



**Saturday 29 June 2024 (Collegium Maius)**

17:00-20:00 **WELCOME RECEPTION @ Collegium Maius, Stuba Communis**

17:00 – 18:30 **GUIDED TOUR THROUGH COLLEGIUM MAIUS**

<b>08:30-09:00 COFFEE A PRIORI</b>		
09:00-09:30 <b>OPENING</b>		<i>chairs: Paweł Moskał, Ewa Stępień</i>
09:30-10:00	<b>Opening talk:</b> Long-term Covid 19 effect on reproductive health - vaccination versus disease!	<b>Prof. Maciej Kurpisz</b> Institute of Human Genetics, Polish Academy of Sciences, Poland
<b>10:00-10:30 COFFEE BREAK</b>		
10:30-11:30 <b>TOTAL-BODY PET</b>		<i>chairs: Shiva Abbaszadeh, Karol Lang</i>
10:30	<b>Key talk:</b> Total-Body PET: In Search of the "Killer App"	<b>Prof. Ramsey Badawi</b> University of California, Davis, USA
11:00	<b>Key talk:</b> Toward More Affordable Multi-Dimensional PET Imaging	<b>Prof. Sadek Nehmeh</b> Weill Cornell Medicine, NY USA
<b>11:30-11:50 COFFEE BREAK</b>		
11:50-12:25 <b>POSITRONIUM IN MEDICINE</b>		<i>chairs: Sylwia Ptasieńska, Jaquin Herraiz</i>
11:50	First positronium imaging of humans	<b>Prof. Paweł Moskał</b> Jagiellonian University, Poland
12:00	<b>Invited talk:</b> From SPLIT to SIMPLE: High-Resolution Statistical Image Reconstruction Methods for Positronium Lifetime Imaging	<b>Prof. Jinyi Qi</b> University of California, Davis, USA
12:25-14:00 <b>LUNCH</b> @ Collegium Novodvorscianum Gallery		
14:00-15:15 <b>EXTRACELLULAR VESICLES FOR THERANOSTICS</b>		<i>chairs: Małgorzata Przybyło, Maciej Kurpisz</i>
14:00	<b>Invited talk:</b> Insight into proteome of follicular fluid-derived extracellular vesicles following vitamin D3 and insulin treatment – an in vitro study on a pig model	<b>Prof. Małgorzata Grzesiak</b> Jagiellonian University, Poland
14:25	<b>Invited talk:</b> The role of extracellular vesicles secreted by senescent vascular smooth muscle cells in modulation of immune cell function	<b>Prof. Grażyna Mosieniak</b> Nencki institute of Experimental Biology, Poland
14:50	<b>Invited talk:</b> Leukemic extracellular vesicles as drivers of T cell-mediated immunosuppression	<b>Prof. Katarzyna Piwocka</b> Nencki institute of Experimental Biology, Poland
<b>15:15-15:45 COFFEE BREAK</b>		
15:45-17:00 <b>PET IMAGING INNOVATIONS</b>		<i>chairs: Barbara Błasiak, Ramsey Badawi</i>
15:45	<b>Invited talk:</b> Total-body multi-parametric PET imaging: recent advancements and future perspective for its clinical adoption	<b>Prof. Nikolaos Karakatsanis</b> Weill Cornell Medical College, USA
16:10	<b>Invited talk:</b> Multi-organ kinetic modelling and connectome analysis for Total-Body PET	<b>Prof. Adriana Tavares</b> University of Edinburgh, UK
16:35	<b>Invited talk:</b> Ultrafast Timing Reconstruction-free Direct Positron Emission Imaging (dPEI)	<b>Prof. Sun Il Kwon</b> University of California, USA

