

International Scientific Conference on Radiation-Thermal Effects and Processes in Inorganic Materials 2014

**IOP Conference Series: Materials Science and Engineering
Volume 81**

**Tomsk, Russia
3 - 8 November 2014**

**ISBN: 978-1-5108-0295-7
ISSN: 1757-8981**

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

Copyright© (2014) by the Institute of Physics
All rights reserved. The material featured in this book is subject to
IOP copyright protection, unless otherwise indicated.

Printed by Curran Associates, Inc. (2015)

For permission requests, please contact the Institute of Physics
at the address below.

Institute of Physics
Dirac House, Temple Back
Bristol BS1 6BE UK

Phone: 44 1 17 929 7481
Fax: 44 1 17 920 0979

techtracking@iop.org

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2634
Email: curran@proceedings.com
Web: www.proceedings.com

TABLE OF CONTENTS

CHANGE SPECTRUM CHARACTERISTICS MODIFICATION OF FILMS DEPOSITED BY MAGNETRON SPUTTERING WITH THE ASSISTANCE OF ARGON IONS BEAM.....	1
<i>S Umnov, O Asainov</i>	
RADIATION INTENSIFICATION OF THE REACTOR PRESSURE VESSELS RECOVERY BY LOW TEMPERATURE HEAT TREATMENT (WET ANNEALING).....	6
<i>E Krasikov</i>	
RADIATION-THERMAL SYNTHESIS OF W-TYPE HEXAFERRITES.....	11
<i>V A Zhuravlev, E P Naiden, R V Minin, V I Itin, V I Suslyayev, E Yu Korovin</i>	
DEVELOPMENT OF TECHNOLOGY AND INVESTIGATION OF STRUCTURE AND PROPERTIES OF COMPOSITES ON THE BASIS OF SHUNGIT AND POLYMER RESINS.....	18
<i>A I Kupchishin, M K Nauryzbaev, A A Kupchishin, F F Komarov, G E Remnev, N A Voronova, M Kaykanov</i>	
ACCUMULATION OF FREE RADICALS IN IRRADIATED POLYTETRAFLUOROETHYLENE AND STUDY OF ITS PROPERTIES.....	22
<i>K B Tlebaev, A A Kupchishin, A I Kupchishin</i>	
ELECTROPHYSICAL PROPERTIES OF POLYCRYSTALLINE DIAMOND FILMS DEPOSITED FROM AN ABNORMAL GLOW DISCHARGE.....	26
<i>A V Gaydaychuk, A V Kabyshev, F V Konusov, S A Linnik, G E Remnev</i>	
RESEARCH ON THE RADIATION EXPOSURE “MEMORY EFFECTS” IN ALGAAS HETEROSTRUCTURES.....	32
<i>A V Gradoboev, V V Sednev</i>	
