

Organizing Committee of the Ninth International Youth Scientific Conference "Physics. Technology. Innovation. PTI-2022", which was held from May 16 to May 20, 2022 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. *Rumyantseva Daria*, INVESTIGATION OF THE DISTRIBUTION OF URANIUM ISOTOPES AT THE BOUNDARY OF POLAR AND NONPOLAR ENVIRONMENTS
2. *Glukhov Stepan*, ESTIMATED ESTIMATION OF THE RESIDUAL HEAT RELEASE OF SFAS IN THE HOLDING POOLS

Poster Session

1. *Doroshenko Darya*, ELECTROCHEMICAL STUDY OF REACTION OF OXYGEN WITH SAMARIUM CHLORIDE IN MOLTEN SALT MEDIA

Online reports

1. *Kuzenkova Daria*, ISOTOPIC KINETIC SIMULATION IN MBIR REACTOR LOOP CHANNEL WITH CIRCULATING FUEL

Section 2. Condensed matter physics

Oral reports

1. *Pasynkova Anna*, MAGNETIC AND MAGNETOIMPEDANCE IMPEDANCE PROPERTIES OF COBALT-BASED AMORPHOUS RIBBONS WITH DIFFERENT GEOMETRIES
2. *Martemianov Nikolay*, FEATURES OF OPTICAL PROPERTIES OF GRAPHITIC CARBON NITRIDE
3. *Dorosheva Irina*, SYNTHESIS AND CERTIFICATION OF G-C₃N₄/TiO₂ NANOHETEROSTRUCTURE
4. *Petrenyov Ilya*, THE RELIABILITY ESTIMATION FOR MEMRISTOR STRUCTURES BASED ON NANOTUBULAR ZIRCONIA
5. *Belyaev Danil*, STUDY OF THE IRON STATE IN PHARMACEUTICAL PRODUCTS USING MÖSSBAUER SPECTROSCOPY

Poster Session

1. *Kozlov Ilya*, NANOSTRUCTURES CREATED IN COBALT-BASED AMORPHOUS MICROWIRES FOR MAGNETIC SENSORS
2. *Stupak Maksim*, SPECIAL GRAIN BOUNDARY SELF-DIFFUSION IN BCC-TUNGSTEN
3. *Gerasimov Maxim*, ENERGY DISTRIBUTION OF TRAPS IN AL₂O₃-BEO CERAMICS
4. *Trofimova Kristina*, OPTICAL PROPERTIES OF BENZOTHIENOACENES
5. *Shilov Artem*, KINETIC PARAMETERS OF THERMALLY STIMULATED LUMINESCENCE IN NANOTUBULAR HAFNIA

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6. *Germizina Anastasia*, SHAPE ANISOTROPY EFFECT IN MICROSTRIPED SPIN VALVES WITH SYNTHETIC ANTIFERROMAGNET
7. *Naydanov Ivan*, HIGHLY SENSITIVE COFENI/CU SUPERLATTICES WITH MAGNETIC FLUX CONCENTRATORS
8. *Komarova Valeria*, MAGNETOCALORIC EFFECT OF MAGNETICALLY ORDERED FE₃-XNIXSE₄ COMPOUNDS

Online reports

1. *Shein Danila*, MODELING OF PHOSPHORENE WITH CLASSICAL MOLECULAR DYNAMICS USING DEEP LEARNING
2. *Leshcheva Alina*, EFFECTIVE LIGHT CONVERTERS BASED ON MESOGENIC B-DIKETONATE COMPLEXES OF EUROPIUM
3. *Bondarevskaya Anna*, TUNNELING RELAXATION IN THE SYSTEM OF JAHN-TELLER COMPLEXES IN FLUORITE CRYSTAL DOPED WITH COPPER IONS
4. *Osintsev Kirill*, INFLUENCE OF HIGH-CURRENT PULSED ELECTRON BEAM SURFACE TREATMENT ON TRIBOLOGICAL CHARACTERISTICS OF NON-EQUIMOLAR AL-CO-CR-FE-NI HIGH-ENTROPY ALLOY
5. *Tyutrin Alexander*, PHOTOLUMINESCENCE OF CD'S BEFORE AND AFTER UV IRRADIATION
6. *Ruslan Sukhachev*, THEORETICAL STUDIES OF THE MAGNETIC ANISOTROPY OF COBALT FILMS SEPARATED BY A COPPER PLATE
7. *Makarova Ksenia*, SCATTERING OF ATTOSECOND PULSES ON MULTI-ATOMIC MOLECULES

Section 3. Instrument making and robotics

Oral reports

1. *Ziyadiev Ramil*, SOFTWARE AND HARDWARE COMPLEX FOR INCREASING THE THROUGHPUT OF A GEOPHYSICAL CABLE
2. *Shishkin Mikhail*, ANALYSIS OF VARIOUS DESIGNS OF WIDEBAND PRINTED ANTENNAS

Poster Session

1. *Ungviitskii Gleb*, THE PROGRAM CONTROLLED ELECTRONIC LOAD
2. *Vasileva Daria*, DEVELOPMENT OF A MEASURING COMPLEX TO MONITOR THE CONCENTRATION OF ATMOSPHERIC AEROSOL AND METEOROLOGICAL PARAMETERS IN THE SURFACE AIR