## Monday 1 July 2024 (Collegium Novodvorscianum)

<b>08:30-09:00 COFFEE A PRIORI</b>		
09:00-10:50 <b>NOVEL BIOMARKERS FOR THERANOSTICS</b>		<i>chairs: Grażyna Mosieniak, Kuangyu Shi</i>
09:00	<b>Key talk:</b> Proteomic profiles of melanoma-derived and lymphocyte-derived exosomes from plasma of melanoma patients	<b>Prof. Piotr Wiślak</b> Medical University of Gdańsk,, Poland
09:30	<b>Key talk:</b> Radioisotope labelled somatostatin receptor antagonists as a promising tool to improve the diagnosis and treatment of patients with neuroendocrine tumours	<b>Prof. Alicja Hubalewska - Dydejczyk</b> Jagiellonian University, Poland
10:00	<b>Invited talk:</b> Integrative Biophysical and Computational Approaches for Melanoma Drug Combination Selection via Glycosylation-Based Biomarkers	<b>Prof. Tomasz Kobiela</b> Warsaw University of Technology, Poland
10:25	<b>Invited talk:</b> Design, Synthesis, and Evaluation of Novel Gold Nanorod-Based Theranostic Agents for Anticancer Therapy	<b>Dr. Martyna Krzykawska-Serda</b> Jagiellonian University, Poland
<b>10:50-11:20 COFFEE BREAK</b>		
11:20-13:05 <b>TOTAL-BODY PET</b>		<i>chairs: Alicja Hubalewska-Dydejczyk, Sadek Nehmeh</i>
11:20	<b>Key talk:</b> Total-Body PET: where are we today?	<b>Prof. Axel Rominger</b> Bern University, Switzerland
11:50	<b>Invited talk:</b> Clinical practice and clinical research on the Total Body PET	<b>Dr. Adrienne Brouwers</b> University Medical Center Groningen, Netherlands
12:15	<b>Invited talk:</b> Molecular transport imaging of radiotracers with total-body dynamic PET	<b>Prof. Guobao Wang</b> University of California, Davis, USA
12:40	<b>Invited talk:</b> Quantitative modeling of human physiology using PET	<b>Dr. Thomas Lund Andersen</b> Rigshospitalet, Denmark
13:05-14:30 <b>LUNCH</b> @ Collegium Novodvorscianum Gallery		
14:30-15:45 <b>POSITRONIUM IN FUNDAMENTAL AND MATERIAL PHYSICS</b>		<i>chairs: Angela di Fulvio, Jerzy Dryzek</i>
14:30	<b>Invited talk:</b> New bunched positron beam at the AntiMatter Laboratory in Trento: planned quantum experiments with positronium	<b>Prof. Roberto Sennen Brusa</b> University of Trento, Italy
14:55	<b>Invited talk:</b> Study of the mechanism of positronium formation on solid surfaces	<b>Prof. Jakub Cizek</b> Charles University, Czech Republic
15:20	<b>Invited talk:</b> Doppler cooling of positronium with a broadband laser pulse	<b>Dr. Lisa Glöggler</b> CERN, Switzerland
<b>15:45-16:15 COFFEE BREAK</b>		
16:15-17:55 <b>EXOTIC ATOMS AND NUCLEI, NUCLEAR PHYSICS</b>		<i>chairs: Anzori Georgdze, Tomasz Kozik</i>
16:15	<b>Invited talk:</b> Novel approaches to light hypernuclei with heavy ion beams, image analyses and machine learning	<b>Prof. Takehiko R. Saito</b> RIKEN, Japan
16:40	<b>Invited talk:</b> Observations of electron emissions from the DD reaction: its implications in fundamental and applied research	<b>Dr. Rakesh Dubey</b> University of Szczecin, Poland
17:05	<b>Invited talk:</b> Chiral symmetry restoration in nucleus observed in pionic atoms	<b>Prof. Kenta Itahashi</b> RIKEN, Japan
17:30	<b>Invited talk:</b> Kaonic Atoms with the SIDDHARTA-2 experiment	<b>Dr. Fabrizio Napolitano</b> Laboratori Nazionali di Frascati - INFN, Italy
19:00-20:30 <b>CLASSICAL CONCERT</b> @ Collegium Maius		

