ORAL PROGRAMME

The time allocated for each oral presentation includes time for questions and discussion.

Monday, June 23th, 2025 (in Polish)	
Room	*Congress foyer*
14.00	REGISTRATION AND LUNCH
Room	*Auditorium 0.03*
16.00-16.20	WELCOME AND INTRODUCTION TO THE CONGRESS **Beata Wielgus-Kutrowska** and **Piotr Bednarczyk**
Plenary Lecture	
Chair	**Krzysztof Dołowy** Warsaw University of Life Sciences, Warsaw, Poland
16.20-16.50	WHEN YOU LOOK DEEP INTO THE HUMAN EYE… A BIOPHYSICIST'S PERSPECTIVE. **Wiesław Gruszecki** Maria Curie-Skłodowska University, Lublin, Poland
16.50-17.20	ROOM TEMPERATURE PHOSPHORESCENCE WITH DIRECT TRIPLET STATE EXCITATION **Ignacy Gryczyński** Texas Christian University, Texas, USA
17.20-17.50	**Award of the Polish Biophysical Society (PTBF)** **David Shugar Medal**
Chair	**Wiesław Gruszecki** Maria Curie-Skłodowska University, Lublin, Poland
17.50-18.05	TRIBUTE TO DAVID SHUGAR **Bogdan Lesyng** University of Warsaw, Warsaw, Poland
18.05-18.20	ABOUT POLISH BIOPHYSICAL CENTERS **Krzysztof Dołowy** Warsaw University of Life Sciences, Warsaw, Poland
18.20-18.50	**Performance:** **Choir of the Department of Physics, University of Warsaw**
18.50	WELCOME PARTY

Tuesday, June 24th, 2025	
Room	*Auditorium 0.03*
Session I - Nanomedicine – biophysical aspects	
Chair	**Barbara Klajnert-Maculewicz and Katarzyna Miłowska** University of Lodz, Lodz, Poland
9.15-9.40	CONJUGATES OF DNA AND BORON CLUSTERS AS BUILDING BLOCKS FOR NANOPARTICLE CARRIERS OF THERAPEUTIC NUCLEIC ACIDS WITH GENE SILENCING ACTIVITIES **Zbigniew J. Leśnikowski** Institute of Medical Biology, PAS, Lodz, Poland
9.40-10.05	CELL RESPONSE DRIVEN BY SURFACE CHEMISTRY AND CHARGES ON ELECTROSPUN POLYMER NANOFIBERS **Urszula Stachewicz** AGH University of Krakow, Krakow, Poland
10.05-10.25	REENGINEERING OF A BACTERIAL COMPARTMENT INTO TAILORABLE BIONANOMATERIALS **Yusuke Azuma** Jagiellonian University, Krakow, Poland
10.25-10.45	NANOCARRIER-BASED DELIVERY OF ROSE BENGAL FOR ENHANCED PHOTODYNAMIC THERAPY OF BASAL CELL CARCINOMA **Barbara Klajnert-Maculewicz** University of Lodz, Lodz, Poland
10.45-11.05	PEPTIDOOLIPOSOMAL FORMULATIONS FOR ANTIVIRAL THERAPIES **Aleksander Czogalla** University of Wroclaw, Wroclaw, Poland
11.05-11.20	HOTTER TOGETHER: BOOSTING HYPERTHERMIA EFFICIENCY THROUGH INTER-PARTICLE INTERACTIONS **Adrian Radoń** Łukasiewicz Research Network – Institute of Non-Ferrous Metals, Gliwice, Poland
11.20-11.40	RENISHAW Lecture: RAMAN SPECTROSCOPY - A MODERN TOOL FOR LIFE SCIENCE APPLICATIONS **Agnieszka Sozańska**

