

Organizing Committee of the Eighth International Youth Scientific Conference “Physics. Technology. Innovation. PTI-2021”, which was held from May 17 to May 21, 2021 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. *Eugeniy Nikitenko*, COMPARISON OF CONCENTRATION METHODS FOR SAMPLES OF GASEOUS EMISSIONS FROM AN INDUSTRIAL REACTOR FACILITY FOR DETERMINING THE RADIONUCLIDE COMPOSITION.

Poster Session

1. *Dmitry Rotman*, MODELING THE BURNUP PROCESS OF NPN AND PUO₂ FUEL COMPOSITIONS IN THE ADVANCED CONCEPTS OF A PULSED BATCH REACTOR IBR-3 AND IBR-4.
2. *Yury Mikhailov*, RESEARCH SYSTEM BASED ON PLASMA FOCUS CHAMBERS.

Online reports

1. *Daria Kuzenkova*, CALCULATED JUSTIFICATION OF EXPERIMENTS WITH MOLTEN-SALT FUEL COMPOSITIONS IN THE LOOP OF THE MBIR REACTOR.

Section 2. Condensed matter physics

Oral reports

1. *Sergey Savchenko*, DISTRIBUTION OF ACTIVATION ENERGY IN LUMINESCENCE QUENCHING PROCESSES OF INP/ZNS QUANTUM DOTS.
2. *Anna Chlenova*, DESIGN OF COMPOSITE MATERIALS BASED ON AMORPHOUS RIBBONS WITH TAILORED ANISOTROPY.
3. *Irina Dorosheva*, SYNTHESIS, MODIFICATION AND CERTIFICATION OF THE NANOSTRUCTURED TITANIUM DIOXIDE FOR ITS FURTHER APPLICATION AS A GALLIUM PHOTOSORBENT.

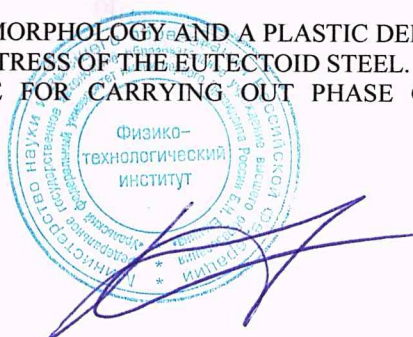
Poster Session

1. *Petr Gorinsky*, ANOMALOUS ISOTHERMAL DECAY CURVES OF THERMOLUMINESCENCE IN AL₂O₃-BEO CERAMIC
2. *Evgeny Greshnyakov*, INFLUENCE OF ELECTRIC FIELD ON INITIAL DOMAIN STRUCTURE IN LITHIUM TANTALATE WITH COMPOSITIONAL GRADIENT
3. *Lyubov Gimadeeva*, IN-PLANE POLARIZATION CONTRIBUTION TO THE VERTICAL PIEZORESPONSE FORCE MICROSCOPY SIGNAL MEDIATED BY THE CANTILEVER “BUCKLING”
4. *Mikhael Kalinkin*, INFLUENCE OF VARIOUS RE ON MECHANISM OF THERMOLUMINESCENCE IN LITHIUM MAGNESIUM PHOSPHATE
5. *Evgeny Kislov*, EFFECT OF TITANIUM AND TITANIUM DIOXIDE DOPING ON THE SUPERCONDUCTING PROPERTIES OF THE Fe_{1.02}Se COMPOUND
6. *Mikhail Urzaliyev*, ENERGETICALLY FAVORABLE CONFIGURATIONS OF SYMMETRIC TILT GRAIN BOUNDARIES IN TITANIUM(HCP)
7. *Kirill Arslanov*, MODELING OF PLASMA DEPOSITION OF CARBON COATINGS BY MOLECULAR DYNAMICS
8. *Viktor Anikin*, STUDY OF 3D-KINETICS OF DOMAIN STRUCTURE DURING POLARIZATION REVERSAL IN SBN SINGLE CRYSTALS BY SECOND HARMONIC GENERATION MICROSCOPY
9. *Anastasiya Kutavina*, CURRENT-VOLTAGE CHARACTERISTICS AND CONDUCTIVITY OF THE CdPbS THIN FILMS

Online reports

1. *Elizaveta Schapova*, EFFECTS OF A PEARLITE MORPHOLOGY AND A PLASTIC DEFORMATION ON THE MAGNETIC PROPERTIES AND A RESIDUAL STRESS OF THE EUTECTOID STEEL.
2. *Ilya Iakovlev*, CALCULATIONAL TECHNIQUE FOR CARRYING OUT PHASE CLASSIFICATION IN MAGNETIC MATERIALS.