<b>08:30-09:00 COFFEE A PRIORI</b>		
<b>09:00-09:50 SCANDIUM FOR PET</b>		<i>chairs: Barbara Błasiak, Ihor Kadenko</i>
09:00	<b>Invited talk:</b> Possibilities of producing scandium isotopes in Poland	<b>Dr. Jarosław Choiński</b> University of Warsaw, Poland
09:25	<b>Invited talk:</b> Production of theranostic pair $^{43/44}\text{Sc} - ^{47}\text{Sc}$ on calcium targets	<b>Dr. Rafał Walczak</b> Institute of Nuclear Chemistry and Technology, Poland
<b>09:50-10:20 COFFEE BREAK</b>		
<b>10:20-11:10 POSITRONIUM IN MEDICINE</b>		<i>chairs: Karol Lang, Mihael Makek</i>
10:20	<b>Invited talk:</b> Enhanced Two-Component Positronium Lifetime Imaging in Time-of-Flight PET	<b>Prof. Hsin-Hsiung Huang</b> University of Central Florida, USA
10:45	<b>Invited talk:</b> Challenges and prospects of the positronium imaging reconstruction in J-PET	<b>Dr. Roman Shopa</b> National Centre for Nuclear Research, Poland
11:10	An analytic, moment-based method to estimate orthopositronium lifetimes in positronium lifetime imaging	<b>Lucas Berens</b> University of Chicago, USA
<b>11:30-11:40 SHORT BREAK</b>		
<b>11:40-12:45 POSITRONIUM IN MEDICINE</b>		<i>chairs: Sylwia Ptasińska, Jinny Qi</i>
11:40	<b>Invited talk:</b> Ortho-Positronium Lifetime Spectroscopy for 2-D Liver Tissue Imaging	<b>Prof. Angela di Fulvio</b> University of Illinois, USA
12:05	<b>Invited talk:</b> Positronium lifetime measurement using a clinical PET system for biomedical applications	<b>Dr. Sodai Takyu</b> National Institutes for Quantum and Radiological Sci. and Tech., Japan
12:30	Preliminary studies of positronium lifetime estimation in human livers	<b>Manish Das</b> Jagiellonian University, Poland
<b>12:45-14:10 LUNCH @ Collegium Novodvorscianum Gallery</b>		
<b>14:10-15:55 POSITRONIUM IN FUNDAMENTAL AND MATERIAL PHYSICS</b>		<i>chairs: Eryk Czerwiński, Roberto Brusa</i>
14:10	<b>Key talk:</b> Search for New Particle in Positronium Decay	<b>Prof. Hong Joo Kim</b> Kyungpook National University, South Korea
14:40	<b>Invited talk:</b> Application of spin-polarized positron annihilation spectroscopy to spintronics materials	<b>Prof. Atsuo Kawasuso</b> National Institutes for Quantum Science and Technology, Japan
15:05	<b>Invited talk:</b> Remarks on Positronium in molecular matter and other	<b>Prof. Jerzy Dryzek</b> Institute of Nuclear Physics PAS, PL
15:30	<b>Invited talk:</b> S-QM/MM approach to positronium in liquids	<b>Prof. Marcio Varella</b> University of Sao Paulo, Brazil
<b>15:55-16:25 COFFEE BREAK</b>		
<b>16:25-18:00 POSITRONIUM IN FUNDAMENTAL AND MATERIAL PHYSICS</b>		<i>chairs: Jens von den Linden, Ryugo Hayano</i>
16:25	<b>Invited talk:</b> Many-body theory of positron and positronium interactions with atoms and molecules	<b>Prof. Dermot Green</b> Queen's University Belfast, UK
16:50	<b>Invited talk:</b> Late-time decay for electromagnetic bound states	<b>Prof. Francesco Giacosa</b> Jan Kochanowski University of Kielce, Poland
17:15	<b>Invited talk:</b> Studies of ortho-positronium mean lifetime with the J-PET tomograph	<b>Dr. Sushil Sharma</b> Jagiellonian University, Poland
17:40	QFT approach to positronium decays	<b>Dr. Milena Piotrowska</b> Jan Kochanowski University of Kielce, Poland

