Insights into the Multi-domain Phosphatase SHP2*
13:05 – 13:30	INVITED **Peter Galajda** *Studying bacterial ecosystems using engineered microfluidic habitats*
13:30 – 13:45	ORAL **Jelica Milošević** *The Effect of Peptide Diversity on Protein Amyloid Aggregation*
13:45 – 14:50	*Lunch Break*
14:50 – 15:35	▶ PLENARY LECTURE **Prof. György Panyi (Hungary)** **Molecular Pathology of Ion Channels in Diseases and Their Pharmacological Targeting**
15:35 – 17:25	**SESSION II · MEMBRANE AND CELL BIOPHYSICS (MCB)** ***Chairs: Anja Sadžak, Đura Nakarada***
15:35 – 16:00	INVITED **Maja Marušić** *Reshaping RNA: Bulges Guide High-Affinity PNA Triplex Formation*
16:00 – 16:25	INVITED **Miljko Satarić** *Calcium: A Life and Death Messenger*
16:25 – 16:40	ORAL **Marija Raguž** *Scanning Electron Microscopy Study of Multilamellar Vesicles Produced by the Rapid Solvent Exchange Method*
16:40 – 16:55	ORAL **Lukas Schrangl** *Synaptic Force Shielding in T-Cell Receptor–Ligand Interactions*
16:55 – 17:25	*Coffee Break*

17:25 – 18:20	**SESSION III · COMPUTATIONAL BIOPHYSICS (CB)** ***Chairs: Nataša Adžić, Branislav Jelenković***
17:25 – 17:50	INVITED **Stefan Milenković** *Physically Informed Machine Learning for DNA Sequence–Current Relationships*
17:50 – 18:05	ORAL **Miloš T. Ivanović** *A Multi-Scale View of Multicomponent IDP Condensates from Simulation and Experiment*
18:05 – 18:20	ORAL **Jasmina Sabolović** *DFT Conformational Analyses and Magnetic Properties of the Copper(II) Compounds With N-Alkylated And N,N-Dialkylated Amino Acids in Solutions*
18:20 – 20:00	**Welcome Party — Serbian Academy of Sciences and Arts Club**

TUESDAY • 2 June 2026

▶ PLENARY • INVITED • ORAL • ★ POSTER SESSION

TIME	HALL A — MAIN HALL
08:00	Registration
09:00 – 09:45	▶ PLENARY LECTURE **Prof. Valeria Vetri (Italy)** **Protein Self-Assembly at the Molecular Scale: From Interactions to Phase Separation**
09:45 – 10:55	**SESSION IV · BIOINFORMATICS (BI)** ***Chairs: Branimir Bertoša, Stefan Milenković***
09:45 – 10:10	INVITED **Marija Rakić** *Vitamin B Complex Suppresses Neuroinflammation in Activated Microglia: An Integrated In Vitro and In Silico Approach with Dynamical Modeling*
10:10 – 10:25	ORAL **Aleksandra Maršavelski** *Engineering Thermostable Ancestral Polyesterase for Efficient Bioplastic Degradation*
10:25 – 10:40	ORAL **Eugene Y. Smirnov** *PML Nuclear Bodies as Cellular Aging Markers: Morphological and Proteomic Analysis*
10:40 – 10:55	ORAL **Sofija Marković** *Reassessing the Predictive Value of the Global Health Security Index During the SARS-CoV-2 Omicron Wave*
11:00 – 11:30	*Coffee Break*
11:30 – 12:40	**SESSION V · NEUROBIOPHYSICS (NB)** ***Chairs: Miha Štorman, Pavle Anđus***
11:30 – 11:55	INVITED **Marko Gosak** *Collective β-Cell Dynamics under GABA Modulation: Integrating High-Resolution Confocal Imaging, Network Analysis, and Computational Modeling*
11:55 – 12:10	ORAL **Nóra Kucsápszky** *A brain-on-a-chip system integrating BBB cell types and brain cortical organoids from stem cells*
12:10 – 12:25	ORAL **Dejana Milošević** *Microscopic imaging of human multipolar neurons: computational and monofractal morphological characterization across the aging process*
12:25 – 12:40	ORAL **Zorana Jelesijević** *Detection of Age-Related Morphological Changes in Astrocyte Projections Using Multifractal Spectra*
12:40 – 12:50	★ **Sponsor Presentation Dr. Elena Dragicevic, Nanion Technologies** *Exploring Ion Channels and Transporters Using State-of-the-Art Electrophysiology*
12:50 – 14:50	★ **Poster Session I · Sections I, VI, IX** **(Molecular & Structural Biophysics · Medical Biophysics · Nanotechnology & Targeted Therapeutics)**
17:45	**Conference Group Photo at the Port, Karađorđeva 2 (before boarding)**
18:00	**Excursion: Boat trip**

