

# **International Conference on Modern Trends in Manufacturing Technologies and Equipment (ICMTMTE 2017)**

MATEC Web of Conferences Volume 129 (2017)

Sevastopol, Russia  
11 - 15 September 2017

Part 1 of 2

## **Editors:**

**Sergey Bratan  
Sergey Borbatyuk**

**Sergey Leonov  
Stanislav Roshchupkin**

ISBN: 978-1-5108-5189-4

**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.**

This work is licensed under a Creative Commons Attribution license:  
<http://creativecommons.org/licenses/by/2.0/>

**You are free to:**

**Share** – copy and redistribute the material in any medium or format.

**Adapt** – remix, transform, and build upon the material for any purpose, even commercial.

The licensor cannot revoke these freedoms as long as you follow the license terms.

**Under the following terms:**

You must give appropriate credit, provide a link to the license, and indicate if changes were made.

You may do so in any reasonable manner, but not in any way that suggests the licensor endorses you or your use. The copyright is retained by the corresponding authors.

Printed by Curran Associates, Inc. (2017)

For additional information, please contact EDP Sciences – Web of Conferences  
at the address below.

EDP Sciences – Web of Conferences  
17, Avenue du Hoggar  
Parc d'Activité de Courtabœuf  
BP 112  
F-91944 Les Ulis Cedex A  
France

Phone: +33 (0) 1 69 18 75 75

Fax: +33 (0) 1 69 28 84 91

[contact-edps@webofconferences.org](mailto:contact-edps@webofconferences.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: 845-758-2633  
Email: [curran@proceedings.com](mailto:curran@proceedings.com)  
Web: [www.proceedings.com](http://www.proceedings.com)

# TABLE OF CONTENTS

## PART 1

<b>THE COMBINED FINISHING OF GEOMETRICALLY-COMPLEX PARTS</b> .....	1
<i>Smolentsev Vladislav, Kirillov Oleg, Kotukov Vasily</i>	
<b>ADHESIVE WEAR MECHANISM UNDER COMBINED ELECTRIC DIAMOND GRINDING</b> .....	5
<i>Popov Vyacheslav, Arkhipov Pavel, Rychkov Daniel</i>	
<b>DEFECTS IN DIAMONDS AS THE BASIC ADHESION GRINDING</b> .....	10
<i>Popov Vyacheslav, Rychkov Daniel, Arkhipov Pavel</i>	
<b>PROVIDING DISMOUNTABLE RIVET BONDED JOINTS THROUGH THE USE OF HOT-MELT ADHESIVES</b> .....	15
<i>Baurova Natalia, Anoprienko Alexander, Romanova Yulia</i>	
<b>INTENSIFICATION OF GRINDING TECHNOLOGY AND METHODS FOR STUDYING THE STRUCTURE OF FIBROUS MATERIALS IN THE PROCESS OF ITS PRODUCTION</b> .....	20
<i>Saetshin Aidar, Valishina Zimfira, Matuhin Evgenie, Kostochko Anatoliy</i>	
<b>SELECTION OF DIRECT DRIVES FOR TOOL AND WORKPIECE ROTATION FOR GEAR-HOBGING MACHINES OF NEW GENERATION</b> .....	24
<i>Novikov Vladimir, Isaev Alexey, Bushuev Viktor</i>	
<b>MODELING OF INDUCTION HEATING EQUIPMENT FOR THE VULCANIZATION PROCESS</b> .....	29
<i>Karpushkin Sergey, Glebov Aleksey, Karpov Sergey</i>	
<b>DESIGN OPTIMIZATION OF HEATING PLATES FOR HYDRAULIC PRESSES</b> .....	34
<i>Malygin Evgeniy, Krasnyanskiy Mikhail, Mokrozub Vladimir</i>	
<b>AN INFORMATION MODEL OF A HYDRAULIC PRESS AND ITS REPRESENTATION IN THE AUTOMATED SYSTEM</b> .....	39
<i>Malygin Evgeny, Mokrozub Vladimir, Nemtinov Vladimir</i>	
<b>THE PERFECTION OF THE CONSTRUCTION OF A COMBINED CUTTING TOOL ON THE BASIS OF THE RESULTS OF MATHEMATICAL MODELLING OF WORKING CUTTING PROCESSES IN RECURDYN</b> .....	43
<i>Poddubny Vladimir, Kryazhev Yuri, Gorin Eugene</i>	
<b>THE ULTRASONIC GRINDING PROCESS TEMPERATURE FIELD STUDY</b> .....	47
<i>Unyanin Alexander, Khusainov Albert</i>	
<b>AUTOMATION OF THE EARLY STAGES OF PLATING LINES DESIGN</b> .....	52
<i>Nemtinov Vladimir, Bolshakov Nikita, Nemtinova Yulia</i>	
<b>THE CAPABILITY OF PULSED LASER RADIATION FOR CUTTING BAND SAWS HARDENING</b> .....	56
<i>Marinin Evgeny, Sergeev Denis, Marinina Nadezhda</i>	
<b>MODELLING OF DESTRUCTIVE ABILITY OF WATER-ICE-JET WHILE MACHINE PROCESSING OF MACHINE ELEMENTS</b> .....	60
<i>Burnashov Mikhail, Prezhbilov Alexander, Stepanova Elena</i>	
<b>RESEARCH THE QUALITY OF THE CAPROLON TURNING WITH CERAMIC CUTTING TOOLS</b> .....	64
<i>Erenkov Oleg, Ivakhnenko Alexander, Protasev Victor</i>	
<b>ELECTROEROSION FORMATION AND TECHNOLOGY OF CAST IRON COATINGS ON ALUMINUM ALLOYS</b> .....	69
<i>Smolentsev Vladislav P., Fedonin Oleg N., Smolentsev Eugene V.</i>	
<b>ON THE ESTIMATION OF FEASIBILITY OF ENGINEERING SERVICES USE BY MACHINE-BUILDING ENTERPRISES</b> .....	74
<i>Mavlioutov Ramil, Butenko Ekaterina, Menyailova Regina</i>	
<b>PROSPECTS FOR THE DEVELOPMENT OF THE THEORY OF DESIGNING OPTIMAL CYCLES OF MACHINING IN A MULTIDIMENSIONAL SPACE OF CONTROL PARAMETERS</b> .....	79
<i>Akintseva Aleksandra, Pereverzev Pavel</i>	
<b>COMPLEX OPTIMIZATION OF PARAMETERS FOR CONTROLLING THE CYCLE OF INTERNAL GRINDING BY THE METHOD OF DYNAMIC PROGRAMMING</b> .....	85
<i>Akintseva Aleksandra, Pereverzev Pavel</i>	
<b>INFLUENCE OF TECHNOLOGICAL FACTORS OF BLADE PROCESSING ON THE FORMING OF THE DEFECT LAYER</b> .....	89
<i>Tchigirinsky Julius L., Quang Trong Ngo</i>	

