Taras Shevchenko National University of Kyiv

Training and Research Center for Radiation Safety

Ukrainian Association of Medical Physicists and Engineers

European Federation of Organizations for Medical Physics

endorsed by

XII International Conference "Medical Physics – Current State, Issues, Development Directions. New Technologies"
October 28-30, 2026

online via Zoom

PROGRAME

October 28, 2026 (Kyiv time)	
10.00-15.40	***Join the conference:*** ***Zoom link:*** ***https://knu-ua.zoom.us/j/ 84297824814*** ***Conference ID:*** **842 9782 4814** ***Access code:*** **386762**
10:00-10:20	***Conference opening. Welcome remarks*** ***Chair: Liudmyla Aslamova,*** *Director, Training and Research Center for Radiation Safety, Taras Shevchenko National University of Kyiv, Ukraine.* ***Oksana Zhylinska,*** *Vice-Rector for Research, Taras Shevchenko National University of Kyiv, Ukraine;* ***Kamal Akbarov,*** *Technical Officer (CBRN), WHO Health Emergencies Programme (WHE), WHO Country Office in Ukraine;* ***Sören Mattsson,*** *Lund University, Skåne University Hospital Malmö, Sweden;* ***Jaroslav Ptáček,*** *Treasurer of EFOMP, Head of the Department of Medical Physics and Radiation Protection, University Hospital Olomouc, Czech Republic* ***GroupFoto***

10:20-11:20	**Master Class** **Chair:** ***Liudmyla Aslamova,*** *Director, Training and Research Center for Radiation Safety, Taras Shevchenko National University of Kyiv, Ukraine*
10:20-10:50	EFOMP - current state, issues, development directions. **Jaroslav Ptáček,** *Treasurer of EFOMP, Head of the Department of Medical Physics and Radiation Protection, University Hospital Olomouc, Czech Republic*
10:50-11:20	Recent developments in medical radiation physics and radiological protection. **Sören Mattsson,** *Lund University, Medical Radiation Physics, Skåne University Hospital Malmö, Sweden*
11:20-13:25	**Master Class** **Chair:** ***Sergii Radchenko,*** *Head of the Department of Medical Radiophysics, Faculty of Radiophysics, Electronics and Computer Systems, Taras Shevchenko National University of Kyiv, Ukraine*
11:20-11:45	Imaging dose in radiotherapy: what radiotherapy can learn from diagnostics. **Tomas Kron,** *Director of Physical Sciences Peter MacCallum Cancer Centre, Australia*
11:45-12:10	The acute radiation syndrome: International collaboration to strengthen medical preparedness. **Leif Stenke,** *Karolinska Institute and Karolinska University Hospital, SREMC Stockholm, Sweden*
12:10-12:35	Progress in particle therapy - protons, neutrons, ions. **Pawel Olko,** *Head of Division of Applied Physics, Institute of Nuclear Physics, Polish Academy of Sciences, Poland*
12:35-13:00	Advances in radiotherapy dosimetry - Novel detector technologies for radiotherapy beam quality control. **Teemu Siiskonen,** *University of Helsinki, STUK, Finland*
13:00-13:25	Recent Developments in Medical Physics in Radiological Practice: An ICRP Perspective. **Makoto Hosono,** *ICRP, Department of Radiology Kindai University Faculty of Medicine Osaka, Japan*
13:25-14:00	**Lunch**
14:00-16:00	**Master Class** ***Chair: Evgen Barannik,*** *Department of Medical Physics and Biomedical Nanotechnologies, V.N. Karazin Kharkiv National University, Kharkiv, Ukraine*
14:00-14:20	From Innovation to Impact: The Role of Intellectual Property in Translating Technical Innovation into Practice. **Alina Veligura**, *Head of IP Connected Care, Philips, Netherlands*
14:20-14:40	Promises and pitfalls of adaptive radiation therapy**. Viktor Iakovenko,** *University of Texas Southwestern Medical Center, United States of America*