**Wednesday 3 July 2024 (Collegium Novodvorscianum)**

<b>08:30-09:00 COFFEE A PRIORI</b>		
<b>09:00-10:40 ARTIFICIAL INTELIIGENCE FOR MEDICINE</b>		<i>chairs: Thomas Beyer, Marian Cholewa</i>
09:00	<b>Key talk:</b> Artificial intelligence in medical imaging: influencing precision care	<b>Prof. Damini Dey</b> Cedar Sinai, LA, USA
09:30	<b>Key talk:</b> Knowledge-guided Artificial Intelligence for Personalized Nuclear Medicine Theranostics	<b>Prof. Kuangyu Shi</b> Bern University, Switzerland
10:00	Deep learning in online adaptive MRI guided radiotherapy at the MRIdian MR-Linac	<b>Maria Kawula</b> LMU Hospital, Germany
10:20	Advancing cardiac detection in chest X-ray images using Machine Learning: A practical application of AI in medical imaging	<b>Dr. Narendra Rathod</b> Jagiellonian University, Poland
<b>10:40-11:10 COFFEE BREAK</b>		
<b>11:10-12:10 MULTI-TRACER PET IMAGING</b>		<i>chairs: Hsin-Hsiung Huang, Guobao Wang</i>
11:10	<b>Invited talk:</b> Multiplexed PET based on triple coincidences	<b>Prof. Joaquin L. Herraiz</b> Complutense University of Madrid, Spain
11:35	Extension of MLEM algorithm for simultaneous dual-tracer PET image reconstruction	<b>Dr. Lech Raczyński</b> National Centre For Nuclear Research, Poland
11:55	Developing of dual-tracer imaging with modular J-PET	<b>Ermias Yitayew Beyene</b> Jagiellonian University, Poland
12:10-13:30 <b>LUNCH</b> @ Collegium Novodvorscianum Gallery		
<b>13:30-14:50 QUANTUM ENTANGLEMENT IN PET</b>		<i>chairs: Francesco Giacosa, Atsuo Kawasuso</i>
13:30	<b>Key talk:</b> Quantum Entanglement and Multimodality Techniques	<b>Prof. Shiva Abbaszadeh</b> UC Santa Cruz, California
14:00	<b>Invited talk:</b> Probing polarization correlations of annihilation quanta in Compton scattering experiment and their implementation in Positron emission tomography	<b>Prof. Mihael Makek</b> University of Zagreb, Croatia
14:25	<b>Invited talk:</b> A first detailed study of the quantum decoherence of entangled gamma photons	<b>Prof. Julien Bordes</b> University of York, UK
<b>14:50-15:20 COFFEE BREAK</b>		
<b>15:20-16:25 QUANTUM ENTANGLEMENT IN PET</b>		<i>chairs: Paulo Fonte, Pragya Das</i>
15:20	<b>Invited talk:</b> Theoretical Framework for Multiple Compton Scattering of PET Annihilation Photons	<b>Dr. Pietro Caradonna</b> University of York, UK
15:45	Studies of the quantum entanglement of photons from electron-positron annihilation in the porous material using J-PET scanner	<b>Deepak Kumar</b> Jagiellonian University, Poland
16:05	Positron emission tomography imaging using polarization-correlated annihilation quanta – experimental study	<b>Ana Marija Kozuljević</b> University of Zagreb, Croatia
<b>19:30-20:30 Public lecture: Artificial Intelligence and Medicine: Crossing the Rubicon</b>		<b>Prof. Piotr Słomka</b> Cedars-Sinai Medical Center USA