<b>INFLUENCE OF VALUE OF THE CRITERION OF BLUNTING ON THE SELECTION OF THE BRAND OF HARD ALLOY AND OPTIMUM CUTTING SPEED WHEN TURNING AUSTENITIC STEEL</b> .....	93
<i>Lipatov Andrew A., Tchigirinsky Julius L.</i>	
<b>PROBLEMS OF MODERNIZATION AND TECHNICAL RE-EQUIPMENT OF RUSSIAN MACHINE-BUILDING ENTERPRISES</b> .....	97
<i>Antonyan Olga, Karpushko Elena, Solovyeva Anna</i>	
<b>RESEARCH OF VIBRATION RESISTANCE OF NON-RIGID SHAFTS TURNING WITH VARIOUS TECHNOLOGICAL SET-UPS</b> .....	102
<i>Vasilevykh Sergey L., Shelihov Evgeniy S.</i>	
<b>METHOD OF INCREASING DURABILITY OF THIN-WALLED STRUCTURAL ELEMENTS</b> .....	107
<i>Mironov Vladimir, Lukashuk Olga, Ogorelkov Dmitriy</i>	
<b>NEURAL NETWORK MANAGEMENT OF TECHNOLOGICAL SYSTEMS AT THE FINISH OPERATIONS</b> .....	111
<i>Ovsyanikova Irina, Tarapanov Aleksandr</i>	
<b>SCANNING THE WELDED SEAMS OF TITANIUM ALLOYS BY USING SUBMINIATURE EDDY CURRENT TRANSDUCERS</b> .....	116
<i>Dmitriev Sergey, Malikov Dmitriev, Sagalakov Anatoly</i>	
<b>QUANTITATIVE EVALUATION OF THE EFFECTIVENESS OF BEST AVAILABLE TECHNOLOGIES OF FORM-SHAPING</b> .....	120
<i>Shvartsburg Leonid, Butrimova Elena, Yagolnitsa Olga</i>	
<b>ENGINEERING SUPPORT OF PRODUCTION OF HIGH-PRECISION COMPONENT ASSEMBLIES</b> .....	124
<i>Nazaryev Alexandr, Bochkarev Petr</i>	
<b>PROBLEMS OF INEFFECTIVE MODERNIZATION AT INDUSTRIAL ENTERPRISES AND WAYS OF THEIR SOLUTION</b> .....	129
<i>Kiselev Dmitry, Popov Yuri, Kanygina Olga</i>	
<b>DEVELOPMENT OF THE MECHANICAL ENGINEERING COMPLEX ON THE BASIS OF THE IMPROVEMENT OF LARGE AND SMALL BUSINESSES RELATIONS</b> .....	134
<i>Sokolova Svetlana, Belyaev Mikhail, Batmanova Victoria</i>	
<b>NONLINEAR PHENOMENA IN A HIGH-POWER HEATING UNIT WITH PULSE MODULATED CONTROL</b> .....	139
<i>Gol'tsov Yuriy Alexandrovich, Kizhuk Alexander Stepanovich, Rubanov Vasilii Grigorievich</i>	
<b>MONITORING OF THE STRESS-STRAIN STATE OF THE SURFACE LAYER OF A PART IN THE CUTTING PROCESS USING VIBROACOUSTIC DIAGNOSTICS</b> .....	143
<i>Allenov Dmitry, Kozochkin Mikhail, Andryushchenko Irina</i>	
<b>TECHNOLOGICAL SYSTEM SELF-TUNING WHEN MILLING</b> .....	147
<i>Kozlov Aleksandr, Kiryuschenko Evgenij, Kirichek Andrej</i>	
<b>EFFECT OF CHANGING POLARITY OF GRAPHITE TOOL/ HADFIELD STEEL WORKPIECE COUPLE ON MACHINING PERFORMANCES IN DIE SINKING EDM</b> .....	151
<i>Özerkan Haci Bekir</i>	
<b>INCREASING THE CAPABILITIES OF MACHINING ATTACHMENTS BY MEANS OF FERROMAGNETIC LIQUIDS</b> .....	155
<i>Boldyrev Alexander Alexandrovich, Boldyrev Alexander Ivanovich, Fedonin Oleg Nikolaevich</i>	
<b>MODELLING OF CUTTING BLOCK CUT SURFACE AT FACETED SURFACES MACHINING USING PLANETARY GEAR SET</b> .....	158
<i>Kuts Vadim, Razumov Mikhail, Kalutskikh Nikolay</i>	
<b>OPTICAL DIAGNOSTICS OF SELECTIVE LASER MELTING AND MONITORING OF SINGLE-TRACK FORMATION</b> .....	163
<i>Gusarov Andrey, Kotoban Dmitriy, Zhirnov Ivan</i>	
<b>INCREASING OF THE CARBIDE CUTTING TOOL LIFE BY DEVELOPING THE MULTILAYER COATINGS</b> .....	169
<i>Tabakov Vladimir, Chikhranov Aleksey, Sizov Sergei</i>	
<b>DESIGN OF THE TOOL FOR PERIODIC NOT EVOLVENT PROFILES</b> .....	173
<i>Anisimov Roman, Tarapanov Alexander</i>	
<b>MODERN PROBLEMS OF ENERGY EFFICIENCY PROGRAMS IMPLEMENTATION AT THE ENTERPRISES OF MECHANICAL ENGINEERING</b> .....	178
<i>Borisova Natalia, Borisov Alexander, Dushko Oleg</i>	
<b>CALCULATION METHOD AND SIMULATION OF WORK OF THE RING ELASTIC COMPENSATOR FOR SHEET-FORMING</b> .....	184
<i>Kukhar Volodymyr, Balalayeva Elena, Nesterov Oleg</i>	