Online reports

1. *Subbotin Nikolay*, DEVELOPMENT OF A NAVIGATION SYSTEM FOR A GROUP OF ROBOTS TO PASS AN UNFAMILIAR OBJECT SUCH AS A LABYRINTH
2. *Poletaev Dmitrii*, DEVICE FOR MONITORING RESEARCH OBJECT'S POSITION

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Section 4. Chemical technology

Oral reports

1. *Yuzhakova Anastasia*, STUDY OF SILVER HALIDES PHASE DIAGRAMS FOR THE DEVELOPMENT OF NEW OPTICAL MATERIALS
2. *Gushshamova Viktoria*, INVESTIGATION OF THE USEFUL TEMPERATURE DIFFERENCE EFFECT ON THE CHANGE IN ABSOLUTE PRESSURE IN THE HEAT EXCHANGE TUBE OF THE FALLING-FILM EVAPORATOR
3. *Suetina Anna*, DETERMINATION OF CS-137 IN NATURAL WATERS IN THE SVERDLOVSK AND CHELYABINSK REGIONS
4. *Kartashova Elena*, MONITORING THE OXYGEN OF ALKALI METAL FLUORIDES BY THE CARRIER GAS HOT EXTRACTION

Poster Session

1. *Khorkova Arina*, DETERMINATION OF WATER IN TECHNOLOGICAL GASES
2. *Yarkova Elena*, DEVELOPMENT OF THE PORTABLE DEVICE PLATFORM FOR DETERMINING THE ANTIOXIDANTS CONTENT OF THE POTENTIOMETRIC METHOD
3. *Merkucheva Ksenia*, EXTRACTION OF MO FROM MODEL SOLUTIONS FOR PROCESSING NICKEL-ALUMINUM-COBALT CATALYSTS
4. *Polivoda Dmitry*, INFLUENCE OF THE PH VALUE ON THE PROPERTIES OF ZIRCONIA POWDERS AND CERAMIC IN THE PROCESS OF HYDROLYSIS OF BASIC ZIRCONIUM SULFATE
5. *Dokuchaev Igor*, INVESTIGATION OF TRANSFORMATIONS OF MODEL PETROLEUM RAW MATERIALS ON A SPENT HYDROTREATING CATALYST
6. *Ermolaeva Valeria*, SYNTHESIS AND STUDY OF SORPTION PROPERTIES OF THIN-LAYER SORBENTS BASED ON CADMIUM SULFIDE
7. *Zotova Elina*, DEVELOPMENT OF A TECHNIQUE FOR THE ANALYSIS OF A FUEL COMPOSITION BASED ON LITHIUM AND BERYLLIUM FLUORIDES BY THE ATOMIC EMISSION METHOD WITH INDUCTIV
8. *Shikhaleeva Marina*, DETERMINATION OF COMPONENT CONTENT IN STEELS BY XRF, TAKING INTO ACCOUNT MATRIX EFFECTS AND SPECTRAL OVERLAPS

Online reports

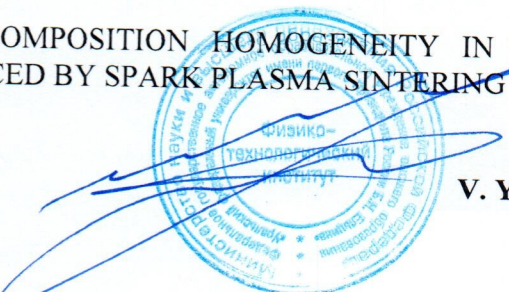
1. *Radaykin Dmitry*, SYNTHESIS AND INVESTIGATION OF THE ACTIVITY IN PHOTOCATALYSIS OF ZINC OXIDE PARTICLES ON A POROUS SUBSTRATE
2. *Eralieva Aygerim*, ADAPT AND MAKE ACCESSIBLE THE TRI-N-OCTYLPHOSPHINE-ASSISTED SILAR METHOD

Section 5. Material science

Oral reports

1. *Smetanina Ksenia*, STUDY OF PHASE COMPOSITION HOMOGENEITY IN DEPTH OF TUNGSTEN CARBIDE CERAMICS PRODUCED BY SPARK PLASMA SINTERING

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2. *Anokhina Irina*, STUDY OF THE PROCESS OF INTERACTION OF GD2-XMGXZR207-8 CERAMICS WITH LiCl-Li2O AND LiF-NAF-KF MELTS
3. *Kuznetsova Yulia*, NEW GLASS-CERAMICS MATERIAL: SYNTHESIS AND OPTICAL PROPERTIES
4. *Kokh Dieter*, SYNTHESIS OF THIN FILMS FROM MONODISPERSED POLYMETHYLMETHACRYLATE MICROSPHERES
5. *Akhmadiyeva Anastasia*, INFLUENCE OF ALN NANOPARTICLES ON THE STRUCTURE AND MECHANICAL PROPERTIES OF ML5 ALLOY
6. *Shabanova Ksenia*, SYNTHESIS AND STUDY BY ELECTRON MICROSCOPY OF INVERSE OPALS FROM ZIRCONIUM OXIDE

