

# Poster session

## The 6th International Symposium «Physics Engineering and Technologies for Biomedicine»

November 23-24 of 2021

Moscow, Russia

### Operation rules of the poster session

Due to large number of contributions to the session of the Symposium the poster reports will be presented two ways. One part of them is scheduled in a format of short talks (7 min including discussion) via Zoom (listed in the Program in the order of presentation).

The rest will be displayed on a virtual disk during the Symposium. We kindly ask to send PDF converted presentations to [PhysBioSymp@mephi.ru](mailto:PhysBioSymp@mephi.ru) not later than 15h00 of November 22. The link to the disk will be distributed to all registered participants.

16.15	Tuesday, November 23	Short talks
P1-1	<i>Daria Pominova</i> Prokhorov General Physics Institute RAS (Russia), MEPHI (Russia) <b>Study of local electromagnetic field enhancement by iron oxide nanoparticles</b>	
P1-2	<i>Gleb Tikhonowski</i> MEPHI (Russia) <b>Laser-ablative synthesis of stable size-tunable Bi nanoparticles and their functionalization for radiotherapy application</b>	
P1-3	<i>Pavel Shakhov</i> MEPHI (Russia) <b>Numerical and experimental study of heat propagation processes in biological tissues during photothermal therapy using titanium nitride nanoparticles</b>	
P1-4	<i>Julia Kargina</i> MEPHI (Russia) <b>Silicon-iron nanoparticles prepared by laser ablation for biomedical applications</b>	
P1-5	<i>Alexey Kopylov</i> MEPHI (Russia) <b>Obtaining luminescent carbon dots</b>	
P1-6	<i>Anastasia Tkach</i> MEPHI (Russia) <b>Optimizing the electron transport in quantum dot light-emitting diodes</b>	
P1-7	<i>Elizaveta Gubanova</i> Obninsk Institute for Nuclear Power Engineering (Russia) <b>Heating ability optimization of magnetic nanoparticles</b>	

P1-8	<p><i>Nikolay Pokryshkin</i>  MEPhI (Russia)  <b>Substrate-dependent optical properties of organometal perovskite nanocrystals</b></p>
P1-9	<p><i>Anastasiia Kornilova</i>  MSU (Russia)  <b>Size-selected silicon nanoparticles with Mie resonance for photohyperthermia</b></p>
P1-10	<p><i>Anastasia Sinitsyna</i>  MEPhI (Russia)  <b>Delivery of nanoparticles into the cell using isolated mitochondria</b></p>
P1-11	<p><i>Ilia Ivanov</i>  Pirogov Russian National Research Medical University (Russia)  <b>Delivery of nanoparticle complexes with mitochondria</b></p>
P1-12	<p><i>Irina Kryukova</i>  MEPhI (Russia)  <b>Weak light-matter coupling in near-infrared luminescent systems based on freestanding porous silicon microcavities embedded with PbS quantum dots</b></p>
P1-13	<p><i>Alina Mufteeva</i>  Obninsk Institute for Nuclear Power Engineering (Russia)  <b>Combined effect of anticancer drugs and silicon nanoparticles on bone marrow mesenchymal stem cells</b></p>
P1-14	<p><i>Aziz Mirkasymov</i>  Institute of Bioorganic Chemistry RAS (Russia)  <b>Ferrihydrite-mediated mononuclear phagocyte system blockade for improved tumor targeting of nanomaterials</b></p>
P1-15	<p><i>Evgeniia Kuznetcova</i>  Dimitrovgrad engineering and technological Institute (Russia)  <b>Determination of Unintended Error in Proton Beam Energy for Radiotherapy</b></p>
P1-16	<p><i>Danila Yudakov</i>  MEPhI (Russia)  <b>Personalized pharmacosafety of the lacrimal system during radionuclide therapy</b></p>
P1-17	<p><i>Anzhelika Melnikova</i>  Obninsk Institute for Nuclear Power Engineering (Russia)  <b>Research of the effect of gamma radiation and doxorubicin on human tumor cells</b></p>
P1-18	<p><i>Dac Thinh Ly</i>  MEPhI (Russia)  <b>A Monte Carlo Simulation of Boron Proton Capture Reaction in the framework of the Use in Radiation Therapy</b></p>
P1-19	<p><i>Zhumagali Yegemberdi</i>  MEPhI (Russia)  <b>Photodynamic therapy for bile duct cancer under fluorescent videosystem control with using chlorin E6</b></p>
P1-20	<p><i>Svetlana Kolesnikova</i>  Obninsk Institute for Nuclear Power Engineering (Russia)  <b>Study of the effects of the combination of ceftriaxone and lidocaine in the in vitro experiment in the culture of microorganisms</b></p>
P1-21	<p><i>Natalia Savina</i>  MEPhI (Russia)  <b>Prospects for the study of transgenerational effects in daphnia magna irradiated at various stages of embryogenesis</b></p>