<b>THE RELATIONSHIP OF CUTTING FORCE WITH HOLE QUALITY IN DRILLING PROCESS OF AISI H13 STEEL.....</b>	188
<i>Tekait Ismail, Demir Halil, Seker Ulvi</i>	
<b>DETERMINATION OF THE PROFILE OF THE WORM-TYPE TOOL .....</b>	192
<i>Golovko Aleksandr</i>	
<b>METHOD FOR MEASURING THERMO-EMF OF A "TOOL-WORKPIECE" NATURAL THERMOCOUPLE IN CHIP FORMING MACHINING .....</b>	196
<i>Sergeev Alexander S., Tikhonova Zhanna S., Uvarova Tatiana V.</i>	
<b>INFLUENCE OF THE SURFACE LAYER CHARACTERISTICS ON THE REGULARITIES OF THE CUTTING PROCESS.....</b>	201
<i>Krainev Dmitriy V., Polyanchikova Maria Yu., Bondarev Alexander A.</i>	
<b>METHODOLOGY OF MULTIAXIAL MACHINES FORMATS VOLUMETRIC ACCURACY COMPARATIVE EVALUATION.....</b>	204
<i>Lukina Svetlana, Manaenkov Igor</i>	
<b>PHASE-CHRONOMETRIC MEASURING SYSTEMS FOR THE PROVISION OF TECHNOLOGICAL PROCESSES AND DIAGNOSTICS OF THE PRODUCTION OF ELECTROMECHANICAL ENGINEERING SYSTEMS.....</b>	208
<i>Tumakova Ekaterina, Komshin Aleksandr</i>	
<b>THE USE OF MEASURING PHASE-CHRONOMETRIC SYSTEMS IN THE PRODUCTION OF CYCLIC AGGREGATES OF AIRCRAFT .....</b>	212
<i>Metelkina Ekaterina, Komshin Aleksandr</i>	
<b>PHASECHRONOMETRIC MEASURING TECHNOLOGIES APPLICATION FOR TURNING TOOL WEAR MONITORING .....</b>	216
<i>Syritsky Anthony</i>	
<b>THE ADDITIVE TECHNOLOGY FOR OBTAINING THERMAL STORAGEES BASED ON NANOMODIFIED MATERIALS.....</b>	219
<i>Shchegolkov Alexander, Borovskikh Pavel, Shirshova Larisa</i>	
<b>TECHNOLOGICAL SUPPORTING PERFORMANCE OF MACHINES AND MECHANISMS.....</b>	223
<i>Burlachenko Oleg, Serdobintsev Yuri, Lyashenko Alexander</i>	
<b>EQUIPMENT AND TECHNOLOGIES OF AIR-PLASMA SPRAYING OF FUNCTIONAL COATINGS.....</b>	229
<i>Kuzmin Viktor, Gulyaev Igor, Sergachev Dmitry, Vaschenko Sergey, Kornienko Elena, Tokarev Alexander</i>	
<b>MANUFACTURING OF THIN-WALLED PARTS FOR MACHINERY BY SELECTIVE LASER MELTING.....</b>	234
<i>Bobyry Vitaliy, Deev Artem, Zhukov Anton, Kuznetsov Pavel</i>	
<b>MATHEMATICAL MODELS FOR ESTIMATING THE DEGREE OF INFLUENCE OF MAJOR FACTORS ON PERFORMANCE AND ACCURACY OF COORDINATE MEASURING MACHINES .....</b>	240
<i>Rezchikov Alexander F., Kochetkov Andrei V., Zakharov Oleg V.</i>	
<b>STUDY OF THE IMPACT OF TREATMENT MODES ON HARDNESS, DEFORMABILITY AND MICROSTRUCTURE OF VT6 (TI-6AL-4V) AND VV751P (NI-15CO-10CR) ALLOY SAMPLES AFTER SELECTIVE LASER SINTERING.....</b>	244
<i>Galkina Natalia V., Nosova Ekaterina A., Balaykin Andrey V.</i>	
<b>DIRECT FORMATION OF SURFACE LAYER'S QUALITY PARAMETERS DURING COMBINED TREATMENT OF TWO-PHASE STAINLESS STEEL BLANKS .....</b>	247
<i>Kiselev Eugeny, Blagovskiy Oleg</i>	
<b>THE HIGH-PERFORMANCE MACHINING OF THE CURVED SURFACES WITH THE PROGRESSIVE CUTTING GEOMETRY OF THE END MILL .....</b>	251
<i>Khramov Alexander, Kiselev Evgeniy, Leksin Evgeniy</i>	
<b>ANALYSIS OF MECHANISM OF CARBIDE TOOL WEAR AND CONTROL BY WEAR PROCESS.....</b>	255
<i>Pham Hoang Trung, Tchigirinsky Julius. L.</i>	
<b>POWER CHARACTERISTICS OF THE METAL COMPOUNDS FORMATION PROCESS DURING THE FRICTION STIR WELDING .....</b>	259
<i>Rzaev Radmir, Chularis Alexander, Semyanova Larisa</i>	
<b>EXPERIMENTAL IMPLEMENTATION OF DIRECT LASER ALLOYING .....</b>	263
<i>Sotov Anton Vladimirovich, Agapovichev Anton Vasilevich, Smelov Vitaly Genadievich</i>	
<b>ANALYTICAL STUDY OF MODULAR CUTTING TOOLS DYNAMIC PROPERTIES.....</b>	267
<i>Lukina Svetlana, Krutyakova Margarita</i>	
<b>FUNCTIONAL MODELLING FOR THE AUTOMATED CONTROL SYSTEM OF A THREADED JOINTS, SUCH AS THREADED PLUG GAUGES.....</b>	271
<i>Shutikov Mihail, Solomencev Jurij, Feofanov Alexandr, Grishina Tat'jana</i>	