11.40-11.55	COFFEE BREAK
Room	*Auditorium 0.03*
Session II - Life-essential biomolecules	
Chair	**Bartłomiej Zapotoczny** Institute of Nuclear Physics, PAS, Krakow, Poland **Jacek Plewka** Jagiellonian University, Krakow, Poland
11.55-12.20	FROM MDa TO kDa – ACROSS THE SCALE OF THE cryoEM SPA ANALYSIS OF BIOLOGICAL MOLECULES **Artur Biela** National Synchrotron Radiation Centre SOLARIS, Jagiellonian University, Krakow, Poland
12.20-12.40	pH-RESPONSIVE CHLOROPHYLL DERIVATIVES-MODIFIED LIPOSOMES FOR DOXORUBICIN DELIVERY **Katarzyna Wiktorska** Warsaw University of Life Sciences, Warsaw, Poland
12.40-13.00	X-RAY SYNCHROTRON AND NEUTRON SCATTERING STUDIES OF BIOMEMBRANE-PROTEIN INTERACTIONS AT AIR-LIQUID AND SOLID-LIQUID INTERFACES **Jarosław Majewski** University of New Mexico, New Mexico, USA Los Alamos National Laboratory, New Mexico, USA University of Warsaw, Warsaw, Poland
13.00-13.20	LIPID DROPLETS IN VASCULAR DYSFUNCTION **Marta Z. Pacia** Jagiellonian University, Jagiellonian Centre for Experimental Therapeutics (JCET), Krakow, Poland
13.20-13.35	ANTIGEN BINDING TO SURFACE IMMOBILIZED ANTIBODIES: Tof-SIMS EXAMINATION OF THE IgG ORIENTATION AND IMMOBILIZATION STABILITY **Katarzyna Gajos** Jagiellonian University, Krakow, Poland
13.35-13.50	HEME AND HEME OXYGENASES – NOVEL ACTIVITIES OF OLD FRIENDS **Witold Nowak** Jagiellonian University, Krakow University of Silesia in Katowice, Chorzow, Poland
13.50-14.00	PTBF2025 CONGRESS GROUP PHOTO

14.00-15.10	LUNCH
Room	*Auditorium 0.03*
15.10-15.30	NCBJ Workshop: PolFEL: A NEW FRONTIER FOR RESEARCH AND INNOVATION IN POLAND **Katarzyna Nowakowska-Langier** National Centre of Nuclear Research, Warsaw, Poland
Session III - Biophysics of biological systems: from cells to tissues	
Chair	**Marta Z. Pacia** Jagiellonian University, JCET, Krakow, Poland **Artur Biela** Jagiellonian University, Krakow, Poland
15.30-15.55	MIND THE GAP! BIOMOLECULES IN PLASMONIC NANOCAVITY **Ewelina Lipiec** Jagiellonian University, Krakow, Poland
15.55-16.15	DEVELOPMENT OF NOVEL OPTICAL MICROSCOPY METHODS TO STUDY CELL MIGRATION **Zenon Rajfur** Jagiellonian University, Krakow, Poland
16.15-16.35	CORRELATIVE AFM–OPTICAL NANOSCOPY FOR POLYPHARMACY STUDIES IN HEPATIC ENDOTHELIUM **Bartłomiej Zapotoczny** Institute of Nuclear Physics, PAS, Krakow, Poland
16.35-16.50	THE IMPACT OF 3D MICROENVIRONMENT RHEOLOGY ON CELL INVASION ACCOMPANIED BY PROTEIN EXPRESSION CHANGES IN CANCER SPHEROIDS **Sara Metwally** Institute of Nuclear Physics, PAS, Krakow, Poland
16.50-17.05	HOW TISSUE STIFFNESS AFFECTS MICROGLIAL MIGRATION AND MORPHOLOGY **Monika Szczepanek-Dulska** Institute of Nuclear Physics, PAS, Krakow, Poland
17.05-17.20	COFFEE BREAK

Room	*Auditorium 0.03*
Session IV - Medicinal biophysics	
Chair	**Anna Marcinkowska-Gapińska** University of Medical Sciences in Poznan, Poznan, Poland **Piotr Bojarski** University of Gdansk, Gdansk, Poland
17.20-17.45	PREDICTING PATIENT HEALTH TRAJECTORIES WITH FOUNDATION MODELS: A NEW FRONTIER IN COMPUTATIONAL MEDICINE **Arkadiusz Sitek** Massachusetts General Hospital and Harvard Medical School, Massachusetts, USA
17.45-18.05	PERSPECTIVES OF THE USE OF HEMORHEOLOGICAL TESTS IN MEDICAL DIAGNOSTICS **Anna Marcinkowska-Gapińska** University of Medical Sciences in Poznan, Poznan, Poland
18.05-18.20	EXPRESSION AND FUNCTIONAL ROLE OF TRPV1 CHANNELS IN T LYMPHOCYTES: IMPLICATIONS FOR IMMUNE REGULATION **Joanna K. Bujak** Warsaw University of Life Sciences, Warsaw, Poland
18.20-18.35	TIME-DEPENDENT REVERSAL OF HIGH-FAT DIET-INDUCED INSULIN RESISTANCE, PERIVASCULAR ADIPOSE TISSUE BIOCHEMICAL CHANGES IN RELATION TO ENDOTHELIAL (DYS)FUNCTION **Krzysztof Czamara** Jagiellonian Centre for Experimental Therapeutics (JCET), Jagiellonian University, Krakow, Poland
18.35-18.45	OXIDATIVE STRESS CAUSED BY ACROLEIN AND GLYOXAL IN MONONUCLEAR HUMAN BLOOD CELLS **Michał Kopera** University of Lodz, Lodz, Poland