08:30-09:00 <b>COFFEE A PRIORI</b>		
09:00-10:35 <b>PARTICLE THERAPY MONITORING</b>		<i>chairs: Katia Parodi, Antoni Ruciński</i>
09:00	<b>Key talk:</b> Image-guided FLASH proton therapy	<b>Prof. Karol Lang</b> University of Texas at Austin, USA
09:30	<b>Invited talk:</b> Compton cameras for cancer treatment assessment	<b>Prof. Gabriela Llosa</b> IFIC (CSIC-UV), Spain
09:55	Range monitoring capabilities with the SiFi-CC Compton camera: spectral-spatial imaging with Monte Carlo-simulated data	<b>Dr. Jorge Roser</b> Universtität zu Lübeck, Germany
10:15	Short-term response of melanoma spheroids and melanocytes to FLASH proton therapy - the use of colorimetric microscopy and infrared microscopy	<b>Dr. Martyna Durak-Kozica</b> Jagiellonian University, Poland
10:35-11:05 <b>COFFEE BREAK</b>		
11:05-12:45 <b>EXTRACELLULAR VESICLES FOR THERANOSTICS</b>		<i>chairs: Małgorzata Grzesiak, Ali dinari</i>
11:05	<b>Key talk:</b> Developing a strategy to measure concentrations of extracellular vesicles in human plasma for biomarker exploration	<b>Prof. Rienk Neuwland</b> Amsterdam University Medical Center, Nederland
11:35	<b>Invited talk:</b> The glycosylation status of melanoma cells directly affects the proteome composition of extracellular vesicles they release	<b>Prof. Małgorzata Przybyło</b> Jagiellonian University, Poland
12:00	<b>Invited talk:</b> Probing red blood cell - derived microparticles (RMPs): Insights from Raman spectroscopy and complementary techniques	<b>Prof. Katarzyna Marzec</b> AGH University of Science and Technology, Poland
12:25	Possibilities of using extracellular vesicles (EVs) of microbial origin as natural carriers of drugs used in anticancer therapies – EVs-DDS (EVs-based Drug Delivery System)	<b>Patrycja Kowalska</b> Warsaw University of Technology, Poland
12:45-15:00 <b>LUNCH &amp; POSTER SESSION &amp; CONFERENCE PHOTO</b> @ Collegium Novodvorscianum Gallery <i>chairs: Małgorzata Przybyło, Ihor Kadenko, Ryugo Hayano, Ramsey Badawi, Ashutosh Bhardwaj</i>		
	1. Two axes sliding gantry for total-body J-PET / CT scanner	<b>Tevfik Kaplanoglu</b> Jagiellonian University, Poland
	2. Study of $3\gamma/2\gamma$ positronium decay ratio in materials using the J-PET scanner	<b>Szymon Parzych</b> Jagiellonian University, Poland
	3. Method of Time-Over-Threshold - energy calibration of J-PET scanner with an external source	<b>Szymon Parzych</b> Jagiellonian University, Poland
	4. Calibration of PALS system with CRM materials for bio-medical studies	<b>Karol Kubat</b> Jagiellonian University, Poland
	5. Exploring Novel Techniques for Optical Vortex Beam Generation and Detection Using Mach-Zehnder Interferometer and Spiral Zone Plate	<b>Sharareh Jalali</b> Urmia University, Iran
	6. Tests of T, CP and CPT discrete symmetries via kaons' transitions at KLOE-2	<b>Szymon Gamrat</b> Jagiellonian University, Poland
	7. Mirror Matter in Ortho-Positronium Decay Searches using the J-PET Detector	<b>Justyna Mędrala-Sowa</b> Jagiellonian University, Poland
	8. TOF-sims deeper examination of lipid alterations in extracellular vesicles in the urine of type 1 diabetes patients	<b>Magdalena Skalska</b> Jagiellonian University, Poland
	9. SRG Induced Three-body Forces	<b>Vaibhav Chahar</b> Jagiellonian University, Poland
	10. Short-term response of melanoma spheroids and melanocytes to FLASH proton therapy - the use of colorimetric microscopy and infrared microscopy	<b>Martyna Durak-Kozica</b> Jagiellonian University, Poland