TRANSITION IN ALGALNP HETEROSTRUCTURES WITH MULTIPLE QUANTUM WELLS DURING FAST NEUTRON RADIATION.....	39
<i>A V Gradoboev, K N Orlova</i>	
MODIFICATION OF THE SURFACE LAYER OF THE SYSTEM COATING (TICUN)/SUBSTRATE (A7) BY AN INTENSIVE ELECTRON BEAM.....	45
<i>Yu F Ivanov, A I Potekaev, E A Petrikova, O V Ivanova, I A Ikonnikova, V V Shugurov, O V Krygina, A A Klopotov</i>	
THE STUDY OF THE FERROELECTRIC PROPERTIES OF LITHIUM-TITANIUM FERRITE.....	54
<i>A V Malyshev, E V Nikolaev, A P Surzhikov, A N Zarubin</i>	
FRACTOGRAPHY OF THE FATIGUE FRACTURE SURFACE OF SILUMIN IRRADIATED BY HIGH-INTENSITY PULSED ELECTRON BEAM.....	59
<i>Yu F Ivanov, K V Alsaraeva, E A Petrikova, A D Teresov, V E Gromov, S V Konovalov</i>	
THE ROLE OF THE VACANCY COMPLEXES OF NANOCOMPACTED ALUMINUM PARTICLES ON THE FORMATION OF STRUCTURE DURING HEAT TREATMENT.....	65
<i>Yu Ya Gafner, V S Baidyshev</i>	
DEGRADATION OF AUSTENITIC STEEL 12X18H10T AFTER ELECTRON BEAM IMPACT.....	70
<i>S V Plotnikov, N K Erdybaeva, E O Tleukenov</i>	
CALCULATIONS OF THE HEAT CAPACITY OF CU CLUSTERS SYNTHESIZED BY CONDENSATION FROM THE GAS PHASE.....	84
<i>I V Chepkasov, L V Redel</i>	
INFLUENCE OF AN INITIAL CHEMICAL STATE OF BIVALENT CATION IMPURITIES ON THEIR DIFFUSION ACTIVITY IN ALKALI-HALIDE CRYSTALS.....	89
<i>S A Ghyngazov, T S Frangulyan, A V Chernyavskii</i>	
CHANGES IN METAL PROPERTIES AFTER THERMAL AND ELECTRIC IMPULSE PROCESSING.....	93
<i>N A Shaburova</i>	
THE FORMATION OF STABLE HYDROGEN IMPERMEABLE TIN-BASED COATINGS ON ZIRCONIUM ALLOY ZR1%NB.....	99
<i>E B Kashkarov, N N Nikitenkov, Yu I Tyurin, M S Syrtanov, Zhang Le</i>	
STUDY OF THE PLASMA IMMERSION IMPLANTATION OF TITANIUM IN STAINLESS STEEL.....	105
<i>N N Nikitenkov, A N Sutygina, I A Shulepov, D O Sivin, E B Kashkarov</i>	
EFFECT OF POR-SiC BUFFER LAYER ON THE PARAMETERS OF THIN ER₂O₃ LAYERS ON SILICON CARBIDE SUBSTRATES.....	111
<i>Yu Yu Bacherikov, R V Konakova, O B Okhrimenko, N I Berezovska, L M Kapitanchuk, A M Svetlichnyi, L A Svetlichnaya</i>	
NANODEFECT SUBSTRUCTURES IN CRYSTAL PHOSPHORS.....	116
<i>V Lisitsyn, L Lisitsyna, E Polisdova</i>	