Poster Session

1. *Zykov Fedor*, COBALT DOPED NANOTUBULAR TITANIUM OXIDE
2. *Polotov Boris*, AB INITIO ESTIMATIONS OF TRANSPORT PROPERTIES OF SOLID OXIDE MOLYBDATES
3. *Begunova Anastasia*, INFLUENCE OF OXIDATION ON THE SYNTHESIS OF CARBON NANOTUBES ON THE EXTRATERRESTRIAL MATTER
4. *Muftakhetdinova Razilia*, THE MECHANICAL PROPERTIES OF CHONDRITES WITH STRUCTURE CHANGED BY IMPACT
5. *Filanovich Anton*, PREDICTION OF THERMODYNAMIC AND ELECTRONIC PROPERTIES OF DOUBLE HALF HEUSLER ALLOYS BASED ON MACHINE LEARNING METHODS
6. *Kharisova Ksenia*, INVESTIGATION OF THE INFLUENCE OF PARTICLE SIZE DISTRIBUTION OF POWDER MATERIALS ON THE PROPERTIES OF SOEC CERMET CATHODE
7. *Ezhov Igor*, THE INFLUENCE OF POROSITY OF SAMPLES OF AUSTENITIC STEEL MANUFACTURED BY LASER 3D PRINTING ON THE PROCESS OF DYNAMIC DEFORMATION AGEING

Online reports

1. *Riabinkina Polina*, PARTICLES' DEFORMATION DURING DETONATION SPRAYING ON SOFT AND HARD SUBSTRATE: COMPARISON OF EXPERIMENTAL DATA AND SPH-SIMULATION
2. *Novgorodov Danil*, IDENTIFICATION OF THE CAUSES OF THE DESTRUCTION OF THE BODY OF THE SHUT-OFF VALVE

Section 6. Information systems and technologies

Oral reports

1. *Ogorodnikova Svetlana*, ANALYSIS OF THE SURVIVAL RATE OF CANCER DISPENSARY PATIENTS AFTER RADICAL CYSTECTOMY
2. *Dordiuk Vladislav*, APPLYING THE METHODS OF NLP TO THE RESULTS OF DIFFERENTIAL GENE EXPRESSION ANALYSIS

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Poster Session

1. *Konyushevskiy Andrey*, TECHNOLOGICAL LOAD INFLUENCE ON THE DYNAMICS OF SPATIAL GEARS WITH UNIVERSAL JOINTS
2. *Andreeva Svetlana*, APPLICATION OF STRESS-STRAIN MODELS TO THE BRONCHIAL ANASTOMOSIS BY SECTION
3. *Askarova Elizaveta*, COMPUTER DIFFERENTIATION OF A RECURRENT GLIAL TUMOR FROM NECROSIS BY MRI IMAGES

Online reports

1. *Serebrennikova Sofia*, A MODEL FOR MONITORING AURORAL ACTIVITY BASED ON GNSS DATA, BUILT ON THE BASIS OF RANDOM FOREST MACHINE LEARNING

Section 7. Bioengineering and biotechnology

Oral reports

1. *Izmojerova Kira*, FLUORESCENT SENSOR HYDROGEL FOR PESTICIDE DETECTION
2. *Bukhanov Eugene*, MODELING OPTICAL PROPERTIES OF BIOLOGICAL STRUCTURES
3. *Tselishcheva Anastasia*, VOICE DISORDER IDENTIFICATION USING RECURRENT NEURAL NETWORKS
4. *Narkhova Anastasia*, INVESTIGATION OF THE RADIATION TREATMENT EFFECTIVENESS FOR COMPOUND FEED WITH A LOW-ENERGY ELECTRON BEAM

Poster Session

1. *Ofitserova Natalia*, EFFECT OF CERIUM DIOXIDE NANOPARTICLES DOPING WITH RARE EARTH METAL IONS ON THE BIOCATALYTIC ACTIVITY
2. *Prokopeva Olga*, THE RESEARCH ON THE HETEROGENEITY OF CARBON PLASMA FLOW OF THE FACILITY UVNIPA-1-001
3. *Alzuabi Ali*, MACHINE LEARNING APPLICATION FOR DIABETES PREDICTION

Online reports

1. *Vladislav Nikitin*, INSTALLATION FOR DETERMINING THE TACTILE FORCE OF THE DISTAL PHALANX OF THE PROSTHESIS WHEN INTERACTION WITH THE SUPPORT

Section 8. Innovation and social technology

Oral reports

1. *Davydov Yuriy*, COMPLEX FOR REMOTE EXECUTION OF LABORATORY WORK ON RADIO ELECTRONICS
2. *Ozornin Stanislav*, ANALYSIS OF THE APPLICABILITY OF AGILE PROJECT MANAGEMENT MODELS UNDER ECONOMY DIGITALIZATION

Online reports

1. *Molodnyakova Alena*, DEVELOPMENT OF GEOMETRIC 3D MODEL OF UNDERWATER TRANSPORT AQUACAR IN THE COMPUTER PROGRAM LIGROGAME

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