Room	*Auditorium 0.03*
18.45-19.15	KAWASKA Lecture - PicoQuant ENABLING SINGLE PHOTON COUNTING MICROSCOPY APPLICATIONS **Mathias Bayer**
19.15–19.30	DEVELOPING A SCIENTIFIC CAREER WITH THE ALEXANDER VON HUMBOLDT FOUNDATION (in Polish) **Ewa Wojno-Owczarska** University of Warsaw/Secretary General of the Societas Humboldtiana Polonorum, Warsaw, Poland
19.30-21.00	POSTER SESSION AND REFRESHMENTS

	Wednesday, June 25th, 2025
Room	*Auditorium 0.03*
Session V - Ion channel in cell biophysics	
Chair	**Jerzy Mozrzymas** Wroclaw Medical University, Wroclaw, Poland **Piotr Bednarczyk** Warsaw University of Life Sciences, Warsaw, Poland
8.15-8.40	MAPPING SPATIAL ORGANIZATION OF FUNCTIONAL INPUTS IN VALENCE-RELATED AMYGDALO-HIPPOCAMPAL CIRCUITS **Andrea Barberis** Istituto Italiano di tecnologia, Genova, Italy
8.40-9.00	EXCITATORY EFFECTS OF METABOTROPIC RECEPTORS IN NEOCORTICAL VASOACTIVE INTESTINAL POLYPEPTIDE-EXPRESSING INTERNEURONS **Joanna Urban-Ciećko** Nencki Institute of Experimental Biology, PAS, Warsaw, Poland
9.00-9.20	A DETERMINISTIC MODEL OF NICOTINIC RECEPTOR FUNCTION: A SHIFT FROM STOCHASTIC PARADIGMS **Ewa Nurowska** Medical University of Warsaw, Warsaw, Poland
9.20-9.35	STRUCTURE-FUNCTION RELATIONSHIP OF THE GABA TYPE A RECEPTOR. **Michał A. Michałowski** Wroclaw Medical University, Wroclaw, Poland
9.35-9.50	THE EFFECTS OF 17β-ESTRADIOL AND PROGESTERONE ON THE BK CHANNEL ACTIVITY IN HUMAN GLIOBLASTOMA CELLS **Agata Wawrzkiewicz-Jałowiecka** Silesian University of Technology, Gliwice, Poland
9.50–10.15	KAWASKA Lecture - LUMINOSA ENABLING SINGLE MOLECULE SUPERRESOLUTION WITH FLIM **Mathias Bayer**
10.15-10.30	Coffee break

Room	*Auditorium 0.03*
Session VI - Medical significance of proteins and nucleic acids	
Chair	**Renata Grzela** University of Warsaw, Warsaw, Poland
10.30-10.55	ATOMIC-RESOLUTION STRUCTURAL INSIGHTS INTO NATURALLY-CRYSTALLINE PROTEINACOUS MOSQUITOCIDES **Jacques-Philippe Colletier** Institut de Biologie Structurale, Grenoble, France
10.55-11.10	BKCa CHANNEL AS A NOVEL MODULATOR OF DNA DAMAGE RESPONSE IN HUMAN BRONCHIAL EPITHELIAL CELLS EXPOSED TO PARTICULATE MATTER **Kamila Maliszewska-Olejniczak** Warsaw University of Life Sciences, Warsaw, Poland
11.10-11.25	STRUCTURE-GUIDED STABILIZATION OF MEMBRANE-ACTIVE PEPTIDES AS A STRATEGY TO COMBAT ANTIBIOTIC RESISTANCE **Monika Wojciechowska** University of Warsaw, Centre of New Technologies, Warsaw Poland
11.25-11.40	BICARBONATE TRANSPORT CORRECTION DRIVES CLINICAL BENEFIT OF ELEXACAFTOR/ TEZACAFTOR/IVACAFTOR IN F508del-CF **Mirosław Zając** Institut Necker Enfants Malades, Paris, France Université Paris Cité, Paris, France Hôpital Necker Enfants Malades. Assistance Publique Hôpitaux de Paris, Paris, France Warsaw University of Life Sciences, Warsaw, Poland
11.40-11.55	METALLIC NANOPARTICLES AS POTENTIAL MODULATORS OF ANTICANCER THERAPY **Grzegorz Gołuński** University of Gdansk, Gdansk, Poland