P1-22	<p>Olesya Koshuba MEPhI (Russia) <b><i>Fabrication and characterization of chondrospheres as biomaterials for 3d bioprinting of carteline tissue in treatment of carteline defects</i></b></p>
P1-23	<p>Elizaveta Koudan 3D Bioprinting Solutions (Russia) <b><i>Creation of tissue-engineering constructs of various shapes by magnetic patterning of spheroids</i></b></p>
P1-24	<p>Georgy Detkov LLC «Information technologies and electronic communications» (Russia) <b><i>Present methods of using highly coherent radiation in various fields of biomedicine</i></b></p>

<b>15.50</b>		<b>Wednesday, November 24</b>		<b>Short talks</b>	
P2-1	Anastasiia Olkhova ITMO University (Russia)	<b><i>Laser correction of PbSe chalcogenide films photosensitivity</i></b>			
P2-2	Mikhail Shestakov MEPhI (Russia), Russian Timiryazev State Agrarian University (Russia)	<b><i>Silicon and iron composite as nanomaterial for photothermal treatment of cancer</i></b>			
P2-3	Alina Levushkina Obninsk Institute for Nuclear Power Engineering (Russia)	<b><i>Nanosilicon-based RNA delivery system with enhanced capacity for siRNA therapy</i></b>			
P2-4	Elena Lyapunova Obninsk Institute for Nuclear Power Engineering (Russia)	<b><i>Combined effect of anticancer drugs and silicon nanoparticles on bone marrow mesenchymal stem cells</i></b>			
P2-5	Olga Griaznova Skolkovo Institute of Science and Technology (Russia)	<b><i>Influence of polymer coating on colloidal stability of MIL-101 (Cr) nanoparticles</i></b>			
P2-6	Artem Laktionov Astrakhan State University (Russia)	<b><i>Magnetic nanocontainers for drug delivery</i></b>			
P2-7	Mariia Belova Sirius University of Science and Technology (Russia)	<b><i>Plasmonic silver nanoparticles as an agent for cancer tumors photothermal therapy</i></b>			
P2-8	Saltanat Ikramova Al-Farabi Kazakh National University (Kazakhstan)	<b><i>Arrays of Silicon Nanowires with Deposited Plasmonic Nanoparticles for SERS detection of biomolecules</i></b>			
P2-9	Evelyn Alejandra Granizo Roman MEPhI (Russia)	<b><i>High-resolution methods for 3d nanostructure analysis and visualization</i></b>			
P2-10	Iaroslav Belyaev MEPhI (Russia), Institute of Bioorganic Chemistry RAS (Russia)	<b><i>Effects of MPS blockade with liposomes on pharmacokinetics of magnetic nanoparticles</i></b>			
P2-11	Polina Malova Saint Petersburg State University (Russia)	<b><i>MicroRNA Sensing Using DNA-templated Silver Nanoclusters</i></b>			