THE STRUCTURE AND PROPERTIES OF THE NANOCOMPOSITE FILMS NB-AL-N	124
<i>V I Ivashenko, A D Pogrebnyak, P L Skrinski, V N Rogoz, S V Plotnikov, N K Erdybaeva, E O Tleukenov</i>	
COMPUTER SIMULATION OF THE SINGLE CRYSTAL SURFACE MODIFICATION AND ANALYSIS AT GRAZING LOW-ENERGY ION BOMBARDMENT	130
<i>F F Umarov, A A Dzburakhalov, K M Mukashev</i>	
INFLUENCE OF ABSORBED ENERGY DISTRIBUTION ALONG BEAM RADIUS ON IGNITION THRESHOLD OF CONDENSED EXPLOSIVES	138
<i>A V Khanef, G A Ivanov, E V Duginov</i>	
SPECTRAL AND KINETIC CHARACTERISTICS OF THE LUMINESCENCE CENTER IN LiF-WO₃ AND ZNWO₄ CRYSTALS	144
<i>L A Lisitsyna, I A Tupitsyna, L N Trefilova</i>	
IMPACT OF DEFECTIVENESS ON THE PARAMETERS OF THE ACOUSTOELECTRIC TRANSFORMATIONS IN HETEROGENEOUS NON-METALLIC MATERIALS	153
<i>T V Fursa, B A Lyukshin, G E Utsyn, D D Dann</i>	
THE ELECTRICAL CONDUCTIVITY OF THE SURFACE LAYERS OF OXIDE POLYCRYSTALLINE SEMICONDUCTORS IRRADIATED BY ACCELERATED IONS	159
<i>T S Frangulyan, S A Ghyngazov, S M Kaz</i>	
STABILITY OF THE GAAS BASED HALL SENSORS IRRADIATED BY GAMMA QUANTA	165
<i>A V Gradoboev, G F Karlova</i>	
DEVELOPMENT OF METHOD OF EVALUATION OF CONCRETE DAMAGE IN THE PROCESS OF CYCLIC FREEZE-THAWING	171
<i>T V Fursa, A A Demikhova, A P Surzhikov</i>	
THE METHOD FOR DETERMINATION OF ELECTRON-BEAM CHARACTERISTICS IN THE DENSE GASEOUS MEDIUM	176
<i>R N Rizakhanov, A A Barmin, R I Rudshtein, S Kh Djanibekova</i>	
THE POSSIBILITY OF USING PHASE TRANSITION IN NI AND CU NANOCLUSTERS FOR INFORMATION RECORDING PROCESSES	184
<i>Yu Ya Gafner, S L Gafner</i>	
RESEARCH OF THE THERMAL-TENSION CONDITION AND THE ELEMENTAL COMPOSITION GRADIENT CHANGES OF BINARY SYSTEMS PRODUCED BY COMBINED ION-PLASMA METHOD	189
<i>A I Blesman, D V Postnikov, D A Polonyankin</i>	
SOME SPECIFIC FEATURES OF SPECTRAL BANDS LOCATION IN THE INFRARED SPECTRA OF CRYSTALS AND LIQUIDS	195
<i>G Melnikov, N Ignatenko, V Melnikov, E Cherkasov</i>	
ANALYSIS OF THERMAL EFFECTS ON COPPER NANOPARTICLES SYNTHESIZED FROM THE GAS PHASE	201
<i>I V Chepkasov, Z I Popov</i>	
FEATURES OF RADIATION DAMAGE OF NI-TI ALLOY UNDER EXPOSURE TO HEAVY IONS OF GASEOUS ELEMENTS	206
<i>V P Poltavtseva, S B Kislitsin, D A Satpayev, T S Mylnikova, A V Chernyavskii</i>	
RADIATION THERMAL PROCESSES IN CR13MO2NBVB STEEL - THE MATERIAL OF THE FUEL ASSEMBLY SHELL IN REACTOR BN-350 UNDER MECHANICAL TESTS	212
<i>A S Larionov, A S Dikov, V P Poltavtseva, S B Kislitsin, M V Kuimova, A V Chernyavskii</i>	
CHARACTERIZATION OF POROUS GLASS-CERAMIC MATERIAL AS ABSORBER OF ELECTROMAGNETIC RADIATION	217
<i>O Kazmina, V Suslyaev, M Dushkina, B Semukhin</i>	
PARTICULARITIES OF RADIATION DEFECT FORMATION IN CERAMIC BARIUM CERATE	222
<i>I V Khromushin, T I Aksenova, T Tuseev, K K Munasbaeva, Yu V Ermolaev, V N Ermolaev, A S Seitov</i>	
THE NATURE OF GLOW ARISING IN PETN MONOCRYSTALS' EXPLOSION INITIATED BY A PULSED ELECTRON BEAM	228
<i>B P Aduiev, G M Belokurov, S S Grechin, I Yu Liskov, A V Kalenskii, A A Zvekov</i>	
FORMATION OF THE SURFACE ALLOYS BY HIGH-INTENSITY PULSED ELECTRON BEAM IRRADIATION OF THE COATING/SUBSTRATE SYSTEM	232
<i>Yu F Ivanov, E A Petrikova, A D Teresov, O V Krysina, M E Rygina</i>	
MATHEMATICAL MODELLING OF THE SPREAD OF CONTAMINATION DURING FIRES IN FORESTS EXPOSED TO RADIOACTIVE CONTAMINATION	238
<i>Valeriy Perminov</i>	
THE OPTICAL CONTROL SYSTEM OF DISPERSED PHASE PROPERTIES IN THERMAL SPRAY PROCESS	249
<i>A V Dolmatov, I P Gulyaev, V I Jordan</i>	