Room	*Auditorium 0.03*
Session VII - Spectroscopy – ideas, methods, and applications in life science	
Chair	**Beata Wielgus-Kutrowska** University of Warsaw, Warsaw, Poland
11.55-12.20	PROTEINS: NEW AVENUES FOR THE DESIGN OF OPTICAL BIOSENSORS **Sabato D'Auria** National Research Council of Italy, Avellino, Italy
12.20-12.40	WHAT VESICLES REMEMBER: NANOSCALE TRACES OF CELLULAR IDENTITY IN PLASMA MEMBRANE MODELS **Katarzyna Pogoda** Institute of Nuclear Physics, PAS, Krakow, Poland
12.40-12.55	PROBING THE IMPACT OF CANNABIDIOL ON CELLULAR LIPID DYNAMICS VIA VIBRATIONAL SPECTROSCOPY **Karolina Chrabąszcz** Institute of Nuclear Physics, PAS, Krakow, Poland
12.55-13.10	THE LASING SPECTROSCOPY IN STUDIES ON PROTEIN AGGREGATION LINKED WITH NEURODEGENERATIVE DISEASES **Piotr Hańczyc** University of Warsaw, Warsaw, Poland Warsaw University of Life Sciences, Warsaw, Poland
13.10-13.25	THE MOBILITY OF EGFP CHROMOPHORE: ENVIRONMENTAL INFLUENCE ON FLUORESCENCE LIFETIME AND ANISOTROPY DECAY **Joanna Krasowska** University of Warsaw, Warsaw, Poland
13.25-14.30	LUNCH

Room	*Auditorium 0.03*
Session VIII - Biosensing and microfluidic systems for disease biomarkers detection in biomedical research	
Chair	**Magdalena Stobiecka** and **Sławomir Jakiela** Warsaw University of Life Sciences, Warsaw, Poland
14.30-14.55	FROM CELLS-ON-A-CHIP TO ORGAN-ON-A-CHIP – NEW DEVICES AND TOOLS FOR PRECLINICAL STUDIES **Zbigniew Brzózka** Warsaw University of Technology, Warsaw, Poland
14.55-15.15	ELECTROCHEMICAL BIOSENSORS FOR MULTIPLE BIOMARKERS DETECTION **Iwona Grabowska** Institute of Animal Reproduction and Food Research of Polish Academy of Sciences, Olsztyn, Poland
15.15-15.35	ADVANCED MICROFLUIDIC STRATEGIES FOR DROPLET HANDLING AND BIOMEDICAL APPLICATIONS **Piotr M. Korczyk** Institute of Fundamental Technological Research, PAS, Warsaw, Poland
15.35-15-50	ELECTROCHEMICAL RNA-BASED APTASENSOR FOR NEOMYCIN DETECTION IN MILK SAMPLES **Katarzyna Kurzątkowska-Adaszyńska** Institute of Animal Reproduction and Food Research of Polish Academy of Sciences, Olsztyn, Poland
15.50-16.00	MONITORING OF THE MITOCHONDRIAL NETWORK IN A CELLULAR MODEL OF PARKINSON'S DISEASE UNDER THE INFLUENCE OF MDIVI-1 **Julia Anchimowicz** Warsaw University of Life Sciences, Warsaw, Poland
16.00-18.00	General Meeting of Polish Biophysical Society (in Polish)
18.00-19.00	TRANSFER
19.00	VISTULA RIVER CRUISE and GALA DINNER