P2-12	<p style="text-align: center;">Olga Ryzhova MEPhI (Russia) <b>Overview of clinical trials of nanoparticles AGuIX®</b></p>
P2-13	<p style="text-align: center;">Yury Zorin MEPhI (Russia) <b>Leukocyte recognition on images of bone marrow preparations in conditions of multiple contact of cells</b></p>
P2-14	<p style="text-align: center;">Alexander Bubnov Endocrinological Research Center (Russia) <b>Intraoperative visualization of parathyroid glands during thyroidectomy and hemithyroidectomy</b></p>
P2-15	<p style="text-align: center;">Igor Romanishkin Prokhorov General Physics Institute RAS (Russia) <b>Method for determining the edge of glioblastoma tumors based on automatic classification of the tissue Raman spectra</b></p>
P2-16	<p style="text-align: center;">Arkady Moskalev Prokhorov General Physics Institute RAS (Russia) <b>Creation of virtual bimodal (white and fluorescent light) bladder phantoms for verifying image mosaicing algorithms</b></p>
P2-17	<p style="text-align: center;">Aleksandr Rudy Prokhorov General Physics Institute RAS (Russia) <b>Solid-State Rare Earth Lasers in Biomedical Applications</b></p>
P2-18	<p style="text-align: center;">Milena Shestopalova MEPhI (Russia), Institute of Bioorganic Chemistry RAS (Russia) <b>Application of Raman microspectroscopy to study local blood oxygenation and redox state of the mitochondrial respiratory chain in the mice brain</b></p>
P2-19	<p style="text-align: center;">Elizaveta Bezumova MEPhI (Russia) <b>Validation the software application for quantification of gadolinium contrast agents in a laboratory mouse in vivo</b></p>
P2-20	<p style="text-align: center;">Anna Kiryanova MSU (Russia) <b>Magnetic resonance spectroscopy in mild cognitive impairment</b></p>
P2-21	<p style="text-align: center;">Alina Lim MEPhI (Russia) <b>Model for detecting structureless areas in images of skin neoplasms in the diagnosis of melanoma in oncodermatology</b></p>
P2-22	<p style="text-align: center;">Daria Poteshkina MEPhI (Russia) <b>Ultra-short PET/CT acquisitions for differential diagnosis of glial brain tumors</b></p>
P2-23	<p style="text-align: center;">Diana Kalaeva MEPhI (Russia) <b>Dynamic IIC-methionine and 18F- fluorodeoxyglucose PET / CT in the study of brain glioma metabolism</b></p>

<b>November 23-24 Displayed on the virtual disk</b>	
D-1	<p style="text-align: center;">Natalia Amosova Obninsk Institute for Nuclear Power Engineering (Russia) <b>Cytogenetic effects of cobalt and lead in the root meristem of barley</b></p>
D-2	<p style="text-align: center;">Aleksadnra Berseneva Obninsk Institute for Nuclear Power Engineering (Russia) <b>Polymorphism of obesity genes in students of different ethnicities</b></p>

D-3	<p><i>Elizaveta Smirnova</i>  <i>Obninsk Institute for Nuclear Power Engineering (Russia)</i>  <b><i>A private problem of treatment of nosocomial infections caused by antibioticoresistent strains</i></b></p>
D-4	<p><i>Anastasia Ryabova</i>  <i>Prokhorov General Physics Institute RAS (Russia); MEPhI (Russia)</i>  <b><i>The effect of 5-aminolevulinic acid on the metabolism of cancer and immunocompetent cells</i></b></p>
D-5	<p><i>Sergey Anaskin</i>  <i>Obninsk Institute for Nuclear Power Engineering (Russia)</i>  <b><i>Features of the chronic wound process against the background of postcovid syndrome</i></b></p>
D-6	<p><i>Oksana Tilinova</i>  <i>Sarov Physics and Technology Institute (Russia)</i>  <b><i>Mathematical modeling of glycogen storage process in hepatocytes</i></b></p>
D-7	<p><i>Andrei Manzhurtsev</i>  <i>Clinical and Research Institute of Emergency Pediatric Surgery and Trauma (Russia), Emanuel Institute of Biochemical Physics RAS (Russia)</i>  <b><i>[GABA] concentration in posterior cingulate cortex after acute pediatric concussion</i></b></p>
D-8	<p><i>Maxim Ublinskiy</i>  <i>Clinical and Research Institute of Emergency Pediatric Surgery and Trauma (Russia)</i>  <b><i>Dysfunction of functional connectivity between default mode network and fusiform gyrus in patients with MCI. RSfMRI study</i></b></p>
D-9	<p><i>Tamara Zanegina</i>  <i>MEPhI (Russia)</i>  <b><i>Development of a model for assessing the asymmetry of the shape of a pigmented skin neoplasm</i></b></p>
D-10	<p><i>Petr Bulanov</i>  <i>MSU (Russia)</i>  <b><i>Cerebral intracellular acidification in children with concussion. 1H MRS study</i></b></p>
D-11	<p><i>Anastasiya Fronya</i>  <i>MEPhI (Russia), Lebedev Physical Institute RAS (Russia)</i>  <b><i>Spectral photometry based on digital CCD-camera image</i></b></p>
D-12	<p><i>Elena Voronkova</i>  <i>MEPhI (Russia)</i>  <b><i>T2 map segmentation into the deep, intermediate, and superficial layers when staging of patellar cartilage chondromalacia</i></b></p>
D-13	<p><i>Gaukhar Medetova</i>  <i>Tomsk State University (Russia), Tomsk Polytechnic University (Russia)</i>  <b><i>Calcium phosphate/poly (<math>\epsilon</math>-caprolactone) composite coatings on a titanium for drug delivery</i></b></p>
D-14	<p><i>Tatiana Ulanova</i>  <i>Obninsk Institute for Nuclear Power Engineering (Russia)</i>  <b><i>Effects of 3-hydroxypyridine fumarate on HeLa cells</i></b></p>
D-15	<p><i>Ekaterina Samarina</i>  <i>Sarov Physics and Technology Institute (Russia)</i>  <b><i>Triglyceride diffusion in one- and two-component medium: molecular dynamics simulation</i></b></p>
D-16	<p><i>Ilya Dashevskiy</i>  <i>Ishlinsky Institute for Problems in Mechanics RAS (Russia)</i>  <b><i>Quantum-chemical evaluation of the adhesion strength of tricalcium phosphate coating to titanium</i></b></p>
D-17	<p><i>Alexandra Antonova</i>  <i>MEPhI (Russia)</i>  <b><i>Debye Model and The Circuit Model: Some Strategies for Impedance Data Processing</i></b></p>