GAS - DISCHARGE ELECTRON SOURCES WITH GAS- DYNAMIC BEAM OUTPUT WINDOWS	258
<i>L N Orlikov, N L Orlikov</i>	
THE COMBINATION METHODIC OF DIFFUSION AND IMPLANTATION TECHNOLOGIES FOR CREATING OPTIC WAVE-GUIDED LAYERS IN LITHIUM NIOBATE	264
<i>L N Orlikov, N L Orlikov, S I Arestov, K M Mambetova, S M Shandarov</i>	
PRODUCTION OF NANOSTRUCTURED TiO₂ FILMS BY PULSED LASER DEPOSITION	270
<i>Ye Khuanbay, N Kh Ibrayev, D A Afanasyev, A K Aimukhanov</i>	
CRYSTALLOGRAPHIC FEATURES OF MAGNETOSTATIC WAVES SPECTRA IN FERRITE FILMS	274
<i>V V Shagaev, Tun Tun Lin</i>	
EFFECT OF MORPHOLOGY OF ZNO NANOWIRE ARRAYS ON PHOTOVOLTAIC AND ELECTRON TRANSPORT PROPERTIES OF DSSC	281
<i>B R Ilyassov, N Kh Ibraev, D B Abzhanova</i>	
THE PECULIARITIES OF IMPLANTED DEUTERIUM CAPTURE IN KH16N15M3T1 AUSTENITIC STEEL WITH DIFFERENT STRUCTURE	287
<i>G A Raspopova, V A Arbutov</i>	
MODEL OF CRATERING BY SINGLE IONS IN HEAVY METALS	294
<i>A I Kalinichenko, S S Perepelkin, V E Strel'nitskij</i>	
CALCULATION OF INTRINSIC STRESSES IN THE DIAMOND-LIKE COATINGS PRODUCED BY PLASMA ION DEPOSITION IN MODES OF DC AND PULSE BIAS POTENTIALS	300
<i>A A Kalinichenko, S S Perepelkin, V E Strel'nitskij</i>	
THE STUDY OF THE STRUCTURAL AND SUPERCONDUCTING PROPERTIES OF YBACUO FILMS PRODUCED BY LASER ABLATION METHOD	305
<i>Ye Khuanbay, K M Makhanov, D B Abzhanova, G B Turebaeva, N S Smakova</i>	
EFFECT OF ELECTRIC PULSE PROCESSING ON PHYSICAL AND CHEMICAL PROPERTIES OF INORGANIC MATERIALS	310
<i>S E Sakipova, B R Nussupbekov, D Ospanova, A Khassenov, Sh E Sakipova</i>	
THE CALCULATION METHOD OF INTERACTION BETWEEN METAL ATOMS UNDER INFLUENCE OF THE RADIATION	316
<i>S N Yanin</i>	
STRUCTURAL FEATURES OF THE HYDRIDE PHASE FORMATION IN NANOSTRUCTURED A-TITANIUM	321
<i>Yu R Kolobov, V I Torganchuk, V N Fokin, B P Tarasov</i>	
COMPUTER SIMULATION OF PROCESSES OF RADIATION-THERMAL HEATING	327
<i>V A Zhuravlev, V A Meshcheriakov, V I Suslyayev</i>	
INTERCONNECTION BETWEEN PARAMETERS OF ROCK SAMPLES ELECTROMAGNETIC SIGNALS AND CONTENT OF MAGNETITE IN THE SAMPLES	332
<i>L V Yavorovich, A A Bepal'ko, P I Fedotov, A I Popelyayev</i>	
RESEARCH ON MODES OF PLASMA GENERATION IN LOW-PRESSURE DISCHARGE FOR THERMAL RADIATION PROCESSES	338
<i>T V Koval, I V Lopatin, Nguyen Bao Hung</i>	
STUDY OF SORPTION PROPERTIES OF ALUMINIUM OXIDES AND HYDROXIDES POWDERS OBTAINED BY ELECTRO-IMPULSE METHODS	344
<i>S P Zhuravkov, G L Lobanova, D V Martemiyarov, L V Nadeina</i>	
THE ENERGY DEPENDENCE OF REFRACTORY METALS AND ALLOYS RADIATION DAMAGEABILITY	349
<i>K M Mukashev, F F Umarov</i>	
USE OF SIMULATION METHODS OF WAVE PROCESSES FOR NON-DESTRUCTIVE TESTING OF CONCRETE PRODUCTS OF DIFFERENT GEOMETRICAL SIZE	357
<i>T V Fursa, B A Lyukshin, G E Utsyn, D D Dann, M V Kuimova</i>	
FEATURES OF THE AMPLITUDE-FREQUENCY CHARACTERISTICS OF ELECTROMAGNETIC EMISSION DURING UNIAXIAL COMPRESSION OF DIELECTRIC COMPOSITES	361
<i>V P Surzhikov, N N Khorsov</i>	
CHANGING THE PROPERTIES OF METALS UNDER CONDITIONS OF EXPOSURE TO IONIZING RADIATION	365
<i>S N Yanin</i>	
THE SEPARATION PROCESS OF METHANE-BUTANE FRACTION FROM NATURAL GAS BEFORE TRANSPORT	371
<i>O V Galtseva, S V Bordunov</i>	