<b>SOLUTION OF THE PROBLEM OF NEGATIVE VALUE OF THE LINEAR TECHNOLOGICAL SIZE</b> .....	274
<i>Masyagin Vasilii, Bazhenov Ruslan, Muholzoev Andrei</i>	
<b>AN ALGORITHM FOR CONTROLLING OF CUTTING SPEED BASED ON SOFT CALCULATIONS</b> .....	278
<i>Bobyry Maxim, Luneva Mariya, Yakushev Alexsey</i>	
<b>THE STUDY OF THE PROCESS OF CHIP SEGMENTATION IN CASE OF EDGE CUTTING MACHINING OF TITANIUM ALLOY</b> .....	283
<i>Ponyatov Dmitry Sergeevich, Alekseev Vyacheslav Petrovich, Khaimovich Alexandr Isaakovich</i>	
<b>ANALYSIS OF THE STRUCTURE OF RANDOM PACKINGS OF POWDER PARTICLES IN LASER ADDITIVE TECHNOLOGIES</b> .....	288
<i>Kovalev Oleg, Gusarov Andrey, Belyaev Vitaly</i>	
<b>THE DESIGN OF LIGHTWEIGHT GAS TURBINE ENGINE PARTS USING TOPOLOGY OPTIMIZATION</b> .....	294
<i>Dubrovskaya Aleksandra, Dongauzer Konstantin, Faskhutdinov Rustam</i>	
<b>IMPROVEMENT OF TRIBOTECHNOLOGICAL PROPERTIES OF OIL-BASED CUTTING FLUIDS BY ADDING DRY LUBRICANTS</b> .....	298
<i>Abdulgazis Dilyaver, Umerov Ervin, Abdulgazis Umer</i>	
<b>ENSURING STABLE QUALITY OF GROUND PARTS BY MONITORING THE PROCESS SYSTEM PARAMETERS</b> .....	303
<i>Yagyaev Elmar, Shron Boris</i>	
<b>ROLE OF LASER RADIATION IN ACTIVATING ANODIC DISSOLUTION UNDER ELECTROCHEMICAL MACHINING OF METALS AND ALLOYS</b> .....	307
<i>Rakhimyanov Kharis, Gaar Nadezhda, Loktionov Aleksandr</i>	
<b>TWIN-CUTTER FORM TURNING OF COMMUTATOR RINGS USING CUTTERS' PROGRESSIVE MOTION PIEZOELECTRIC ENGINES</b> .....	311
<i>Vozzhov Andrey, Pashkov Eugene, Golovin Vasiliy, Florya Pavel</i>	
<b>NUMERICAL STUDIES TO DETERMINE SPATIAL DEVIATIONS OF A WORKPIECE THAT OCCUR WHEN MACHINING ON CNC MACHINES</b> .....	314
<i>Nekrasov Roman Yu., Solovyov Igor V., Starikov Alexander I., Tempel Yulia A., Tempel Olga A.</i>	
<b>INNOVATIVE MODEL OF BUSINESS PROCESS REENGINEERING AT MACHINE BUILDING ENTERPRISES</b> .....	318
<i>Nekrasov Roman Yu., Tempel Yulia A., Tempel Olga A., Barbyshev Boris V.</i>	
<b>ROLE OF ADHESIVE INTERACTION CENTERS IN CONTROL OF CHIP FORMATION AND CUTTER WEAR</b> .....	322
<i>Kim Vladimir A., Mokritskii Boris Ya., Morozova Anna V.</i>	
<b>HIGH-TEMPERATURE THERMOMECHANICAL TREATMENT OF HOLLOW TRACK PINS OF TRACK-TYPE MACHINES</b> .....	328
<i>Zasytkin Andrei, Dement'yev Vyacheslav, Sterkhov Mikhail</i>	
<b>INFLUENCE OF RIGIDITY OF THE HARDENED PARTS ON FORMING THE SHAPE ACCURACY DURING FLAT GRINDING</b> .....	331
<i>Soler Yakov I., Van Le Nguyen, Dinh Si Mai</i>	
<b>THE TECHNOLOGICAL METHODS OF SURFACE LAYER MODIFICATION IN CONSTRUCTION MATERIALS</b> .....	336
<i>Smolentsev Vladislav, Safonov Sergey</i>	
<b>THEORETICAL-PROBABILISTIC MODEL OF THE ROTARY BELT GRINDING PROCESS</b> .....	340
<i>Bratan Sergey, Kolesov Aleksandr, Roshchupkin Stanislav, Stadnik Tatyana</i>	
<b>IDENTIFICATION OF REMOVAL PARAMETERS AT COMBINED GRINDING OF CONDUCTIVE CERAMIC MATERIALS</b> .....	346
<i>Bratan Sergey, Roshchupkin Stanislav, Kolesov Alexandr, Bogutsky Boris</i>	
<b>FORECASTING THE SURFACE ROUGHNESS OF THE WORKPIECE IN THE ROUND EXTERNAL GRINDING</b> .....	351
<i>Novoselov Yuriy, Bogutsky Vladimir, Shron Leonid, Kharchenko Alexander</i>	
<b>PARAMETRIC SYNTHESIS OF ASSEMBLY DEVICE FOR FITTING RUBBER SEALING RING INTO THE INNER GROOVE OF THE BASIC ITEM</b> .....	357
<i>Tarakhovskiy Aleksey, Sazonov Sergey, Tokarev Denis, Moroz Yuriy</i>	
<b>INVESTIGATION OF THERMAL PROCESSES IN ABRASIVE PIPE SAMPLING</b> .....	361
<i>Levchenko Elena, Pokintelitsa Nikolay</i>	
<b>IMPROVEMENT OF QUALITY OF DETAILS AT ROUND GRINDING IN THE CONDITIONS OF A FLOATING WORKSHOP</b> .....	366
<i>Bratan Sergey, Vladetskaya Ekaterina, Kharchenko Aleksander</i>	