WEDNESDAY • 3 June 2026

▶ PLENARY • INVITED • ORAL • ★ POSTER SESSION

TIME	HALL A — MAIN HALL
08:00	**Registration**
09:00 – 09:45	▶ PLENARY LECTURE **Dr. Tanja Dučić (Serbia)** **From Molecules to Meaning: Unlocking Cancer Across Scales with Synchrotron Techniques**
09:45 – 11:20	**SESSION VI · MEDICAL BIOPHYSICS (MB)** ***Chairs: Dejan Žikić, Nemanja Rajković***
09:45 – 10:10	INVITED **Aleksandar Jeremić** *Molecular and Dynamical Insights of Amylin Supramolecular Assembly and Aggregation: Implications for Pancreatic Amyloidosis and Diabetes Development*
10:10 – 10:35	INVITED **Biljana Smiljković** *Biophysical and Mathematical Approaches to Cardiovascular Age Estimation*
10:35 – 10:50	ORAL **Urban Železnik** *Intrinsic Mechanical Control of Tumor Spheroid Morphology and Rheology in a 3D Vertex Model*
10:50 – 11:05	ORAL **Nuno C. Santos** *From erythrocyte-based cardiovascular risk assessment to the development of a synthetic erythrocyte*
11:05 – 11:20	ORAL **Sofija Anđelić** *TRPV4 Modulates Mechanically Induced Calcium Waves in Human Lens Epithelium*
11:20 – 11:50	*Coffee Break*
11:50 – 13:10	**SESSION VII · BIOMIMETIC AND FUNCTIONAL INTERFACES (BFI)** ***Chairs: Nadica Ivošević DeNardis, Aleksandar Milovanović***
11:50 – 12:15	INVITED **Suzana Šegota** *Interaction Between Flavonoids and Membranes Under Oxidative Stress: Implications for Cell Membrane Integrity*
12:15 – 12:40	INVITED **Ida Delač** *Stability and Reversibility of Organic Molecule Modifications of Monolayer MoS_2*
12:40 – 12:55	ORAL **Alexander V. Fonin** *RNA-induced conformational changes of stress granules scaffold protein, G3BP1*
12:55 – 13:10	ORAL **Vladimir Vlatković** *The Examination of Cinnamic Acid Binding Interactions Strength to Human Serum Albumine Using Biomimetic Chromatography*
13:10 – 14:10	*Lunch Break*
14:10 – 14:55	▶ PLENARY LECTURE **Dr. Matej Krajnc (Slovenia)** **Tissue Mechanics: From Epithelia to Tumors**