MAGNETIC IRON OXIDES IN THE CEMENTATION TECHNOLOGY OF THE BORON-CONTAINING RADIOACTIVE WASTE	376
<i>M A Fedotov, O A Gorbunova, O V Fedorova, G E Folmanis, L V Kovalenko</i>	
DATA ON GRANULOMETRIC COMPOSITION OF CALCIUM PHOSPHATE OBTAINED BY DISPERSION METHOD	382
<i>O A Golovanova, E S Chikanova, A V Malyshev, T S Mylnikova</i>	
EFFECT OF CATIONS (Mg^{2+}, Zn^{2+}, CD^{2+}) ON FORMATION OF THE MINERAL PHASE IN $Ca(NO_3)_2$-$Mg(NO_3)_2$-Na_2HPO_4-H_2O SYSTEM	388
<i>O A Golovanova, R M Shlyapov, Sh K Amerkhanova, A S Uali, V A Vlasov</i>	
PHYSICS AND CHEMISTRY OF PRODUCING SILICON-HYDROXYLAPATITE-TITANIUM COMPOSITE MATERIALS	394
<i>O A Golovanova, A V Zayts, T V Panova, T S Frangulyan</i>	
PULSED NON-SELF-SUSTAINED GLOW DISCHARGE WITH A LARGE-AREA HOLLOW CATHODE FOR NITRIDING OF IRON-BASED ALLOYS	402
<i>V V Denisov, Yu H Akhmadeev, I V Lopatin, P M Schanin, S S Kovalsky, N N Koval, V V Yakovlev</i>	
INVESTIGATION OF MASSIVE CATALYST BASED ON MOLYBDENUM DISULPHIDE BY SIMULTANEOUS THERMAL ANALYSIS AND MASS SPECTROMETRY METHODS	408
<i>A S Akimov, M A Morosov, T A Fedushchak, M A Uyimin, A V Vosmerikov, S P Zhuravkov, E N Lysenko</i>	
THERMAL SHOCK REMOVAL OF DEFECTIVE GLASS-ENAMEL COATING FROM CAST-IRON PRODUCTS	414
<i>A D Aleutdinov, S A Ghyngazov, T S Mylnikova, P A Luchnikov</i>	
STUDY OF TYPES OF DEFECTS IN WOOD CHIPBOARD PRODUCTION	419
<i>Elena Vasendina, Inna Plotnikova, Ludmila Red'ko, Natalia Zyablova</i>	
IGNITION OF WOOD SUBJECTED TO THE DECREASING RADIANT ENERGY FLUX	426
<i>V T Kuznetsov, A I Filkov, Yu N Isaev, V O Guk</i>	
CHARACTERIZATION OF COPPER NANOPOWDERS AFTER NATURAL AGING	431
<i>Yu A Amelkovich, O B Nazarenko, A I Sechin, P M Visakh</i>	
ULTRASONIC INSPECTION OF SPENT NUCLEAR FUEL CASKS	437
