

Organizing Committee of the Eleventh International Youth Scientific Conference “Physics. Technology. Innovation. PTI-2024”, which was held from May 20 to May 24, 2024, on the basis of the Institute of Physics and Technology of the Ural Federal University named after the first President of Russia B.N. Yeltsin, confirms that the reports of the following participants are recognized as **winners**.

Section 1. Nuclear and radiation technologies

Oral reports

1. *Denis Barabanov*, OPTIMIZATION OF INTERNAL RADIATION DOSIMETRY IN NUCLEAR MEDICINE: NEW COMPUTATIONAL APPROACHES

Poster Session

1. *Dmitry Rotman*, TECHNICAL IMPLEMENTATION OF THE METHODOLOGY FOR DETERMINING THE KINETICS OF GASEOUS FISSION PRODUCTS RELEASE FROM NUCLEAR FUEL DURING IRRADIATION

Section 2. Condensed matter physics

Oral reports

1. *Maxim Gerasimov*, SIMULATION OF THE ANOMALOUS EFFECT OF THERMOLUMINESCENCE ISOTHERMAL DECAY
2. *Ilya Petrenyov*, THERMALLY INDUCED RESISTIVE SWITCHING IN SECOND-ORDER MEMRISTIVE STRUCTURE BASED ON NANOTUBULAR ZIRCONIA
3. *Vladimir Shevelev*, OPTICAL PROPERTIES OF POLYURETHANE PLASTIC SCINTILLATOR WITH PPO AND POPOP
4. *Kristina Trofimova*, TRANSPORT PROPERTIES OF SEMICONDUCTOR COMPOUNDS BASED ON BENZOTHIENOACENE

Poster Session

1. *Polina Podgorbunskaya*, PHYSICAL AND MECHANICAL PROPERTIES OF MODERATELY DEFORMED ORDERED ALLOY CU-56AT.%AU
2. *Savely Chernyshev*, EVALUATION OF THE FLINAK-NDF3-SMF3 MELT STRUCTURAL FEATURES BASED ON DATA FROM ELECTRONIC ABSORPTION SPECTROSCOPY OF NEODYMIUM AND SAMARIUM IONS
3. *Alexandra Perevalova*, FEATURES OF MAGNETOTRANSPORT PROPERTIES OF MOXW1-XTE2 (X = 0; 0.7; 1) SINGLE CRYSTALS
4. *Eugenia Makoveeva*, ANALYSIS OF THE STABILITY OF CRYSTALLIZATION MODES WITH ACCOUNT OF MASS INFLUX AND WITHDRAWAL OF PRODUCT CRYSTALS
5. *Valeriya Govorina*, MAGNETIC ANISOTROPY IN LU₂CO₇ SINGLE CRYSTALS
6. *Vitaly Patrakov*, NUMERICAL INVESTIGATION OF PARALLEL-PLATE MAGNETIC COMPRESSION LINE
7. *Ivan Ilyashenko*, SYNTHESIS OF THIN FILMS OF GRAPHITIC CARBON NITRIDE BY CHEMICAL VAPOR DEPOSITION

Director of the Institute of Physics and Technology,
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8. *Eldar Savinov*, LUMINESCENCE OF THIOSILICATES CSRESIS4 (RE=LA, CE, TB) AS AN EFFICIENT CONVERTERS OF IONIZING RADIATION

Section 3. Instrument making and robotics

Oral reports

1. *Vyacheslav Ushakov*, SETUP FOR INVESTIGATING OF FREE RADICAL SOLUTIONS BY DYNAMIC NUCLEAR POLARIZATION METHOD

Poster Session

1. *Vyacheslav Pchelnikov*, INVESTIGATION OF METHODS FOR COMBINING FEEDBACKS IN ROYER SELF-OSCILLATING CONVERTERS
2. *Leonid Lobanov*, SUBNANOSECOND ELECTRON BEAMS FOCUSING USING HELMHOLTZ COILS FOR PULSE CATHODOLUMINESCENCE

Section 4. Chemical technology

Oral reports

1. *Daniya Khaydarova*, ANALYSIS OF LIQUIDS FOR ELECTRONICS NICOTINE DELIVERY SYSTEMS BY THE GC-MS METHOD
2. *Michael Nechkin*, STRIPPING OF URANIUM WITH SODIUM CARBONATE FROM A SATURATED MIXTURE OF HDEHP+TBP
3. *Polina Pestereva*, SYNTHESIS OF SINGLE CRYSTALS AND OPTICAL CERAMICS BASED ON SOLID SOLUTIONS OF THE AGCL0.25BR0.75 - TLI SYSTEM

Poster Session

1. *Marina Shikhaleeva*, CREATION AND PREPARATION OF A BATCH OF STANDARD SAMPLES OF LIF-NAF-KF MELT FOR DETERMINING THE CONTENT OF IMPURITIES AND CORROSION PRODUCTS
2. *Rita Alqubelat*, A STUDY USING ELECTRON PARAMAGNETIC RESONANCE SPECTROSCOPY (EPR) TO ASSESS THE QUALITY OF HYDROPHILIC POLYMER COATINGS BASED ON CARBOXYMETHYL CELLULOS
3. *Iurii Iakushev*, ELECTRONIC ABSORPTION SPECTRA OF PRASEODYMIUM IONS IN MOLTEN EUTECTIC MIXTURE OF LITHIUM AND BERILLIUM FLUORIDES (LIF-BEF₂)
4. *Karina Salikova*, LABORATORY PROTOTYPE OF THE PORTABLE DEVICE FOR CHRONOAMPEROMETRIC DETERMINING ANTIOXIDANT CAPACITY USING IRON COMPLEXES WITH 2,2'-BIPYRIDINE
5. *Eduard Kuantbaev*, RESEARCH OF THE NITROGEN OXIDES CATALYTIC REDUCTION PROCESSES OF IN A CONTACT DEVICE
6. *Yana Baimurzina*, RADIOECOLOGICAL MONITORING IN THE TERRITORIES OF THE CHELYABINSK AND SVERDLOVSK REGIONS
7. *Maria Ugryumova*, INVESTIGATION OF WASHING STAGE EFFECT OF ALUMINUM OXIDE SYNTHESIS ON ITS SPECIFIC SURFACE AND THERMAL STABILITY