<b>MODERN TREATMENT TECHNOLOGIES OF CARBON FIBRE FOR ENSURING THE HIGH STRENGTH CARBON FIBRE REINFORCED PLASTIC PRODUCTION .....</b>	<b>373</b>
<i>Nelyub Vladimir, Malysheva Galina</i>	
<b>DISTINCTIVE FEATURES OF THERMAL TREATMENT OF POTENTIAL TOOL STEEL 70X3G2FTR .....</b>	<b>377</b>
<i>Romashkov Evgeniy, Krylova Svetlana, Kuznetsov Artur</i>	
<b>INVESTIGATION OF THE INFLUENCE OF HOLLOW ALUMINOSILICATE MICROSPHERES ON PROPERTIES OF ELASTOMER FIRE-THERMAL PROTECTIVE COATINGS .....</b>	<b>380</b>
<i>Kablov Victor F., Novopol'tseva Oxana M., Kochetkov Vladimir G.</i>	
<b>PECULIARITIES OF HEAVY ELECTRO-MECHANICAL PLATING ON MEDIUM CARBON STEEL 30 AND 38 CHN3MA .....</b>	<b>384</b>
<i>Gorozhankina Olga V., Kopylov Yury R., Zhirkov Alexander A.</i>	
<b>DISSIPATION MECHANISMS UNDER IRREVERSIBLE DEFORMATION .....</b>	<b>389</b>
<i>Alyushin Yury, Gorbatyuk Sergey</i>	
<b>CALCULATION OF EQUIVALENT MAGNETIC PERMEABILITY OF FERROMAGNETIC MATERIALS FOR MODELING OF THREE-DIMENSIONAL EDDY CURRENT FIELDS .....</b>	<b>395</b>
<i>Karpushkin Sergey, Glebov Aleksey, Karpov Sergey</i>	
<b>GENERATING MULTI-COMPONENT MULTI-LAYER COATINGS TYPE MECRALY USING MULTI-CATHODE MAGNETRON SPUTTERING SYSTEMS .....</b>	<b>400</b>
<i>Kolesnik Valery, Rubanov Yury, Tokach Yulia</i>	
<b>DEVELOPING OF POROUS COMPOSITES ON THE BASIS OF BI-POLYMERS WITH ALUMINUM PARTICLES AND ALOOH NANOPARTICLES FOR GETTING ANTIFRICTION COATINGS .....</b>	<b>404</b>
<i>Antonova Natalia, Lisnichenko Ilya, Sibirka Igor</i>	
<b>SIMULATION OF BORON AND CARBON FIBER COMPOSITE CHARACTERISTICS OF THE ELASTICITY .....</b>	<b>409</b>
<i>Pavlov Victor .P., Kudoyarova Vilina. M., Philippov Alexander. A.</i>	
<b>MATHEMATICAL MODEL OF THE CRYSTALLIZING BLANK'S THERMAL STATE AT THE HORIZONTAL CONTINUOUS CASTING MACHINE .....</b>	<b>413</b>
<i>Kryukov Igor Yu., Gorbatyuk Sergey M., Naumova Margarita G.</i>	
<b>HEAT TREATMENT OF COMPOSITE BASED ON MAX-PHASES OF THE TI-AL-C SYSTEM .....</b>	<b>418</b>
<i>Galyshev Sergey, Bazhin Pavel, Stolin Alexander, Musin Fanil, Astanin Vasily</i>	
<b>ON AGING OF HIGH-STRENGTH STAINLESS STEEL 08CR15NI5CU2TI .....</b>	<b>421</b>
<i>Makhneva Tat'yana, Dement'yev Vyacheslav, Makarov Sergei</i>	
<b>WORLD MARKET FOR NANOMATERIALS: STRUCTURE AND TRENDS .....</b>	<b>427</b>
<i>Inshakova Elena, Inshakov Oleg</i>	
<b>MODELLING OF CARBON NANOTUBE FUNCTIONALIZATION PROCESSES .....</b>	<b>432</b>
<i>Dyachkova Tatyana, Tugolukov Evgeny, Burakova Elena</i>	
<b>INVESTIGATION OF THE THERMOPHYSICAL PROPERTIES OF THE OXIDE LAYER FORMED BY MICROARC OXIDATION ON AL-SI ALLOY .....</b>	<b>436</b>
<i>Dudareva Natalia Yu., Ivashin Pavel V., Kruglov Alexander B.</i>	
<b>INFLUENCE OF AL-SI ALLOY MICROSTRUCTURE ON THE CORROSION RESISTANCE OF COATINGS FORMED BY THE MICROARC OXIDATION METHOD .....</b>	<b>441</b>
<i>Dudareva Natalia.Y., Kalschikov Roman.V., Zaynullina Liliya.I.</i>	
<b>DEVELOPMENT OF A MODEL OF A HOMOGENEOUS CONTINUOUS MEDIUM BASED ON THE MATERIAL WITH DEFECTS IN THE FORM OF HOLLOWES .....</b>	<b>445</b>
<i>Poroshin Vadim, Shlishevsky Andrey, Tsybulya Ksenia</i>	
<b>CARBON FIBER REINFORCED MAGNESIUM ALLOY IN A TI-6AL-4V SHELL .....</b>	<b>449</b>
<i>Astanin Vasily, Nurullina Daniya, Zaripova Adel, Soloviev Pavel, Musin Fanil</i>	
<b>NANOSTRUCTURED THIN FILM COATINGS WITH DIFFERENT STRENGTHENING EFFECTS .....</b>	<b>453</b>
<i>Panfilov Yury</i>	
<b>STRUCTURAL INVESTIGATION OF 70CU/30FE BASED CAST ALLOY OBTAINED BY COMBINED USE OF CENTRIFUGAL CASTING-SHS PROCESS AND FORGING .....</b>	<b>457</b>
<i>Sanin Vitalii V., Filonov Michael R., Yukhvid Vladimir I., Anikin Yurii A.</i>	
<b>MULTI-CYCLE ROLLED ALUMINUM ALLOY 3103 SANDWICHES: MECHANICAL PROPERTIES AND STAMP ABILITY .....</b>	<b>461</b>
<i>Nosova Ekaterina, Erisov Yaroslav, Grechnikov Fedor</i>	
<b>STRUCTURE AND WEAR RESISTANCE OF TI-TIC-TIB LAYERS OBTAINED BY NON-VACUUM ELECTRON BEAM CLADDING .....</b>	<b>465</b>
<i>Lenivtseva Olga, Chuchkova Lyubov, Krivezhenko Dina</i>	

<b>MULTILAYERED NB-AL COMPOSITE MANUFACTURED BY EXPLOSIVE WELDING</b> .....	469
<i>Maliutina Iuliia, Lazurenko Daria, Esikov Maxim</i>	
<b>IN-SITU STUDY OF STRUCTURAL EVOLUTION OF TRIBOLOGICAL MATERIALS USING SYNCHROTRON RADIATION</b> .....	473
<i>Burov Vladimir, Bataev Ivan, Smirnov Alexander</i>	
<b>EXPERIMENTAL RESEARCH STEEL GRADE «STEEL 45» TO ABRASION WEAR, DEPENDING ON THE EXIT ANGLE MACROSTRUCTURE FIBERS ON THE CONTACT SURFACE</b> .....	477
<i>Allenov Maksim Gennadievich, Allenov Dmitrii Gennadievich, Belokurov Oleg Aleksandrovich</i>	
<b>INVESTIGATION OF STRUCTURE AND PROPERTIES OF LINEAR ACETYLENIC CARBON COATINGS FOR MEDICAL POLYMERIC MATERIALS</b> .....	481
<i>Morozov Valentin, Zhdanov Alexey, Belyaev Leonid</i>	
<b>EFFECT OF DRYING METHODS OF AL<sub>2</sub>O<sub>3</sub>-GO POWDER MIXTURE ON THE PROPERTIES AND MICROSTRUCTURE OF SINTERED COMPOSITES OBTAINED BY SPARK PLASMA SINTERING</b> .....	485
<i>Fokin Pavel, Peretyagin Pavel, Smirnov Anton</i>	
<b>COMPARATIVE STUDIES ON MECHANICAL PROPERTIES OF WC-CO COMPOSITES SINTERED BY SPS AND CONVENTIONAL TECHNIQUES</b> .....	489
<i>Pristinskiy Yuri, Peretyagin Nikita, Solis Pinargote Nestor Washington</i>	