<i>I Bolotina, A Bulavinov, A Lider, D Sednev, A Shtaynbreher</i>	
OPTICAL LASER DIFFRACTION TRANSDUCER FOR MEASURING SINGLE-WIRE ELECTRIC CABLE ECCENTRICITY	444
<i>M E Fedorov</i>	
STUDY OF ADSORPTION PROCESS OF IRON COLLOID SUBSTANCES ON ACTIVATED CARBON BY ULTRASOUND	454
<i>K I Machekhina, L N Shiyani, T A Yurmazova, D A Voyno</i>	
INVESTIGATION OF THE MECHANISM OF MICROPLASMA IMPACT ON IRON AND ALUMINUM LOAD USING SOLUTIONS OF ORGANIC SUBSTANCES	460
<i>G L Lobanova, T A Yurmazova, L N Shiyani, D A Voyno</i>	
INFLUENCE OF THE TYPE OF ELECTRIC DISCHARGE ON THE PROPERTIES OF THE PRODUCED ALUMINIUM NANOPARTICLES	467
<i>L N Shiyani, N A Yavorovskii, A V Pustovalov, E N Gryaznova</i>	
THERMALLY ACTIVATED MOTION OF DISLOCATIONS IN IRRADIATED KBR CRYSTALS	472
<i>M V Korovkin, Yu I Galanov</i>	
SYNTHESIS OF POLYMER ION-EXCHANGE HYDROGELS UNDER γ - IRRADIATION ^{60}Co	477
<i>V M Le, V D Zhevnyak, V Kh Pak, V A Ananov, U V Borodin</i>	
METHOD OF CASE HARDENING DEPTH TESTING BY USING MULTIFUNCTIONAL ULTRASONIC TESTING INSTRUMENT	483
<i>Y A Salchak, D A Sednev, M Kroening, I B Ardashkin</i>	
EFFECT OF ION-PLASMA TREATMENT ON OXIDATION-REDUCTION PROCESSES IN LITHIUM-TITANIUM-ZINC FERRITES	491
<i>A P Surzhikov, E N Lysenko, S A Gyngazov, T S Frangulyan, S A Lamonova</i>	
ABOUT ACCURACY OF THE DISCRIMINATION PARAMETER ESTIMATION FOR THE DUAL HIGH-ENERGY METHOD	496
<i>S P Osipov, S V Chakhlov, O S Osipov, A M Shtein, D V Strugovtsev</i>	
DETERMINATION OF SENSITIVITY FOR IN-PROCESS CONTROL OF CABLE PRODUCT INSULATION	509
<i>V V Redko, N S Starikova, L A Redko, G V Vavilova</i>	
EVALUATION OF EQUIVALENT DEFECT HEAT GENERATION IN CARBON EPOXY COMPOSITE UNDER POWERFUL ULTRASONIC STIMULATION BY USING INFRARED THERMOGRAPHY	517
<i>D A Derusova, V P Vavilov, S S Pawar</i>	