14:55 – 16:00	**SESSION VIII · INNOVATIONS IN IMAGING AND SPECTROSCOPY (IIS)** ***Chairs: Bence Fehér, Miloš Mojović***	
14:55 – 15:20	**INVITED Branislav Jelenković** *Quantum Techniques for Biomedical Imaging*	
15:20 – 15:45	**INVITED Dragana Bartolić** *Biophysical Approaches to Stress Assessment: Tracking Xenobiotic Toxicity in Fertilized Fish Eggs*	
15:45 – 16:00	**ORAL Alexander Einschütz López** *Softening of Vero Cells Induced by Measles Vaccine Virus*	
16:00 – 16:30	*Coffee Break*	
16:30 – 17:35	**SESSION IX · NANOTECHNOLOGY AND TARGETED THERAPEUTICS (NTT)** ***Chairs: Paolo Calligari, Ksenija Radotić***	
16:30 – 16:55	**INVITED Caterina Ricci** *Magnetically Responsive Biomaterials: Structural Modulation in Pathological Environments*	
16:55 – 17:20	**INVITED Daniela Uhríková** *Exogenous Lung Surfactant as a Drug Delivery System: Structure and Thermodynamics*	
17:20 – 17:35	**ORAL Anamarija Abu el Rub** *Hybrid Palladium-Tryptophan-Solid Lipid Nanoparticles: Synthesis, Characterization and Imaging Study*	
20:00	**Gala Dinner (Dva Jelena, Skadarska 32, Belgrade)**	

THURSDAY • 4 June 2026

▶ PLENARY • INVITED • ORAL • ★ POSTER SESSION

TIME	HALL A — MAIN HALL
09:00 – 09:45	▶ PLENARY LECTURE **Dr. Katarina Stroffekova (Slovakia)** **Photobiomodulation Effect on α-Synuclein Aggregates and Autophagy in Parkinson's-Like Cells and Possible Implications for Treatment of Neurodegenerative Diseases**
09:45 – 10:25	**SESSION X · SYSTEMS BIOPHYSICS (SB)** ***Chairs: Miklos Kellermayer, Milena Milošević***
09:45 – 10:10	INVITED **Michal Šimera** *Central Regulation of the Cough Reflex*
10:10 – 10:25	ORAL **Luíza Santa Brígida de Barros Góes** *Engineering a Multi-Organ Microphysiological Platform with Integrated Impedance Monitoring for Quantitative Barrier Characterization*
10:25 – 12:25	★ **Poster Session II · Sections II, III, V, VII, VIII, X, XI** **(Membrane & Cell Biophysics · Computational Biophysics · Neurobiophysics · Biomimetic & Functional Interfaces · Innovations in Imaging & Spectroscopy · Systems Biophysics · Cellular Mechanics & Biophysical Regulation)**
12:30 – 13:00	*Coffee Break*
13:00 – 14:15	**SESSION XI · CELLULAR MECHANICS AND BIOPHYSICAL REGULATION (CMR)** ***Chairs: Jasna Simonović Radosavljević, Dragana Bartolić***
13:00 – 13:15	ORAL **Miklós Kellermayer** (Session I) *Liquid-Liquid Phase Separation by the Intrinsically Disordered PEVK Domain of the Giant Muscle Protein Titin*
13:15 – 13.30	ORAL **Nadica Ivošević DeNardis** *Environmental Stress-Induced Changes in Microalgal Properties and Behavior*
13:30 – 13:45	ORAL **Jan Rozman** *Why Extensile and Contractile Tissues Could be Hard to Tell Apart*
13:45 – 14:00	ORAL **Toshikaze Chiba** *Tissue Fluidization Driven by Basal Self-propulsion in Three-dimensional Epithelial Monolayers*
14:00 – 14:15	ORAL **Antonella Macías** *Mechanistic Insights Into β-Casein–Curcumin Interactions: A Concentration-Based Approach*
14:15 – 14:30	**Closing Ceremony**

POSTER SESSION I • Tuesday, 2 June 2026 · 12:50 – 14:50

Sections I, VI, IX · Molecular & Structural Biophysics • Medical Biophysics • Nanotechnology & Targeted Therapeutics