	11. Multi-Photon decays of ortho-Positronium with J-PET	<b>Pooja Tanty</b> Jagiellonian University, Poland
	12. Effect of N-glycosylation on protein sorting into microvesicles and exosomes released by WM115 melanoma cells	<b>Magdalena Wilczak</b> Jagiellonian University, Poland
	13. A vision to increase the availability of PET diagnosis by combining a low-cost modular J-PET tomograph with the $^{44}\text{Ti}/^{44}\text{Sc}$ generator	<b>Aleksander Khreptak</b> Jagiellonian University, Poland
	14. Spectroscopic methods in the study of the effect of the ketogenic diet on glial scar development in terms of time and gender	<b>Kamil Kawoń</b> AGH University of Krakow, Poland
	15. Study of defects in TiO <sub>2</sub> polymorphs using positron annihilation	<b>Oksana Melikhova</b> Charles University, Czech Republic
	16. Cross sections of (p,x) reactions on $^{12}\text{C}$ , $^{14}\text{N}$ and $^{16}\text{O}$ for $^{10,11}\text{C}$ production	<b>Nadia Sakhno</b> International Nuclear Safety Center of Taras Shevchenko National University of Kyiv, Ukraine
	17. In vitro characterization of large-scale produced extracellular vesicles with cryo-EM and lensless holographic microscopy – proof of concept	<b>Kamil Wawrowicz</b> Jagiellonian University, Poland
	18. Feasibility study of pet image reconstruction using single-scattered events with TOF	<b>Ritesh Verma</b> IITB, Mumbai, India
	19. Production of $^{64}\text{Cu}$ radioisotope by proton irradiation in a medical cyclotron for theranostic applications	<b>Jakub Gauza</b> University of Warsaw/Voxel S.A., Poland
	20. Verification of Proton beam Range using photopolymerized PMMA base plastics scintillator	<b>Sunghwan Kim</b> Cheongju University, South Korea
	21. Towards total-body J-PET: overview of data correction techniques for image reconstruction	<b>Aurelien Coussat</b> Jagiellonian University, Poland
	22. Positron annihilation lifetime measurement of plasma clots and thrombi	<b>Simbarashe Moyo</b> Jagiellonian University, Poland
	23. Towards the positronium studies in proton beam therapy with J-PET system	<b>Wiktor Mryka</b> Jagiellonian University, Poland
	24. Optimizing the length of a single ring of the Total body J-PET	<b>Keyvan Tayefi Ardebili</b> Jagiellonian University, Poland
	25. CP symmetry study using the Polarization vector of ortho-Positronium annihilation Photon	<b>Kavya Valsan Eliyan</b> Jagiellonian University, Poland
	26. Unravelling Extracellular Vesicle Morphology: Machine Learning approach for Biomarker Identification	<b>Kriti Awasthi</b> Jagiellonian University, Poland
<b>15:00-16:55 PARTICLE DETECTION TECHNOLOGIES</b>		<i>chairs: Hong Joo Kim, Łukasz Kapton</i>
15:00	<b>Invited talk:</b> Development of fast scintillation detectors for photon-counting CT	<b>Prof. Dennis Schaart</b> Delft University of Technology, Netherlands
15:25	<b>Invited talk:</b> A limited-angle PET imager with ultrafast flat-panel detectors	<b>Prof. Rok Pestotnik</b> Jožef Stefan Institute, Slovenia
15:50	<b>Invited talk:</b> Modeling the effect of neutron damage on LGAD sensors	<b>Prof. Ashutosh Bhardwaj</b> University of Delhi, India
16:15	Organic high-Z scintillators for a flexible and fast total body nuclear imaging	<b>Angelica De Gregorio</b> Sapienza University of Rome, Italy
16:35	Development of HPGe Detectors for Ultra High Rate Spectroscopy and Imaging	<b>Dr. Joanna Szornel</b> Lawrence Berkeley National Laboratory, USA
<b>16:55-17:25 COFFEE BREAK</b>		

17:25-18:50 EDUCATION AND BIO-ALGORITHMS AND MED-SYSTEMS		<i>chair: Ewa Stępień</i>
17:25	<b>Invited talk:</b> Nurturing the Future Stars of Physics: The International Physics Olympiad	<b>Prof. Ryugo Hayano</b> University of Tokyo, Japan
17:50	<b>Invited talk:</b> How do digital technologies fit into clinical reasoning education?	<b>Prof. Andrzej Kononowicz</b> Jagiellonian University Medical College, Poland
18:15	<b>Invited talk:</b> Story of the Bio-Algorithms and Med-Systems	<b>Prof. Irena Roterman-Konieczna</b> Jagiellonian University Medical College, Poland
18:40	Introduction into the ESMI	<b>Prof. Ewa Stępień</b> Jagiellonian University, Poland