Director of the Institute of Physics and Technology,
Conference chairman



V. Yu. Ivanov

3. *Kirill Osintsev*, PREDICTION OF SOLID SOLUTION FORMATION IN CO-CR-FE-MN-NI SYSTEM HIGH-ENTROPY ALLOYS.
4. *Tamara Kharinova*, STUDY OF THE ORGANIC LUMINOPHORES PHOTOSTABILITY IN POROUS SILICON MICROCAVITIES.
5. *Liubov Toropova*, THE SHAPE OF DENDRITIC TIPS.
6. *Nikita Krivopolenov*, SCATTERING OF ULTRASHORT LASER PULSES BY NANOSYSTEMS WITH DEFECTS.
7. *Oleg Devitsky*, INFLUENCE OF ARGON PRESSURE ON THE SURFACE MORPHOLOGY OF THIN INGAASP/SI FILMS OBTAINED BY PULSED LASER DEPOSITION.
8. *Sara Basyrova*, INFLUENCE OF MODIFICATION OF PULP AND PAPER MATERIALS ON THEIR MECHANICAL PROPERTIES.
9. *Anastasiia Kharlamova*, VISUALIZATION OF SCATTERING SPECTRA OF DOUBLE-STRANDED RIGHT-HANDED DNA MOLECULE.

Section 3. Instrument making and robotics

Oral reports

1. *Artur Serazetdinov*, DESIGN AND ANALYSIS OF 2.56 GBPS CML CMOS TRANSCEIVER WITH SPECIFIC LOAD FOR PHYSICAL INSTRUMENTATION APPLICATIONS.
2. *Mikhail Shishkin*, ANALYSIS OF INFLUENCE OF THE CLUSTERING DEGREE OF THE ANTENNA ARRAY ON ITS RADIATION CHARACTERISTICS.

Poster Session

1. *Ilya Semenov*, CONTROL DEVICE OF THE EXPERIMENTAL SETUP FOR RADON FLUX DENSITY MEASURING.
2. *Alexander Lukashov*, SOFTWARE AND HARDWARE UPGRADE OF THE PHOTOLUMINESCENCE SPECTROSCOPY SETUP.

Online reports

1. *Sergey Zabolotny*, DEVELOPMENT OF A DEVICE FOR AUTOMATIC APPLICATION OF HYDROPHOBIC COATINGS.
2. *Evgeniy Ischenko*, DUAL BAND SLOT MIMO ANTENNA FOR CELL PHONE.

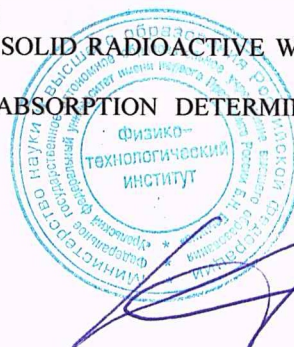
Section 4. Chemical technology

Oral reports

1. *Sergey Silenkov*, CHARACTERISTICS OF SUPERCAPACITORS ELECTRODES BASED ON TITANIA AND CARBON NANOTUBES.
2. *Alexander Nikitin*, NUMERICAL STUDY OF STEAM-AIR GASIFICATION OF KUZNETSK COAL IN ENTRAINED-FLOW REACTOR.