WASTE MANAGEMENT THROUGH LIFE CYCLE ASSESSMENT OF PRODUCTS	524
<i>Yu V Borodin, T E Alif'erova, A Ncube</i>	
CONCEPTION OF LOW-RISE EARTHQUAKE-RESISTANT ENERGY-EFFICIENT BUILDINGS	530
<i>Y V Shefer, B S Ordobaev, S V Romanenko, O A Antonevich</i>	
EFFECT OF PARTICLE SIZE ON THE DIFFUSE REFLECTION COEFFICIENT OF TITANIUM DIOXIDE POWDER	536
<i>V A Vlasov, A L Astafyev, A N Zarubin</i>	
APPLICATION OF SECONDARY ION MASS SPECTROMETER FOR MEASURING THE DIFFUSION PROFILES IN ALKALI-HALIDE CRYSTALS	540
<i>A V Chernyavskii, M S Kaz</i>	
EFFECT OF ION IRRADIATION ON TRIBOLOGICAL PROPERTIES OF COMPOSITE COATINGS	544
<i>E S Platonova, S A Guchenko, A Sh Syzdykova, V Ch Laurinas, V M Yurov, E N Lysenko, T S Mylnikova</i>	
MULTIPHASE COMPOSITE COATINGS: STRUCTURE AND PROPERTIES	548
<i>V M Yurov, S A Guchenko, E S Platonova, A Sh Syzdykova, E N Lysenko</i>	
INVESTIGATION OF ANTIOXIDANT PROPERTIES OF METAL ASCORBATES AND THEIR MIXTURES BY VOLTAMMETRY	553
<i>A N Vtorushina, E D Nikonova</i>	
PRECLINICAL ANIMAL ACUTE TOXICITY STUDIES OF NEW DEVELOPED MRI CONTRAST AGENT BASED ON GADOLINIUM	559
<i>I F Nam, V V Zhuk</i>	
SIMULTANEOUS SPECTROPHOTOMETRIC DETERMINATION OF CHROMIUM (VI) AND IRON (III) IN ALLOYS	564
<i>E V Larionova, K A Bulygina</i>	
DETERMINATION OF ENAMEL INSULATION CORONA RESISTANCE BY HIGH-FREQUENCY MODULATED PULSES	571
<i>A P Leonov, V V Red'ko, L A Red'ko, E Y Soldatenko</i>	
THERMAL PROPERTIES OF EPOXY COMPOSITES FILLED WITH BORIC ACID	578
<i>P M Visakh, O B Nazarenko, Yu A Amelkovich, T V Melnikova</i>	
EFFECT OF THE ANISOTROPY OF MONOCRYSTALLINE SILICON MECHANICAL PROPERTIES ON THE DYNAMIC CHARACTERISTICS OF A MICROMECHANICAL GYROSCOPE	584
<i>T G Nesterenko, S E Vtorushin, E S Barbin, A N Koleda</i>	
PV EFFECTIVENESS UNDER NATURAL CONDITIONS	592
<i>A Yurchenko, V Syriamkin, A Okhorzina, N Kurkan</i>	
POWER SUPPLY OF REMOTE AND ALMOST INACCESSIBLE SETTLEMENTS	598
<i>O A Surzhikova</i>	
NEM AND MFEM SIMULATION OF INTERACTION BETWEEN TIME-DEPENDENT WAVES AND OBSTACLES	602
<i>V A Perminov, T S Rein, S N Karabtcev</i>	
COMPARING THERMAL STIMULATION TECHNIQUES IN INFRARED THERMOGRAPHIC INSPECTION OF CORROSION IN STEEL	609
<i>A O Chulkov, V P Vavilov</i>	
APPLICATION OF RECONFIGURABLE COMPUTING ENVIRONMENTS FOR IMAGE PROCESSING IN X-RAY TOMOGRAPHY OF MATERIALS	618
<i>D V Shashev, S V Shidlovskiy, V I Syriamkin, A V Yurchenko</i>	
DYNAMIC SIMULATION OF ELECTRONS IN THE INJECTOR OF SEALED VACUUM CHAMBER OF INDUSTRIAL BETATRONS	624
<i>A P Shestak, E L Malikov, K V Sukharnikov, M M Rychkov, M V Kuimova</i>	
THE INCREASE OF ULTRASOUND MEASUREMENTS ACCURACY WITH THE USE OF TWO-FREQUENCY SOUNDING	629
<i>Yu V Shulgina, A I Soldatov, Ya V Rozanova, A A Soldatov, E M Shulgin</i>	
INVESTIGATION OF HEATING RATE EFFECT ON SOLID-PHASE INTERACTION IN Li_2CO_3 - Fe_2O_3 REACTION MIXTURE	635
<i>E N Lysenko, E V Nikolaev, E A Vasendina</i>	
SPECTRUM MONITORING OF ELECTROMAGNETIC SIGNALS FROM ROCKS TO CONTROL GEODYNAMIC PROCESSES UNDER WORKING MINE CONDITIONS	639
<i>A A Bombizov, A A Bepalko</i>	
NEURAL GEOLOGICAL-GENETIC AND RADIOGEOCHEMICAL FORECAST MODEL OF OIL-BEARING HELDS	648
<i>S V Gorbachev, I K Kurkan</i>	