## PART 2

<b>STUDY OF CHARACTERISTICS OF STEEL SPECIMENS AFTER SELECTIVE LASER MELTING OF POWDER MATERIALS MSI</b> .....	493
<i>Zhukov Anton, Barakhtin Boris, Deev Artem</i>	
<b>FORMATION OF A STATE WITH HIGH STRENGTH AND ELECTRICAL CONDUCTIVITY IN THE CU-0.5%CR-0.2%ZR ALLOY</b> .....	497
<i>Sarkeeva Elena, Abramova Marina, Wei Wei</i>	
<b>EFFECT OF COLD ROLLING ON MICROSTRUCTURE AND MECHANICAL PROPERTIES OF CU-0.5%CR-0.2%ZR SUBJECTED TO ECAP WITH VARIOUS NUMBERS OF PASSES</b> .....	501
<i>Abramova Marina, Sarkeeva Elena, Wei Wei</i>	
<b>EFFECT OF THE STACKING FAULT ENERGY ON THE MECHANICAL PROPERTIES OF PURE CU AND CU-AL ALLOYS SUBJECTED TO SEVERE PLASTIC DEFORMATION</b> .....	505
<i>Zaynullina Liliya, Alexandrov Igor, Wei Wei</i>	
<b>FORMATION AND PROPERTIES OF COMPOSITE NANOSTRUCTURED PEO-COATINGS ON METALS AND ALLOYS</b> .....	510
<i>Mashtalyar Dmitry V., Imshinetsky Igor M., Sinebryukhov Sergey L.</i>	
<b>MULTIFUNCTIONAL POLYMER-CONTAINING COATINGS ON MAGNESIUM ALLOYS</b> .....	514
<i>Mashtalyar Dmitry V., Nadaraia Konstantine V., Gnedkov Sergey V.</i>	
<b>SIMULATION OF CRYSTALLINE PATTERN FORMATION BY THE MPFC METHOD</b> .....	518
<i>Starodumov Ilya, Ankudinov Vladimir, Galenko Peter</i>	
<b>PERSPECTIVES AND PRINCIPLES OF FORMULATION OF LEGAL BASIS OF DIAGNOSTIC QUALITY CONTROL OF MATERIALS AND PRODUCTS OF NANOSTRUCTURE COMPOSITES</b> .....	522
<i>Baryshev Gennady K., Tutnov Igor A., Biryukov Aleksandr P.</i>	
<b>DEVELOPMENT OF METHODOLOGICAL INSTRUMENTS OF OBTAINING, RESEARCH AND CONTROL OF ELECTROPHYSICAL SERVICE PROPERTIES OF NANOSTRUCTURE COMPOSITES</b> .....	526
<i>Baryshev Gennady K., Kondratyeva Anastasia S., Berestov Aleksandr V.</i>	
<b>TRANSFORMATION OF THE MICROSTRUCTURE AND PROPERTIES OF ULTRAFINE-GRAINED TINI ALLOYS DURING THE PROCESSING BY ECAP-CONFORM VIA THE ISOTHERMAL REGIME</b> .....	530
<i>Churakova Anna, Gunderov Dmitry, Raab Georgy</i>	
<b>STRENGTH AND FATIGUE OF AN ULTRAFINE-GRAINED AL-CU-MG ALLOY</b> .....	535
<i>Khafizova Elvira, Islamgaliev Rinat, Stidikov Vil</i>	
<b>STRUCTURE DETERMINATION AND COMPOSITE WING SPAR STRESS-STRAIN STATE ESTIMATION</b> .....	539
<i>Solovyev Pavel, Gomzin Andrey, Pervushin Yuriy, Musin Fanil, Galyshev Sergey</i>	
<b>THE USE OF FLUORINATED CNTS AS EPOXY RESIN MODIFIERS</b> .....	544
<i>Blohin Alexander N., Dyachkova Tatiana P., Sukhorukov Artem K.</i>	