**20:00-23:00 CONFERENCE DINNER IN GALICYJSKA RESTAURANT**



**Friday 5 July 2024 (Collegium Novodvorscianum)**

09:00-09:30 <b>COFFEE A PRIORI</b>		
09:30-10:30 <b>POSITRONIUM IN FUNDAMENTAL AND MATERIAL PHYSICS</b> <i>chairs: Takatsugu Ishikawa, Milena Piotrowska</i>		
09:30	Dark Matter in Positronium and J-PET prospects	<b>Dr. Elena Perez del Rio</b> Jagiellonian University, Poland
09:50	Advancements in sensitivity of CPT symmetry test for ortho-positronium decays in J-PET	<b>Neha Chug</b> Jagiellonian University, Poland
10:10	Ortho-Positronium Detection with a High-Resolution PET Scanner	<b>Firas Abouzahr</b> University of Texas at Austin, USA
10:30-11:00 <b>COFFEE BREAK</b>		
11:00-12:55 <b>PARTICLE THERAPY MONITORING</b> <i>chairs: Renata Kopeć, Gabriela Llosa</i>		
11:00	<b>Key talk:</b> A high-resolution, spherical in-beam PET scanner for range monitoring and biological guidance of ion beam therapy	<b>Prof. Katia Parodi</b> Ludwig Maximilian University, Munich, Germany
11:30	<b>Invited talk:</b> Proton therapy range monitoring using the J-PET scanner	<b>Dr. Antoni Ruciński</b> Institute of Nuclear Physics PAS, Poland
11:55	PET Image-Guidance in Conventional and FLASH Proton Therapy	<b>Dr. John Cesar</b> University of Texas at Austin, USA
12:15	Experimental characterization of LET spectra in proton therapy	<b>Dr. Jan Gajewski</b> Institute of Nuclear Physics PAS, Poland
12:35	Differential Cross Sections Measurement of <sup>12</sup> C fragmentation on C, O and H in the Energy Range of interest for Carbon Ion Therapy Applications	<b>Dr. Ilaria Mattei</b> FOOT collaboration, Italy
12:55-14:15 <b>LUNCH</b> @ Collegium Novodvorscianum Gallery		
14:15-15:55 <b>PET IMAGING INNOVATIONS</b> <i>chairs: John Cesar, Sushil Sharma</i>		
14:15	<b>Invited talk:</b> Resistive Plate Chambers for brain PET imaging and particle tracking and timing	<b>Prof. Paolo Fonte</b> Laboratory of Instrumentation and Experimental Part. Phys., Portugal
14:40	Simulation studies of a brain PET insert for the total body J-PET tomograph	<b>Dr. Martin Rädler</b> Jagiellonian University, Poland
15:00	Walk-Through PET scanner: A high throughput, high resolution scanner	<b>Dr. Meysam Dadgar</b> Ghent University, Belgium
15:20	Design study of a breast-dedicated PET/SPECT detector built from inorganic scintillators and WLS fibers	<b>Prof. Anzori Georgadze</b> Kiev Institute for Nuclear Research, Ukraine
15:40	Evaluation of lesion contrast and performance characteristics in Modular J-PET scanner	<b>Dr. Faranak Tayefi Ardebili</b> Jagiellonian University, Poland
15:55-16:25 <b>COFFEE BREAK</b>		
16:25-17:50 <b>ARTIFICIAL INTELIGENCE FOR MEDICINE</b> <i>chairs: Konrad Klimaszewski, Fabrizio Napolitano</i>		
16:25	<b>Invited talk:</b> Deep learning for data corrections in quantitative NM imaging	<b>Prof. Dimitris Visvikis</b> National Institute of Health and Medical Sciences, France
16:50	<b>Invited talk:</b> Experimental data-driven predictive modeling of DNA damage induced by low-temperature plasma radiation	<b>Prof. Sylwia Ptasińska</b> University of Notre Dame, USA
17:15	Application of Deep Learning-Based Methods in medical imaging	<b>Prof. Marian Cholewa</b> University of Rzeszow, Poland
17:35	Unravelling Extracellular Vesicle Morphology: Machine Learning approach for Biomarker Identification	<b>Kriti Awasthi</b> Jagiellonian University, Poland