EVENT-DRIVEN MANAGEMENT ALGORITHM OF AN ENGINEERING DOCUMENTS CIRCULATION SYSTEM	655
<i>V Kuzenkov, A Zebzeev, E Gromakov</i>	
FUZZY CONTROL OF THE PRODUCTION ENVIRONMENT PROCESS PARAMETERS	660
<i>V N Izvekov</i>	
CARRYING OUT THERMODYNAMIC CALCULATIONS AND DEFINITION OF THE MAIN REACTIONS OF DECOMPOSITION OF VAPOURS OF ETHYL ALCOHOL.....	666
<i>A I Sechin, O S Kyrmakova, T A Ivanova</i>	
TO STUDY THE INFLUENCE OF SNOW COVER ON THE POWER GENERATED BY PHOTOVOLTAIC MODULES	671
<i>R V Meyta, F V Savrasov</i>	
THE PIPELINE OIL PUMPING ENGINEERING BASED ON THE PLANT WIDE CONTROL TECHNOLOGY	676
<i>D P Starikov, E A Rybakov, E I Gromakov</i>	
POWER SUPPLY OF AUTONOMOUS SYSTEMS USING SOLAR MODULES.....	682
<i>A V Yurchenko, L G Zotov, A D Mekhtiev, V V Yugai, G G Tatkeeva</i>	
STUDYING MATHEMATICAL MODEL OF MINE AND QUARRY PNEUMATIC LIFTING EQUIPMENT IN "SKIP - GUIDANCE DEVICES" SYSTEMS.....	692
<i>M V Kitaeva, Yu A Nikolaev, A V Taranov, A D Mehtiev</i>	
USING OF SCIENCE TECHNOLOGIES FOR MINING MACHINERY CONSTRUCTIONS' STRENGTH IMPROVEMENT	703
<i>E V Yurchenko, A D Mehtiev, V V Yugai, F N Bulatbayev</i>	
IMPROVEMENT OF OPTICAL SYSTEMS FOR DETECTION OF SMOKES.....	710
<i>V F Panin, A G Dashkovskii</i>	
RADIAL DISTRIBUTION OF A SINGLE-PASS AMPLIFIED RADIATION IN THE ACTIVE ELEMENTS OF CUBR LASERS	718
<i>F A Gubarev, M S Klenovskii, Lin Li</i>	
MEASUREMENT ERROR REDUCING IN THE ULTRASOUND TIME-PULSE SYSTEMS	725
<i>A I Soldatov, O A Kozhemyak, A A Soldatov, Yu V Shulgina</i>	
RESEARCH OF THE PHOTOVOLTAIC PROPERTIES OF ANODIZED FILMS OF SN.....	735
<i>D A Afanasyev, N Kh Ibrayev, G S Omarova, Zh K Smagulov</i>	
SIMULATION OF HEAT CONDUCTIVITY AND CHARGING PROCESSES IN POLAR DIELECTRICS INDUCED BY ELECTRON BEAM EXPOSURE	742
<i>A Maslovskaya, A Pavelchuk</i>	
HYDROSTATIC PRESSURE EFFECTS ON STRUCTURAL AND ELECTRONIC PROPERTIES OF PENTACENE FROM FIRST PRINCIPLES CALCULATIONS.....	748
<i>I A Fedorov, E S Rubtsova, N S Khaydukova, Y N Zhuravlev</i>	
SYNTHESIS AND INVESTIGATION OF THE GEOMETRIC CHARACTERISTICS OF TITANIUM DIOXIDE NANOTUBES	754
<i>T M Serikov, N Kh Ibrayev, V K Gladkova</i>	
SYNTHESIS AND STAGING OF THE PHASE FORMATION FOR STRONTIUM FERRITES IN THERMAL AND RADIATION-THERMAL REACTIONS.....	760
<i>U V Ancharova, M A Mikhailenko, B P Tolochko, N Z Lyakhov, M V Korobeinikov, A A Bryazgin, V V Bezuglov, E A Shtarklev, A Yu Vlasov, Z S Vinokurov</i>	
RADIATION-THERMAL PARAFFIN CRACKING	765
<i>M A Mikhailenko, U V Ancharova, B P Tolochko, M V Korobeinikov, A A Bryazgin, V V Bezuglov, E A Shtarklev, A Yu Vlasov, L M Pokrovsky, K G Korolev</i>	
RADIATION-THERMAL TREATMENT IN ORE DRESSING.....	771
<i>M V Korobeinikov, A A Bryazgin, V V Bezuglov, E A Shtarklev, A Yu Vlasov, S A Kondratyev, V I Rostovtsev</i>	
STUDY LASING PROPERTIES OF RHODAMINE 4C DYE IN THE PORES OF ANODIZED ALUMINUM.....	777
<i>N Kh Ibrayev, A K Zeinidenov, A K Aimukhanov, Zh Zh Ahatova</i>	
BREAKS OF DOSE DEPENDENCE OF TRANSIENT CREEP AS RESULT OF COMPETING INFLUENCE OF DEFECTS' FLUXES ON CLIMB OF DISLOCATIONS	782
<i>P Selyshchev</i>	
Author Index	