CODE	PRESENTING AUTHOR	TITLE
Section I · Molecular and Structural Biophysics (MSB)		
MSB-P1	**Zuzana Bednarikova**	*Disordered LEA Proteins as Regulators of $A\beta_{40}$ Amyloid Aggregation: Targeting Secondary Nucleation in Fibril Formation*
MSB-P2	**Sára Mikuličová**	*Validation of Acoustic Detection of Myelin Basic Protein (MBP)*
MSB-P3	**Ivana Kekez**	*From Flexibility to Crystals: Structural and Biophysical Characterization of a Thermostable Metagenomic Esterase*
MSB-P4	**Roberta Piacentini**	*Perylene Bisimide Derivatives in Water Solutions, Effects of NaCl on Aggregation Kinetics and Spectroscopic Properties*
MSB-P5	**Peter Zimovcak**	*Effects of Choline Chloride-Based Deep Eutectic Solvents on the Structure and Thermal Stability of Lysozyme*
MSB-P6	**Negar Rahimi**	*Tuning the Structure and Nanomechanics of κ-Casein Amyloid Fibrils with Food-Grade Osmolytes*
MSB-P7	**Nevena Preradović**	*Bioactive Phenolics in Picea omorika Knot Extracts*
MSB-P8	**Ana Pantelić**	*Structural Insights Into the Ramonda serbica LEA4 Protein Family*
MSB-P9	**Viktoria Relovska**	*Cytochrome c as a Modulator of Amyloid-β Aggregation and Fibril Stability*
MSB-P10	**Silvia – Maria Franov**	*Structural and Dynamical Changes of the Streptococcus Pyogenes Transcriptional Regulator Mtsr Induced by Mn^{2+} Binding*

MSB-P11	**Katarina Siposova**	*Fullerene-Phytocompound Composites as Anti-Amyloid Agents: Insights From Structural and Dynamical Studies*
MSB-P12	**Ondrej Cehlar**	*Disordered Oligomers Formed by Truncated Tau Proteins*
MSB-P13	**Tatiana Ilina**	*Disorder-to-Order Transition of LEA4 Family Proteins in Ramonda serbica*
Section VI · Medical Biophysics (MB)		
MB-P1	**Alexandra Poliaková**	*Protein-based HER2 targeting using DARPin–AsLOV2C450A photosensitizing conjugate*
MB-P2	**Kristína Felčíková**	*Development of Effective Genetically Encoded Light-Responsive Systems for Biomedical Applications*
MB-P3	**Aleksandra Markoski Smiljković**	*Biophysical Effects of Laser Wavelength and Pulse Duration on Skin: Comparative Analysis of Picosecond and Millisecond Lasers*
MB-P4	**Bojana Stojadinović**	*Pressure as a Determinant of Pulse Wave Velocity: Experimental Evidence Supporting the Clinical Link Between Arterial Stiffness and Hypertension*
MB-P5	**Ljubica Ilić**	*Influence of Diastolic Pressure on Pulse Wave Reflection in a Biophysical Model of the Cardiovascular System*
MB-P6	**Andrea Antošová**	*Anticancer, Antioxidant, and Insulin Anti-Amyloid Activities of Newly Synthesized Bis-Indoles*
MB-P7	**Tomáš Holka**	*Label-Free Electrochemical and QCM Aptasensors for Sensitive MicroRNA Detection as a Promising Tool for Cancer Diagnosis*
MB-P8	**Katarina Meštrović**	*Differential Effects Of cGMP on Ca2+ Signaling in Pulmonary and Mesenteric Artery Smooth Muscle Cells: A Theoretical Modeling Study*