14:40-15:00	Artificial Intelligence in Modern Operating Theatres: Clinical Applications, Benefits, Limitations. **Prodromos Kaplanis,** *Medical Physics and Radiation Protection Expert, Head of Department, Cyprus*
15:00-15:20	Reflections on Medical Physics Education and Training: Local and Global Perspectives. **Van Dyk Jacob (Jake),** *Western University, Canada*
15:20-15:40	A Versatile Low-Dose Organ-Targeted PET Platform for Cancer and Neurological Imaging. **Alla Reznik,** *Lakehead University, Canada*
15:40-16:00	Advanced Radiation Therapy Techniques in Countries with Resource-Limited Settings. **Serhii Brovchuk**, *Medical Physicist, LISOD Israeli Cancer Care Hospital, Kyiv, Ukraine*
October 29, 2026 (Kyiv time)	
09:00-16:00	***Join the conference:*** ***Zoom link:*** **https://knu-ua.zoom.us/j/ 86526305372** ***Conference ID:*** **865 2630 5372** ***Access code:*** **880851**
09:00-10:40 **09:00-09:05**	***Section 1. Education and training of medical physicists*** ***Chair: Liudmyla Aslamova,*** *Director, Training and Research Center for Radiation Safety, Taras Shevchenko National University of Kyiv, Ukraine* ***Welcome remark***
09:05-09:20	Medical physics in oncology: from fundamental mechanisms to personalized medicine technologies. **Vasyl Chekhun**, *RE Kavetsky Institute of experimental pathology, oncology and radiobiology, National academy of science of Ukraine, Kyiv, Ukraine*
09:20-09:35	Medical physicist training in Ukraine: skills and competencies. **Lyubomyr Nykyruy,** *Vasyl Stefanyk Carpathian National University, Ivano-Frankivsk, Ukraine*
09:35-09:50	Bringing up-to-date Radiotherapy Training for MSc Medical Physics Students: A Methodological Approach. **Volodymyr Fediv,** *Bukovinian State Medical University, Chernivtsi, Ukraine*
09:50-10:05	Analysis of the academic discipline “medical and biological physics”: international approaches, ukrainian context and competences of artificial intelligence. **Yuliya Tseyslyer,** *Taras Shevchenko National University of Kyiv, Ukraine*
10:05-10:20	Medical physics in the context of the digital transformation of healthcare. **Natalia Stuchynska,** *Bogomolets National Medical University, Kyiv, Ukraine*

10:20-10:35	Deep learning segmentation of organs-at-risk: a multi-dataset comparative studyreda venskauskaitė, **Reda Venskauskaitė,** *Kaunas University of Technology, Hospital of Lithuanian University of Health Sciences Kaunas Clinics, Kaunas, Lithuania*
10:35-10:40	**Discussion**
10.40-10.50	**Break**
10:50-12:45 **10:50-10:55**	***Section 2. Radiation protection*** ***Chair: Tetiana Pavlenko*** *Assessment Department, Head of the Radon Monitoring and Public Risk, State Institution «O.M. Marzieiev Institute for Public Health of the National Academy of Medical Sciences of Ukraine», Ukraine* ***Welcome remark***
10:55-11:10	The main tendencies for radiation exposure of the ukrainian public by the medical diagnostic proceedings, **Tetiana Pavlenko,** *State Institution «O.M. Marzieiev Institute for Public Health of the National Academy of Medical Sciences of Ukraine», Ukraine*
11:10-11:25	Frequency-dependent ray curvature for viscosity reconstruction in viscoelastic shear wave elastography, **Mykhailo Hrytsenko,** *Karazin Kharkiv National University, Ukraine*
11:25-11:40	Development and validation of a rapidplan model. **Todorka Dimitrova,** *University of Plovdiv «Paisii Hilendarski», Bulgaria*
11:40-11:50	Opportunistic cardiac analysis in x-ray tomosynthesis. **Oleksandra Miroshnychenko,** *National University Kyiv Aviation Institute, Ukraine*
11:50-12:00	The neurophysiological toll of war: **cognitive** profiles of schoolchildren in kyiv and kharkiv under armed conflict. **Olga Podpalova**, *Educational and Scientific Center «Institute of Biology and Medicine», Taras Shevchenko Kyiv National University, Ukraine*
12:00-12:10	Investigation of uncertainties of cross sections of gamma-induced nuclear reactions for formation of ^{47}Sc, ^{64,67}Cu, ^{90}Y, ^{99m}Tc, ^{111}In radioisotopes. **Oleksandr Gorbachenko,** *Taras Shevchenko National University of Kyiv, Kyiv, Ukraine*
12:10-12:25	A combined dose–image quality approach to radiographic protocol optimization. **Stela S. Dzhelatova,** *University of Plovdiv «Paisii Hilendarski», Plovdiv, Bulgaria*
12:25-12:35	High dose rate is not always high dose: features of dosemeter control when using modern pulse transmission x-ray devices (practical issues). **Anton Osmukha,** *Dnipropetrovsk Regional Clinical Hospital, Dnipro, Ukraine*