08:30-09:00 <b>COFFEE A PRIORI</b>		
09:00-10:20 <b>POSITRONIUM IN FUNDAMENTAL AND MATERIAL PHYSICS</b>		<i>chairs: Jakub Cizek, Marcio Varella</i>
09:00	<b>Key talk:</b> Experimental studies on the positronium negative ion, a three-body bound state composed of a positron and two electrons	<b>Prof. Yasuyuki Nagashima</b> Tokyo University of Science, Japan
09:30	<b>Invited talk:</b> Applying positron-emission diagnostic techniques to magnetically confined electron-positron pair plasma	<b>Dr. Jens von den Linden</b> Max Planck Institute for Plasma Physics, Germany
09:55	<b>Invited talk:</b> Possibility to Detect Electrolyte Disorder Using PET with Positron Annihilation Lifetime Spectroscopy	<b>Prof. Radek Zaleski</b> Marie Curie-Skłodowska University in Lublin, Poland
10:20-10:50 <b>COFFEE BREAK</b>		
10:50-12:30 <b>EXOTIC ATOMS AND NUCLEI, NUCLEAR PHYSICS</b>		<i>chairs: Magdalena Skurzok, Rakesh Dubey</i>
10:50	<b>Invited talk:</b> Formation of long lived nuclear molecules in (p, <sup>2</sup> He) nuclear reactions on <sup>181</sup> Ta and <sup>159</sup> Tb	<b>Prof. Ihor Kadenko</b> Taras Shevchenko National Uni. of Kyiv, Ukraine
11:15	<b>Invited talk:</b> Spectroscopy of antiprotonic atoms	<b>Prof. Tomasz Sowiński</b> Institute of Physics PAS, Poland
11:40	<b>Invited talk:</b> Structure of Xi hypernuclei	<b>Prof. Emiko Hiyama</b> RIKEN, Japan
12:05	<b>Invited talk:</b> The eta-deuteron interaction studied in coherent neutral-pion and eta-meson photoproduction on the deuteron	<b>Prof. Takatsugu Ishikawa</b> Osaka University, Japan
12:30-14:00 <b>LUNCH</b> @ Collegium Novodvorscianum Gallery		
14:00-14:45 <b>NOVEL PHARMACEUTICALS FOR THERANOSTICS</b>		<i>chairs: Zdenka Kuncic, Mitchell Albert</i>
14:00	<b>Invited talk:</b> Improvement of cancer contrast in MRI using nanoparticles in the animal model	<b>Prof. Barbara Błasiak</b> The Henryk Niewodniczański Institute of Nuclear Physics PAS, Poland
14:25	Targeted Cellular Tracking of Pancreatic Tumor Cells via Magnetic Particle Spectroscopy/ Imaging (MPS/MPI)	<b>Dr. Ali Dinari</b> Jagiellonian University, Poland
14:45-15:15 <b>COFFEE BREAK</b>		
15:15-16:35 <b>MEDICAL IMAGING INNOVATIONS</b>		<i>chairs: Bartosz Leszczyński, Yasuyuki Nagashima</i>
15:15	<b>Key talk:</b> Uncovering Novel Treatment Strategies to Combat Life-Threatening Infections with Multimodal Imaging	<b>Prof. Greetje Vande Velde</b> KU Leuven, Belgium
15:45	<b>Invited talk:</b> Superparamagnetic nanoparticles – a versatile platform for imaging and theranostic innovations	<b>Prof. Zdenka Kuncic</b> University of Sydney, Australia
16:10	<b>Invited talk:</b> Recent Advances in Hyperpolarized Xenon-129 Molecular Imaging: Are We Close for a Practical Application?	<b>Prof. Mitchell Albert</b> Lakehead University, Canada

Sunday 7 July 2024 (Collegium Novodvorscianum)

<b>09:00-09:30 COFFEE A PRIORI</b>		
<b>09:30-11:30 PET IMAGING INNOVATIONS</b>		<i>chairs: Radosław Zaleski, Dimitris Visvikis</i>
09:30	<b>Key talk:</b> Bench-to-clinical research on novel application-specific PET systems	<b>Prof. Taiga Yamaya</b> National Institutes for Quantum and Radiological Science and Technology (QST), Japan
10:00	<b>Invited talk:</b> Exploring PET imaging with scattered photons and polarization characteristics	<b>Prof. Pragya Das</b> Indian Institute of Technology Bombay, India
10:25	<b>Invited talk:</b> New tricks with old PETs	<b>Dr. Tom Leadbeater</b> University of Cape Town, South Africa
10:50	Optical quality control of plastic scintillators for the total-body J-PET scanner	<b>Dr. Łukasz Kapłon</b> Jagiellonian University, Poland
11:10	Using 3D CNNs for distortion corrections in PET imaging	<b>Dr. Konrad Klimaszewski</b> National Centre for Nuclear Research, Poland
<b>11:30-12:00 COFFEE BREAK</b>		
<b>12:00-13:15 CLOSING SESSION</b>		<i>chairs: Paweł Moskał, Ewa Stępień</i>
12:00-12:45	<b>Closing talk:</b> Beginnings and Prospects of PET	<b>Prof. Abass Alavi</b> University of Pennsylvania, USA
<b>12:45-13:15 CLOSING CEREMONY</b>		
<b>13:15-14:30 LUNCH</b> @ Collegium Novodvorscianum Gallery		
<b>14:30-17:00 NETWORKING</b>		