<b>THEORETICAL AND EXPERIMENTAL INVESTIGATIONS OF THE FORMATION MECHANISMS OF RESIDUAL DEFORMATIONS OF FIBROUS LAYERED STRUCTURE COMPOSITES.....</b>	<b>550</b>
<i>Paimushin Vitaly N., Kholmogorov Sergey A., Badriev Ildar B.</i>	
<b>DETERMINATION OF PARTS TOLERANCES IN FRICTION KNOTS OF GREY AND NODULAR CAST IRON WITH THERMAL DIFFUSION PLATINGS VANADIUM AND CHROME.....</b>	<b>555</b>
<i>Veselovsky Alexander A., Dema Roman R., Kalugina Olga B., Nefedyev Sergey P.</i>	
<b>INVESTIGATION OF THE STRUCTURE OF WEAR RESISTANT COATINGS OBTAINED BY PLASMA POWDER SURFACING .....</b>	<b>559</b>
<i>Shapovalov Alexey N., Kalugina Olga B., Dema Roman R.</i>	
<b>THE EVOLUTION OF THE WELDED JOINTS STRUCTURE AT LOW CYCLE FATIGUE.....</b>	<b>565</b>
<i>Poyarkova Ekaterina, Kuzeev Iskander</i>	
<b>NON-DESTRUCTIVE TEST OF STEEL STRUCTURES BY CONICAL INDENTATION .....</b>	<b>570</b>
<i>Beskopylny Alexey, Veremeenko Andrey, Kadomtseva Elena, Beskopylnaia Natalia</i>	
<b>QUALITY ASSESSMENT OF STRUCTURAL STEEL IN MINING EQUIPMENT MANUFACTURE .....</b>	<b>574</b>
<i>Korotkov Aleksandr, Korotkova Lidia</i>	
<b>METAMATERIALS BASED ON WEDGE-SHAPED ELECTRODYNAMIC STRUCTURES .....</b>	<b>578</b>
<i>Mitrokhin Vladimir, Kuvyrkin Georgy, Ryzhenko Dmitry</i>	
<b>THE APPLICATION OF STATISTICAL METHODS TO CONTROL THE QUALITY OF THE CONTACT PAIRS OF ELECTRICAL CONNECTORS.....</b>	<b>583</b>
<i>Podmasteryev Konstantin V., Markov Vladimir V., Morozova Anna V.</i>	
<b>IDENTIFYING THE OBJECTS IN THE STRUCTURE OF AN E-MODEL BY MEANS OF IDENTIFIED FORMAL PARAMETERS IN THE DESIGN AND ENGINEERING ENVIRONMENT .....</b>	<b>587</b>
<i>Lavrentyeva Mariya, Govorkov Aleksey</i>	
<b>USING A DISCRETE PRODUCT MODEL TO DETERMINE THE DESIGN ELEMENT JUNCTURES .....</b>	<b>592</b>
<i>Lavrentyeva Mariya, Govorkov Aleksey</i>	
<b>A METHOD FOR DETERMINATION OF MASS-EXCHANGE AND CAPACITIVE CHARACTERISTICS OF ABSORBERS FOR LIFE SUPPORT SYSTEMS.....</b>	<b>595</b>
<i>Balabanov Pavel V., Kamaletdinova Guzel R., Muravyeva Maria G.</i>	
<b>THE EVALUATION OF THE CORRELATION BETWEEN ENTROPY AND NEGENTROPY IN THE STRUCTURE OF A TECHNICAL SYSTEM.....</b>	<b>599</b>
<i>Dulesov Aleksander, Karandeev Denis, Krasnova Tatyana</i>	
<b>ROBUST STABILIZATION OF THE MULTILINKED OBJECT.....</b>	<b>603</b>
<i>Lezhnina Yuliya, Ternovaya Galina, Evsina Elena</i>	
<b>NUMERICAL SIMULATION OF THE FLOW OF A GAS-LIQUID MEDIUM IN A CIRCULAR CHANNEL AT COOLING A HIGH-TEMPERATURE METAL CYLINDER WITH A VARIABLE CROSS-SECTION.....</b>	<b>609</b>
<i>Makarov Sergey, Dement'yev Vyacheslav, Makhneva Tatyana</i>	
<b>THE STUDY OF THE POSSIBILITY OF USING INNOVATIVE TECHNOLOGIES FOR SAVING ENGINEERING 3D OBJECTS.....</b>	<b>613</b>
<i>Sokolova Ekaterina</i>	
<b>ANALYSIS OF THE TIME RESERVE INFLUENCE ON THE TECHNOLOGICAL CELL PRODUCTIVITY .....</b>	<b>618</b>
<i>Obzherin Yuriy E., Sidorov Stanislav M., Fedorenko Sergey N.</i>	
<b>AUTOMATED DECISION-MAKING SYSTEM BASED ON GENETIC ALGORITHM IN MANAGING MAINTENANCE PROCESS.....</b>	<b>622</b>
<i>Nikishenko Aleksey, Boyko Elena, Obzherin Yuriy</i>	
<b>ANALYTICAL EVALUATION OF THE ROLLER BEARING SERVICE LIFE .....</b>	<b>627</b>
<i>Antsupov Aleksey, Antsupov Viktor, Slobodianskii Mikhail</i>	
<b>AN APPROACH TO BUILDING A CROSS-PLATFORM SYSTEM FOR THE COLLECTION AND PROCESSING OF DIAGNOSTIC INFORMATION ABOUT WORKING TECHNOLOGICAL EQUIPMENT FOR INDUSTRIAL ENTERPRISES .....</b>	<b>631</b>
<i>Nikishchkin Petr A., Kovalev Ilya A., Nikich Anatolii N.</i>	
<b>PARETO OPTIMIZATION USING THE METHOD OF ANT COLONY .....</b>	<b>635</b>
<i>Chengar Olga, Savkova Elena, Vladimirova Elena, Sapozhnikov Nikolay</i>	
<b>MATHEMATICAL MODELLING OF ELECTRODE SYSTEMS OF ELECTROSTATIC FILTRATION PROCESSES .....</b>	<b>639</b>
<i>Koltunov Leonid Ivanovich, Kizhuk Alexander Stepanovich</i>	