12:35-12:45	**Discussion**
12:45-13:00	**Break**
13:00-16:00 **13:00-13:05**	***Symposium: Mental Health in Ukraine: Scientific Approaches and Practical Solutions*** ***Chair: Irina Pinchuk,*** *Director, Institute of Psychiatry, Taras Shevchenko National University of Kyiv, Ukraine* ***Welcome remark***
13:05-14:00	***Section 1. Mental health and the law: the challenges of war and models of support for veterans***
13:05-13:20	The legal framework for mental health care in Ukraine: from piecemeal regulation to a comprehensive law. **Anatoliy Berlach**, *Taras Shevchenko National University of Kyiv, Ukraine*
13:20-13:35	Legal challenges in the field of protecting veterans' rights: an analysis of Ukrainian case law. **Valeria Mamka,** *Taras Shevchenko National University of Kyiv, Ukraine*
13:35-13:50	International Models of Veteran Support: Analysis of Approaches and Identification of Principles of Effectiveness. **Daryna Kysla,** *Taras Shevchenko National University of Kyiv, Ukraine*
13:50-14:00	**Discussion**
14:00-14:45	***Section 2. Resilience and quality of life among veterans: research findings and practical strategies***
14:00-14:15	Resilience among combatants: the relationship with psychopathological indicators and cognitive functions. **Stanislav Chumak**, *Taras Shevchenko National University of Kyiv, Ukraine*
14:15-14:30	Barriers to accessing psychological support and strategies for improving the quality of life of veterans and their families. **Mykhailo Bebeshko**, *Taras Shevchenko National University of Kyiv, Ukraine*
14:30-14:45	Experience-based support: the role of «peer-to-peer» support in modern psychiatric care. **Anna Koba**, *Taras Shevchenko National University of Kyiv, Ukraine*
14:45-14:55	**Discussion**
14:55-16:00	***Section 3. Stress and the brain: clinical, radiation and cognitive effects of war***
14:45-15:10	Psychopathological predictors of the severity of depersonalization-derealization symptoms in young adults. **Oksana Kobzar,** *Shupyk National University of Healthcare of Ukraine, Ukraine*

15:10-15:25	Neurofunctional Disorders under Exposure to Radiation and War-Related Stressors. **Kostiantyn Kuts**, *Gematology and Oncology of the National Academy of Medical Sciences of Ukraine, Ukraine*
15:25-15:40	The neurophysiological cost of war: cognitive profiles of schoolchildren in Kyiv and Kharkiv during armed conflict. **Olga Podpalova**, *Taras Shevchenko National University of Kyiv, Ukraine*
15:40-16:00	**Discussion**
October 30, 2026 (Kyiv time)	
09:00-13:45	***Join the conference:*** ***Zoom link:*** **https://knu-ua.zoom.us/j/ 84620826441** ***Conference ID:*** **846 2082 6441** ***Access code:*** **795758**
09:00-10:20 **09:00-09:05**	***Section 3. Biomedical engineering*** ***Chair: Viktor Martyniuk,*** *Professor, Educational and Scientific Center «Institute of Biology and Medicine», Taras Shevchenko National University of Kyiv, Ukraine* ***Welcome remark***
09:05-09:15	Antioxidant effects of umbilical cord extracts in UV-induced cellular damage. **Volodymyr Prokopyuk**, *Institute for Problems of Cryobiology and Cryomedicine NAS of Ukraine, Ukraine*
09:15-09:30	The group-charge theoretical model of conformational transformations of the albumin macromolecule. **Artur Guslisty**, *Family Medicine Center «Amedika» LLC, Ukraine*
09:30-09:40	Biological effects of gold nanoparticles on in vitro cultures. **Mariia Matviienko**, *State University of Trade and Economics, Ukraine*
09:40-09:55	Laser-plasma therapy as an adjuvant method for correcting neurodegenerative consequences of BLAST-TBI. **Iurii Titarenko**, *Private Scientific Institution «Scientific and Research University of Medical and Pharmaceutical Law», Ukraine*
09:55-10:10	Hybrid hydrogels for biomedical applications: biologically active substances delivery. **Oksana Nadtoka,** *Taras Shevchenko National University of Kyiv, Ukraine*
10:10-10:20	**Discussion**
10:20-11:35	***Section 4. Innovation technologies in medicine*** ***Chair: Sergii Miroshnychenko****, Director of Scientific-production assocoation Teleoptika, llc, Ukraine*