D-18	<p><i>Sergey Kulakov</i>  MEPhI (Russia)  <b>Application of phenomenon of anomalously slow relaxation of a non-wetting liquid dispersed in the pore space for drug delivery</b></p>
D-19	<p><i>Ilya Dashevskiy</i>  Ishlinsky Institute for Problems in Mechanics RAS (Russia)  <b>Minimum model for assessing the main functional and mechanical characteristics of intravascular stents</b></p>
D-20	<p><i>Ekaterina Smirnova</i>  ITMO University (Russia)  <b>Investigation of the optical properties of Pheophorbide as aggregates in biocompatible media</b></p>
D-21	<p><i>Daria Uskalova</i>  Obninsk Institute for Nuclear Power Engineering (Russia)  <b>Optimization of molecular methods for screening analysis of medical-radiation aspects in invertebrates as test systems in vivo</b></p>
D-22	<p><i>Anastas Kisel</i>  A. Tsyb Medical Radiological Research Center (Russia)  <b>Cytocompatible approach for creating pores in scaffolds</b></p>
D-23	<p><i>Polina Alekseeva</i>  MEPhI (Russia)  <b>Photodynamic therapy of precancerous diseases of the oral cavity and larynx</b></p>
D-24	<p><i>Natalia Ofitserova</i>  B. N. Yeltsin Ural Federal University (Russia)  <b>Multi-enzymatic Activity of Maltodextrin-coated Cerium Dioxide Nanoparticles</b></p>
D-25	<p><i>Denis Baldov</i>  Obninsk Institute for Nuclear Power Engineering (Russia)  <b>Efficacy of the MTT-test to determine cytotoxicity for tumor cell cultures of three types</b></p>
D-26	<p><i>Kanamat Efendiev</i>  MEPhI (Russia)  <b>Fluorescence study of the accumulation and photobleaching of 5-ala and hexyl aminolevulinatate - induced protoporphyrin ix in neoplasm tissues</b></p>
D-27	<p><i>Anastasiia Olkhova</i>  ITMO University (Russia)  <b>Study of the photoluminescence decay kinetics of CuInS<sub>2</sub>/ZnS quantum dots</b></p>
D-28	<p><i>Vsevolod Skribitsky</i>  N.N. Blokhin National Medical Research Center of Oncology (Russia)  <b>Synthesis and distribution in vivo of laser ablated gold nanoparticles</b></p>