Poster Session

1. *Yuliya Nasonova*, DETERMINATION OF RADON, URANIUM AND THORIUM IN THE SPRINGS OF YEKATERINBURG AND THE SVERDLOVSK REGION
2. *Anastasiya Kosykh*, INFLUENCE OF THE HEAT TREATMENT REGIME ON THE PROPERTIES OF HYBRID LUMINOPHOR POWDERS OBTAINED ON THE BASIS OF LAYERED HYDROXIDE OF GADOLINIUM-TERBIUM.
3. *Elena Kulyashova*, THE STUDY OF POLONIUM-210 SORPTION BY A THIN-LAYER MNO₂-CTA SORBENT
4. *Ekaterina Khrushkova*, DETERMINATION OF THE CONTENT OF BIOLOGICALLY-ACTIVE COMPOUNDS OF POLYPHENOL NATURE IN EXTRACTS OF RAW MATERIALS
5. *Obiedallah M.*, DEVELOPMENT AND EVALUATION OF IN SITU GELS CONTAINING ACETAZOLAMIDE MICROSPONGES FOR OPHTHALMIC DELIVERY
6. *Marina Kozlova*, STUDY KINETICS OF OXIDATION OF CATION EXCHANGE RESIN KU-2×8 WITH AQUEOUS SOLUTION OF HYDROGEN PEROXIDE
7. *Ilya Evdokimov*, LEACHING OF URANIUM FROM SOLID RADIOACTIVE WASTE BY HYDROCHLORIC ACID SOLUTIONS
8. *Victoria Igoshcheva*, ELECTROTHERMAL ATOMIC ABSORPTION DETERMINATION OF GOLD AFTER EXTRACTION CONCENTRATING



9. *Marina Shikhaleeva*, DETERMINATION OF CARBON AND OTHER COMPONENTS OF CAST IRONS BY XRF
10. *Daria Romanova*, IMPROVEMENT OF THE METHOD OF ANALYSIS OF SCANDIUM OXIDE BY THE METHOD OF ATOM, PHOTOPHYSICAL PROPERTIES OF PENTAFLUORO-ARYL-2H-IMIDAZOLES AND THEIR APPLICATION AS PH-SENSITIVE FLUOROPHORS FOR DETERMINING THE ACIDITY OF SALIVA

Online reports

1. *Georgii Klevtsov*, MODERNIZATION OF THE HYDROTREATING PLANT IN ORDER TO SOLVE THE PROBLEMS OF ENERGY SAVING.

Section 5. Material science

Oral reports

1. *Ivan Gilev*, EFFECT OF TI AND ZR ADDITIONS ON THE STRUCTURE AND MECHANICAL PROPERTIES OF THE AL-4%CU ALLOY.
2. *Ekaterina Ulyanova*, NIR PHOTOLUMINESCENCE IN C-MODIFIED TITANIUM DIOXIDE WITH ANATASE-BROOKITE MATRICE.
3. *Dmitry Fedorov*, ²³Na NMR IN COMPLEX SODIUM TUNGSTATES WITH A NASICON-TYPE STRUCTURE.
4. *Anastasia Batenkova*, EFFECT OF AL ADDITION ON THE PHASE COMPOSITION, MICROSTRUCTURE, AND MICROHARDNESS OF NANOCRYSTALLINE WC CERAMICS.
5. *Ivan Popov*, DIFFUSION OF THE PHASE TRANSITION IN FERROELECTRIC CERAMIC Ba1-XSRxTiO3.
6. *Alsu Valinurova*, THE SYNTHESIS OF CERAMIC ZrO₂-Y₂O₃ FIBERS BY THE METHOD OF IMPREGNATION OF VISCOSE WOOL.

Poster Session

1. *Artem Maksimov*, OBTAINING OF COMPLEX NANOPARTICLES BY THE SPARK DISCHARGE METHOD.
2. *Dmitry Polivoda*, STUDY OF EFFECT OF THE SPECIFIC SURFACE AREA OF ZIRCONIUM DIOXIDE POWDER ON THE SINTERED DENSITY.
3. *Roman Yagovitin*, THERMODYNAMICS OF DISORDERING OF YBaCo₂O_{6-Δ}.
4. *Nikolay Martemianov*, THERMAL SYNTHESIS PARAMETERS EFFECT ON G-C₃N₄ STRUCTURAL AND OPTICAL PROPERTIES.
5. *Anastasia Trubcheninova*, INFLUENCE OF SURFACE MODIFICATION METHODS ON THE CORROSION PROPERTIES OF NICKEL ALLOY KHN62M IN MOLTEN SALTS BASED ON FLINAK.
6. *Ilya Kuklin*, INVESTIGATION ON ELECTROREDUCTION OF Cu(II) USING A NANOCOMPOSITE TRACK MEMBRANE ELECTRODE.
7. *Polina Cheremisina*, SYNTHESIS AND TRANSPORT PROPERTIES OF NEW COMPLEX OXIDE BaLaIn_{0.5}Y_{0.5}O₄ WITH RUDDLESDEN-POPPER STRUCTURE.