10:20-10:25	***Welcome remark***
10:25-10:40	Organ-saving treatment tactics for neuro-ischemic form of diabetic foot syndrome with purine-necrotic wound process. **Vasyl Krysa**, *Ivano-Frankivsk National Medical University, Ukraine*
10:40-10:50	Simulation of linear tomosynthesis geometry. **Kostiantyn Lapitan**, *V.N. Karazin Kharkiv National University, Ukraine*
10:50-11:00	Multimodal biosignal acquisition system for personalized refinement of cuffless blood pressure estimation models. **Vitalii Mosiichuk**, *Igor Sikorskyi Kyiv Politechnic Institute, Ukraine*
11:00-11:10	Analytical justification for the transition from radiography to tomography. **Sergii Miroshnychenko**, *Scientific-production assocoation Teleoptika, llc, Ukraine*
11:10-11:25	Effect of inductive moderate hyperthermia with free or liposomal doxorubicin on sarcoma-45 ultrasound image heterogeneity. **Valerii B. Orel**, *National Cancer Institute, Ukraine*
11:25-11:35	**Discussion**
11:35-11:45	**Break**
11:45-13:25 **11:45-11:50**	***Section 5. Youth section*** ***Chair: Serhii Brovchuk**, medical physicist, LISOD - Israeli oncology hospital, Kyiv, Ukraine* ***Welcome remark***
11:50-12:00	Development of an information system for remote monitoring of long-bone fracture healing after plate osteosynthesis. **Valerii V. Kryvonosov**, *National University of Life and Environmental Sciences of Ukraine, Ukraine*
12:00-12:10	Electromagnetic emission characteristics of the «Regenerator-01» physiotherapeutic device in different operating modes. **Maksym Perepelytsia**, *Taras Shevchenko National University of Kyiv, Ukraine*
12:10-12:20	Radionuclide monitoring of residual kidney function after surgical treatment of renal cell carcinoma. **Yehor Lazar**, *P.L. Shupyk National University of Health Care of Ukraine, Ukraine*
12:20-12:30	Electrokinetic selection: a physical approach to increasing sperm cryoresistance. **Anna Ipatova**, *Kharkiv National Medical University, Ukraine*
12:30-12:40	Physics-informed statistical conditioning for mri denoising. **Denys Sliusarenko**, *Taras Shevchenko National University of Kyiv, Ukraine*
12:40-12:50	Analysis of amyloid fibril morphology: tem studies. **Kateryna Chkuaseli**, *V. N. Karazin Kharkiv National University, Ukraine*

12:50-13:00	Review of radiation safety recommendations for the cyclotron production of radiopharmaceuticals using Artificial Intelligence. **Illia Yanhol**, *State Scientific and Technical Center for Nuclear and Radiation Safety, Ukraine*
13:00-13:10	Small photon field dosimetry in modern radiotherapy. **Kateryna Vilchynska**, *Taras Shevchenko National University of Kyiv, Ukraine*
13:10-13:20	Evaluation of the impact of thyroid morphology on ultrasound scattering. **Olivia Muzyka**, *Taras Shevchenko National University of Kyiv, Ukraine*
13:20-13:25	**Discussion**
13:25-13:45	**Conclusion.** ***Chair: Liudmyla Aslamova,*** *Director, Training and Research Center for Radiation Safety, Taras Shevchenko National University of Kyiv, Ukraine;* **Sören Mattsson,** *Lund University, Skåne University Hospital Malmö,* Sweden; **Sergii Radchenko,** *Head of the Department of Medical Radiophysics, Faculty of Radiophysics, Electronics and Computer Systems, Taras Shevchenko National University of Kyiv, Ukraine*; ***Serhii Brovchuk****, medical physicist, LISOD - Israeli oncology hospital, Kyiv, Ukraine;* ***Sergii Miroshnychenko****, Director of Scientific-production assocoation Teleoptika, llc, Kyiv, Ukraine;* ***Viktor Martyniuk,*** *Professor, Educational and Scientific Center «Institute of Biology and Medicine», Taras Shevchenko National University of Kyiv, Ukraine*. **FILM**