Section 5. Material science

Oral reports

1. *Vladimir Matyukhov*, SYNTHESIS OF GRAPHENE COATING ON NANOPARTICLES OF METALS AND DIELECTRICS
2. *Ekaterina Ulyanova*, SYNTHESIS OF ANATASE/BROOKITE/CARBON COMPOSITES BY LOW-TEMPERATURE THERMOLYSIS OF TITANIUM GLYCOLATE. STRUCTURE AND PHOTOELECTROCHEMICAL PROPERTIES
3. *Anastasia Abdulmenova*, DEVELOPMENT OF LAYERED COMPOSITES FROM TANTALUM FOILS AND PRECERAMIC PAPERS BASED ON $Ti_3Al(Si)C_2$ MAX-PHASE

Poster Session

1. *Maksim Domashenkov*, INVESTIGATION OF THE EFFECT OF THE GRANULOMETRIC COMPOSITION OF YSZ POWDERS ON THE PROCESS OF FORMING INGOTS FOR VACUUM BEAM EVAPORATION
2. *Yagovitin Roman*, CRYSTAL AND DEFECT STRUCTURE OF TERBIUM-BARIUM COBALTITE
3. *Abu El-Soad Asmaa*, FUNCTIONALIZATION OF HALLOYSITE NANOTUBES USING TETRAETHYLENAPENTAMINE IN DIFFERENT SOLVENTS
4. *Alexey Vasiliev*, DETERMINATION OF ACOUSTIC PARAMETERS OF R18SH STEEL SAMPLES WITH DIFFERENT TEMPERING TEMPERATURES
5. *Sofia Yakovleva*, $Lu_3Al_5O_{12}:Ce^{3+}$ PHOSPHOR IN GLASS-CERAMICS FOR WHITE LIGHT-EMITTING SOURCES
6. *Daniil Pyankov*, SYNTHESIS, STRUCTURE AND TRANSPORT PROPERTIES OF CA-DOPED LAYERED PEROVSKITES BASED ON $BaLaInO_4$

Section 6. Information systems and technologies

Oral reports

1. *Anton Kutishenko*, MODELING THE PROPAGATION OF STRONG DISTURBANCES IN A GAS OF ARBITRARY RAREFACTION
2. *Daniil Zavadskii*, SOLVING ROUTE OPTIMIZATION PROBLEMS FOR RADIATION-HAZARDOUS AREAS USING THREE-DIMENSIONAL MODELING

Poster Session

1. *Ivan Novoselov*, THE STUDY OF THE PEROVSKITE SOLAR CELL PARAMETER INFLUENCE ON THEIR EFFICIENCY BY USING MACHINE LEARNING
2. *Danil Gubanov*, PACKAGE APPLICATIONS FOR AUTOMATING THE PROCESS OF CONDUCTING CLASSES ON A VIRTUALIZED LABORATORY COMPLEX OF THE UNIVERSITY
3. *Natalia Tsizhmovska*, NEURAL NETWORK MODELLING OF SENTENCE LENGTH IN INAUGURAL SPEECHES

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Section 7. Bioengineering and biotechnology

Oral reports

1. *Richard Vincent Asase*, EFFECT OF SELF-HYDROLYZED AND FERMENTED OKARA HYDROLYSATE ON XANTHAN GUM PRODUCTION
2. *Baheig Atef Abdelazim A'laa*, MOLECULAR DETECTION OF INFECTION BY ENTEROBACTER SPP IN SOME PROCESSED AND FRESH MEATS
3. *Eric Osei*, COMPARATIVE STUDY OF THE COMPOSITION AND PREPARATION OF NON-TRADITIONAL PASTA WITH A VEGETABLE ADDITIVES

Poster Session

1. *Svetlana Andreeva*, PROBLEMS OF MODELING THE BEHAVIOR OF DEFORMED BRONCHIAL ANASTOMOSIS UNDER THE ACTION OF INTERNAL FORCES
2. *Kirill Salamatov*, EXTRACTION OF FORMANTS AND OTHER FEATURES AND CLASSIFICATION OF VOICE HEALTH STATE BY MACHINE LEARNING METHODS
3. *Yaroslava Menzorova*, FUCOIDAN AS A PROMISING COATING FOR LIPOSOMAL LOADED ANTITUBERCULOSIS COMPOUND

Section 8. Innovation and social technology

Oral reports

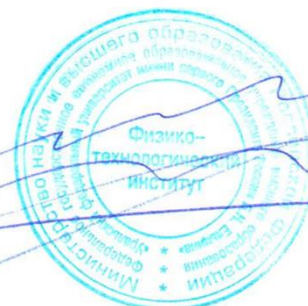
1. *Alina Aleksandrova*, GAME-THEORETIC APPROACH TO IP RIGHTS MANAGEMENT IN COOPERATION PROJECTS OF UNIVERSITIES WITH INDUSTRIAL PARTNERS

Section 9. Young talents (section of schoolchildren)

Poster Session

1. *Maksim Fadeev*, DEVELOPMENT AND CREATION OF A MULTIFUNCTIONAL ALTERNATIVE ENERGY GENERATOR THAT ENSURES THE SAFETY OF LIFE

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