MB-P9	**Marko Pajić**	*An Educational Arterial Model for Demonstrating Pulse Wave Propagation in Cardiovascular Biophysics*
MB-P10	**Isidora Janićijević -Grubišić**	*Biophysical Assesment of Vascular Ageing Through Continuous Pulse Waveform Analysis and Quantitative Retinal Microvascular assessment*
MB-P11	**Miroslav Gancar**	*Multi-Target Alzheimer's Disease Compounds Identified by AI: Evaluation of Systems-Level Predictions and Direct Biochemical Activity*
MB-P12	**Katarína Čechová**	*Cryoprotectant Concentration Reveals Hidden Functional Stress in Cryopreserved Human Keratinocytes*
Section IX · Nanotechnology and Targeted Therapeutics (NTT)		
NTT-P1	**Matúš Gális**	*Linear cell system for drug transport studies*
NTT-P2	**Patrick Mydla**	*Qualitative and quantitative insights into dendritic nanoparticle–blood interactions: a comparison of titration and separate-aliquot designs*
NTT-P3	**Máté Farkas**	*Simulation and experiments of microelectrode geometry effects on dielectrophoretic particle collection in microfluidic devices*
NTT-P4	**Miljan Barić**	*Lignin-based nanoparticles within poloxamer hydrogels for cancer treatment*
NTT-P5	**Anabela Dragićević**	*Antioxidant Activity of Pinus nigra and Juniperus communis Extracts: Toward Nanomaterial Applications and Redox Modulation*
NTT-P6	**Dunja Banđur**	*Effects of Boron- and Nitrogen-Doped Carbon Dots on Triticum aestivum L. Growth and Oxidative status*
NTT-P7	**Katarina Nestorovic**	*Revealing Thermal Management in the Natural World by Holography*

NTT-P8	**Katarina Žikić**	*Single-Photon Detection of Quantum Emitters: Towards Biophysical Sensing*
NTT-P9	**Barnabás Tóth**	*A Standardized Magnetic Separation Workflow to Reduce Batch-to-Batch Variability in Functionalized Nanoparticle Production*
NTT-P10	**Sara Lukač**	*Antioxidant Activity and Colloidal Stability of Chia Mucilage-Coated Cr_2O_3 Nanoparticles as Redox Modulators: An EPR and Zeta Potential Study*
NTT-P11	**Mladen Duran**	*Antioxidant Activity of Liposome-Encapsulated Eryngium Amethystinum Extract: Implications for Honey Bee Studies*

POSTER SESSION II • Thursday, 4 June 2026 · 10:25 – 12:25

Sections II, III, V, VII, VIII, X, XI · Membrane & Cell Biophysics • Computational Biophysics • Neurobiophysics • Biomimetic & Functional Interfaces • Innovations in Imaging & Spectroscopy • Systems Biophysics • Cellular Mechanics & Biophysical Regulation

CODE	PRESENTING AUTHOR	TITLE
Section II · Membrane and Cell Biophysics (MCB)		
MCB-P1	**Aleksandar Milovanović**	*Characterization of a Novel Hyperpolarization-Activated Delayed Anion Current (Hadac) in Plasma Membrane of the Filamentous Fungus Phycomyces Blakesleeanus*
MCB-P2	**Dragan M. Popović**	*Energy Profile of Proton Pumping Mechanism in Mammalian Cytochrome c Oxidase under the Influence of Membrane Electrochemical Gradient*
MCB-P3	**Anja Sadžak**	*Oxidative Degradation of Polyunsaturated Lipid Membranes: Structural Changes, Mechanistic Insights and Flavonoid Protection*
MCB-P4	**Shahrukh Husain**	*Effect of Dipole Potential Modulators Phloretin and 6-Ketocholestanol on Membrane Potential*