Thursday, June 26th, 2025	
Room	*Auditorium 0.03*
Session IX - Biophysics of mitochondria	
Chair	**Adam Szewczyk** and **Bogusz Kulawiak** Nencki Institute of Experimental Biology, PAS, Warsaw, Poland
9.00-9.25	STUDIES IN YEAST REVEALED A MOLECULAR MECHANISM OF NEURODEGENERATIVE DISEASES LINKED TO *MT-ATP6* MUTATIONS **Róża Kucharczyk** Institute of Biochemistry and Biophysics, PAS, Warsaw, Poland
9.25-9.45	PUZZLING PATH OF POTASSIUM INFLUX INTO MITOCHONDRIA – THE STORY OF mitoK_{ATP} **Piotr Koprowski** Nencki Institute of Experimental Biology, PAS, Warsaw, Poland
9.45-10.05	ENHANCING ANTIPLATELET EFFICACY THROUGH BIOENERGETIC MODULATION: COMBINED INHIBITION OF GLYCOLYSIS AND OXIDATIVE PHOSPHORYLATION **Patrycja Kaczara** Jagiellonian Centre for Experimental Therapeutics (JCET), Jagiellonian University, Krakow, Poland
10.05-10.15	UNRAVELLING METABOLIC DISRUPTIONS IN MPAN DISEASE – INSIGHTS FROM PATIENTS FIBROBLASTS **Agata Wydrych** Nencki Institute of Experimental Biology, PAS, Warsaw, Poland
10.15-10.25	LIGHT-MEDIATED ACTIVATION OF MITOCHONDRIAL BK_{Ca} CHANNEL PROTECTS GUINEA PIG CARDIOMYOCYTES AGAINST HYPOXIC INJURY **Joanna Lewandowska** Nencki Institute of Experimental Biology, PAS, Warsaw, Poland
10.25-10.40	COFFEE BREAK

Room	*Auditorium 0.03*
Session X - Protein dynamics, disorder, and phase separation	
Chair	**Anna Niedźwiecka** Institute of Physics, PAS, Warsaw, Poland
10.40-11.05	THE ROLE OF PHASE SEPARATION IN REGULATING ANIMAL GENE EXPRESSION **Adam Kłosin** Nencki Institute of Experimental Biology, PAS, Warsaw, Poland
11.05-11.30	ENHANCING GŌMARTINI 3 APPROACH FOR THE STUDY OF CONFORMATIONAL CHANGES IN LARGE-SCALE BIOMOLECULAR ASSEMBLIES **Adolfo Poma Bernaola** Institute of Fundamental Technological Research, PAS, Warsaw, Poland
11.30-11.45	BACK TO FIRST PRINCIPLES: MODELS OF INTRINSICALLY DISORDERED PROTEIN CONFORMATIONS **Radost Waszkiewicz** Institute of Physics, PAS, Warsaw, Poland
11.45-12.05	THE DEVIL IS IN DETAILS – PROTEIN HDX REVEALS CRITICAL CHANGES IN DYNAMICS UNDERLYING PROTEIN FUNCTIONAL DIFFERENCES **Michał Dadlez** Institute of Biochemistry and Biophysics, PAS, Warsaw, Poland
12.05-12.20	IN OR OUT? GW182 SD JOINS THE BIOMOLECULAR CONDENSATES PARTY IN miRNA-MEDIATED GENE SILENCING **Michał Białobrzewski** Institute of Physics, PAS, Warsaw, Poland
12.20-12.35	LOOKING FOR MOLECULAR MECHANISMS OF THE CYTOPROTECTIVE ROLE OF NPAS4 **Beata Greb-Markiewicz** Wroclaw University of Science and Technology, Wroclaw, Poland
12.35-13.35	LUNCH

Room	*Auditorium 0.03*
SESSION XI – Theoretical, computational, and data-driven advances in biophysics	
Chair	**Bogdan Lesyng** University of Warsaw, Warsaw, Poland
13.35-14.00	HOW MACHINE LEARNING ALLOWS TO RECONSTRUCT CARDIOMYOCYTE ACTION POTENTIAL FROM THE SURFACE OF THE BODY **Teodor Buchner** Warsaw University of Technology, Warsaw, Poland
14.00-14.20	DEEP LEARNING FOR MEDICAL DIAGNOSIS **Szymon Płotka** University of Warsaw, Warsaw, Poland
14.20-14.40	FROM ROSENBLATT'S PERCEPTRON TO JUMPER'S ALPHAFOLD **Szymon Nowakowski** University of Warsaw, Warsaw, Poland
14.40-15.00	COMPUTATIONAL ICNSIGHTS INTO TARGETING PTERIDINE REDUCTASE 1, A KEY ENZYME FROM PATHOGENIC TRYPANOSOMATIDS **Joanna Panecka-Hofman** University of Warsaw, Warsaw, Poland HITS, Heidelberg, Germany
15.00-15.15	SimDNA: A COARSE-GRAINED METHOD FOR DNA FOLDING SIMULATIONS AND 3D STRUCTURE PREDICTION **Maciej Maciejczyk** International Institute of Molecular and Cell Biology in Warsaw, Warsaw, Poland University of Warmia and Mazury in Olsztyn, Olsztyn, Poland
15.15-15.45	**AWARDS & CONFERENCE CLOSING** **Beata Wielgus-Kutrowska** and **Piotr Bednarczyk**
15.45-16.00	Departure Refreshment
16.00	DEPARTURE