Online reports

1. *Ilya Volkov*, NANOSTRUCTURES (Cu,Zn)/H-BN FOR HETEROGENEOUS CATALYSIS.
2. *Ksenia Romanova*, QUANTUM-CHEMICAL STUDY OF OPTOELECTRONIC MATERIALS BASED ON SEMICONDUCTOR QUANTUM DOTS CDSECDs AND LIQUID-CRYSTALLINE POLYMERS.
3. *Danil Barilyuk*, STRUCTURE OF THE NOVEL SUPERELASTIC Ti-Zr-Nb ALLOY WITH A HIGH Zr CONTENT.
4. *Natalya Teryukalova*, ION-PLASMA MULTI-PHASE COPPER-TITANIUM COATINGS DEPOSITED ON THE ALLOY C17200.
5. *Danil Novgorodov*, STUDY OF DEFECTS OF LONGITUDINAL WELDED PIPE.

Section 6. Information systems and technologies

Oral reports

1. *Dmitriy Shumkov*, EXPERIMENTAL INVESTIGATIONS OF TEMPERATURE CONDITIONS IN THE STORAGE PIT OF THE RESEARCH NUCLEAR REACTOR IVV-2M.

Poster Session

1. *Sviatoslav Kiselyov*, DATA PROCESSING OF SECONDARY ION MASS SPECTROMETRY: ANALYSIS OF ATMOSPHERIC AEROSOL SAMPLES FROM 2020.

Online reports

1. *Dmitry Antonov*, NOISE DATA IMPACT ON CATASTROPHIC INTERFERENCE OF SPIKING NEURAL NETWORKS.

Section 7. Bioengineering and biotechnology

Oral reports

1. *Denis Volzhaninov*, THE IMPLEMENTATION OF THE QUASI-ISOMETRIC CONTRACTION MODE OF A SINGLE CARDIOMYOCYTE USING A DIGITAL MICROMANIPULATION SYSTEM.
2. *Maria Komaristaia*, APPLICATION OF NEURAL NETWORKS FOR PROCESSING HEART MEDICAL IMAGES.
3. *Anastasia Chumanova*, INVESTIGATION OF THE RADIATION-INDUCED SIGNAL IN WHEAT SEEDS BY EPR METHOD.

Poster Session

1. *Natalia Ofitserova*, MALTODEXTRIN-COATED CERIUM OXIDE NANOPARTICLES AS MULTIFUNCTIONAL NANOZYME.
2. *Vicktoria Baynova*, DEVELOPMENT OF METHOD FOR ANALYSIS OF THE T-TUBULAR SYSTEM IN RAT CARDIOMYOCYTES.
3. *Valeria Uzhneva*, RESEARCH OF THE EFFICIENCY OF BANANAS' RADIATION TREATMENT.
4. *Aleksandra Myshkina*, PROSPECTS FOR USE RARE EARTH METAL OXIDES NANOPARTICLES IN BIOLOGY AND MEDICINE.

Online reports

1. *Darya Zykova*, APPLICATION OF TIME-RESOLVED FLUORESCENCE TECHNIQUE FOR STABILITY ANALYSIS OF FIREFLY LUCIFERASE LUCIOLA MINGRELICA.
2. *Dmitrii Belov*, NUCLEIC ACID FRAGMENTS MELTING SIGNALS PROCESSING.
3. *Alina Krainova*, THE CREATION OF THE DESIGN OF THE TRIPOD FOR POSITIONING A SURGICAL MICROSCOPE WHILE PERFORMING ATHEROGENIC INTERVENTIONS.

Section 8. Innovation and social technology

Oral reports

1. *Stanislav Ozornin*, MODELS FOR AGILE PROJECT MANAGEMENT UNDER A DIGITAL TRANSFORMATION.

Online reports

1. *Alena Molodnyakova*, DEVELOPMENT OF THREE-DIMENSIONAL THINKING OF CHILDREN OF SENIOR PRESCHOOL AGE IN THE CONDITIONS OF THE COMPUTER-GAME COMPLEX "LIGROGAME".

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