MCB-P5	**Đura Nakarada**	*Exploring Liposome-Encapsulated Schiff Bases as Antioxidants for Honey Bee Health*
MCB-P6	**Megi Tinev**	*Toward High-Throughput Characterization of Giant Unilamellar Vesicles by Real-Time Deformability Cytometry*
MCB-P7	**Elisa Bonaccorso**	*Infrared Vibrational Signatures of Disease-Induced Perturbations in Membrane Hydration Water*
Section III · Computational Biophysics (CB)		
CB-P1	**Nataša Adžić**	*A Dance Story of Two Anisotropicaly Charged Colloids in an Asymmetric Ionic Solution*
CB-P2	**Amna Waheed**	*Prediction of Ryanodine Receptor States by the AlphaFold3 Server*
CB-P3	**Boris Gomaz**	*A Molecular Dynamics Workflow for Modelling the E. Coli Cell Wall*
CB-P4	**Milica Popović**	*Probing the Interaction of Ghrelin With the Human L-Type Calcium Channel Cav1.2 by Molecular Docking*
CB-P5	**Matej Kožić**	*Molecular Dynamics study of DNA interactions with inner E. Coli membrane*
CB-P6	**Aleksandra Bibić**	*Comparative Evaluation of Different Neural Network Architectures in Rectal Tumor Diagnosis on CT Images*
Section V · Neurobiophysics (NB)		
NB-P1	**Miha Štorman**	*Noise-Induced Resonance in a Model of the Hypothalamic–Pituitary–Adrenal Axis*
NB-P2	**Stefana Dejković**	*Priming the Defense: Low-Dose Irradiation Rapidly Activates Antioxidant Systems in BV2 Cells*

Section VII · Biomimetic and Functional Interfaces (BFI)		
BFI-P1	**Tomas Biro**	*Lysozyme and Spider Silk Amyloid Fibrils as Building Blocks for Novel Hydrogels*
BFI-P2	**Bojan Božič**	*Catalogue of shapes for prolate lipid vesicles with relative volumes below that of the twin shape*
BFI-P3	**Mateo Šerić**	*Electroformation of Giant Unilamellar Vesicles with High Cholesterol Contents from Damp Lipid Films under Physiological Conditions*
BFI-P4	**Stefan Jelisić**	*EPR Evaluation of Antioxidant Liposomal Chaga Extracts from Different Origins with Potential Relevance for Honeybee Oxidative Stress*
BFI-P5	**Ana Popović Bijelić**	*Tuning the Size of Protein-Based Physical Nanogels: The Role of pH and Ionic Strength*
BFI-P6	**Michaela Hornychová**	*Diamond vs. Gold: Interfacial Stability and Performance of QCM-Aptasensors for Oncogenic miRNA Detection*
Section VIII · Innovations in Imaging and Spectroscopy (IIS)		
IIS-P1	**Mária Klacsová**	*The interaction of SARS-CoV-2 antivirals with lipid systems: structural study*
IIS-P2	**Sara Sardou**	*Stability Assessment of Engineered Flagellar Filaments for Biosensing Applications*
IIS-P3	**Viktória Szebellaiová**	*Aptamer-Based Imaging Approaches for Cancer Detection*
IIS-P4	**Ágnes Ábrahám**	*Generation Gap in Microbial Societies: Do Older Bacteria Communicate Differently Than Younger Ones?*
IIS-P5	**Damjan Stojić**	*Study of Collagen in Ligament Flavum by Polarized Second Harmonic Generation Microscopy*

IIS-P6	**Gergely T. Iványi**	*Optical waveguides deformed by guided light*
IIS-P7	**Luis N. Ponce-Gonzalez**	*Force and Solvent Effect on Protein Unfolding*
IIS-P8	**Anastasiia Gavrilova**	*The Role of Non-coding RNAs in Nucleolar Reorganization Under Stress*
Section X · Systems Biophysics (SB)		
SB-P1	**Uroš Barać**	*Multiscale synchronization in beta-cell networks: network analysis of cellular oscillations and secretion dynamics*
SB-P2	**Andrej Dobovišek**	*MEPP as a Structural Consequence of Thermodynamic Symmetry in Enzymatic Cycles*
Section XI · Cellular Mechanics and Biophysical Regulation (CMR)		
CMR-P1	**Urška Andrenšek**	*Surface Tension-Driven Elasticity of Circular Epithelia*
CMR-P2	**Jasna Simonović Radosavljević**	*FTIR Spectroscopy – Derived Insights into Cell Wall Remodeling in Twining Stems of Dioscorea balcanica*