<b>ANALYSIS OF QUALITY CHARACTERISTICS IN THE MULTICRITERIA SYNTHESIS</b>	
<b>PROBLEM OF THE PRODUCTION SCHEDULE .....</b>	<b>644</b>
<i>Chengar Olga, Mashchenko Elena, Zamorenova Darya, Phedosov Andrey</i>	
<b>COMPONENT SIMULATION IN PROBLEMS OF CALCULATED MODEL FORMATION OF</b>	
<b>AUTOMATIC MACHINE MECHANISMS.....</b>	<b>649</b>
<i>Telegin Igor, Kozlov Alexander, Zhirkov Alexander</i>	
<b>NUMERICAL SOLUTION OF THE MODEL PROBLEM OF CCRF-DISCHARGE AT</b>	
<b>ATMOSPHERIC PRESSURE .....</b>	<b>653</b>
<i>Zheltukhin Viktor, Chebakova Violetta</i>	
<b>COMPUTER-AIDED DESIGN SYSTEM FOR GTE BLADES ELECTROCHEMICAL</b>	
<b>MACHINING TECHNOLOGY.....</b>	<b>657</b>
<i>Nekhoroshev Maksim, Pronichev Nikolay, Smirnov Gennadiy</i>	
<b>PREDICTION OF ELECTRONIC NANODEVICES TECHNICAL STATUS AND RELIABILITY</b>	
<b>BASED ON ANALYSIS OF THEIR PERFORMANCE PARAMETERS KINETICS UNDER THE</b>	
<b>INFLUENCE OF EXTERNAL FACTORS .....</b>	<b>662</b>
<i>Makeev Mstislav, Meshkov Sergey, Sinyakin Vladimir</i>	
<b>RESEARCH OF THE COMBINED EXTREMUM-SEEKING CONTROL SYSTEM DYNAMICS</b>	
<b>ON MATHEMATICAL AND COMPUTER MODELS .....</b>	<b>666</b>
<i>Bushuev Dmitriy Alexandrovich, Rubanov Vasilii Grigorievich, Titov Dmitriy Vitalyevich</i>	
<b>EXPERIMENTAL TEST OF THE OPTIMAL ROTATION FOR THE FINITE STIFFNESS</b>	
<b>CANTILEVER ROD.....</b>	<b>672</b>
<i>Bokhonsky Aleksandr I., Maistrishin Mikhail M., Ryzhkov Aleksandr I.</i>	
<b>MODELING OF MONITORING PROCESSES OF STRUCTURALLY HETEROGENEOUS</b>	
<b>TECHNOLOGICAL OBJECTS.....</b>	<b>676</b>
<i>Skatkov Aleksandr, Shevchenko Victoria, Voronin Dmitry, Moiseev Dmitriy</i>	
<b>NUMERICAL MODELING OF MECHANICAL BEHAVIOR OF CLINCH CONNECTIONS AT</b>	
<b>BREAKING OUT AND SHEARING .....</b>	<b>682</b>
<i>Berezhnoi Dmitri V., Shamim Reza, Balafendieva Irina S.</i>	
<b>INTERRELATION OF THE CONCEPT OF "UNCERTAINTY" IN THE INFORMATION</b>	
<b>THEORY AND THEORY OF MEASUREMENTS.....</b>	<b>686</b>
<i>Kopp Vadim, Balakin Alexey, Balakina Natalya, Preys Vladimir</i>	
<b>EFFECTIVENESS ANALYSIS OF THE KULBACK'S INFORMATION MEASURE IN THE</b>	
<b>TECHNOLOGICAL OBJECTS MONITORING .....</b>	<b>691</b>
<i>Skatkov Alexander, Brjuhoveckij Alexey, Moiseev Dmitriy</i>	
<b>RECURSIVE ESTIMATION OF THE PARTS PRODUCTION PROCESS QUALITY INDICATOR.....</b>	<b>695</b>
<i>Filipovich Oleg, Kopp Vadim, Voloshina Nataliya, Bokhonsky Alexander</i>	
<b>TEST METHOD OF DISTRIBUTION FUNCTIONS OF THE SEMI-MARKOVIAN SYSTEM</b>	
<b>DWELL TIMES IN STATES.....</b>	<b>699</b>
<i>Zamoryonov Mikhail, Zamoryonova Darya, Preis Vladimir</i>	
<b>SEMI-MARKOV MODEL OF PROCESSING REQUESTS TO THE CLOUD STORAGE .....</b>	<b>706</b>
<i>Zamoryonov Mikhail, Shevchenko Victoria, Vladimirova Elena, Sapozhnikov Nikolay</i>	
<b>FEEDBACK LINEARIZED TRAJECTORY-TRACKING CONTROL OF A MOBILE ROBOT .....</b>	<b>711</b>
<i>Kabanov Aleksey</i>	
<b>NEGATIVE VALUATION OF UNDESIRABLE OUTPUTS IN EVALUATING THE EFFICIENCY</b>	
<b>OF PRODUCTION SYSTEMS.....</b>	<b>715</b>
<i>Kao Chiang</i>	
<b>IMPLEMENTATION OF STATISTICAL PROCESS CONTROL METHODS AS A WAY TO</b>	
<b>REDUCE PRODUCTION COSTS AND IMPROVE PRODUCT QUALITY .....</b>	<b>719</b>
<i>Egorov Sergey, Kapitanov Alexey, Loktev Dmitriy</i>	
<b>METASYSTEM APPROACH TO INCREASE THE LOAD FACTOR FMS.....</b>	<b>725</b>
<i>Pishchukhin Alexandr</i>	
<b>THE DEVELOPMENT OF DISCRETE-ADDRESS MANUFACTURING PLANNING METHOD.....</b>	<b>729</b>
<i>Polyanskov Yuri, Lototsky Artem, Madanov Aleksandr</i>	
<b>MODELING OF RECONFIGURABLE MANUFACTURING SYSTEMS FOR DETERMINING</b>	
<b>THEIR PERFORMANCE.....</b>	<b>735</b>
<i>Kapitanov Alexey, Mitrofanov Vladimir</i>	
<b>A NEW PARADIGM OF INDUSTRIAL SYSTEM OPTIMIZATION BASED ON THE</b>	
<b>CONCEPTION "INDUSTRY 4.0" .....</b>	<b>739</b>
<i>Maksimchuk Olga, Pershina Tatyana</i>	
<b>FUNCTIONAL MANAGEMENT OF THE ECONOMIC ACTIVITIES OF INDUSTRIAL</b>	
<b>SYSTEMS .....</b>	<b>744</b>
<i>Matveeva Elena, Simagina Svetlana</i>	

<b>IDENTIFICATION OF THE TECHNICAL PRODUCT CHARACTERISTICS OF PROCESS SCOPING STUDIES .....</b>	<b>749</b>
<i>Feofanov Alexander, Kim Natal'ja, Frolov Evgenij, Grishina Tat'jana</i>	
<b>PNEUMATIC FORMWORK USED IN STRENGTHENING OF STRUCTURAL ELEMENTS DURING RECONSTRUCTION OF BUILDINGS AND STRUCTURES .....</b>	<b>752</b>
<i>Abramyan Susanna, Polyakov Vladimir, Oganesyanyan Ogan</i>	
<b>THE RESEARCH OF CONTAMINATION REGULARITIES OF HISTORICAL BUILDINGS AND ARCHITECTURAL MONUMENTS BY METHODS OF COMPUTER MODELING .....</b>	<b>756</b>
<i>Kuzmichev Andrey A., Azarov Valeriy N., Kuzmichev Alexander V.</i>	
<b>AUTOMATION OF PRODUCTION OF CONCRETE MIX .....</b>	<b>761</b>
<i>Popello Egor, Gurieva Victoria</i>	
<b>SIMULATION AND ESTIMATION OF PARAMETERS IN RECONFIGURABLE MULTIPOINT FORMING PROCESSES OF PLATES IN THE CREEP MODE .....</b>	<b>765</b>
<i>Bormotin Konstantin, Belykh Sergey, Aung Vin</i>	
<b>ANALYSIS OF THE PROVIDING ENVIRONMENTAL SAFETY SUPERVISION IN CONSTRUCTION AND RECONSTRUCTION OF FACILITIES IN THE URBAN TERRITORIES .....</b>	<b>770</b>
<i>Bespalov Vadim, Kotlyarova Ekaterina</i>	
<b>CREATION ON THE BASIS OF THE FIRST THEORY OF STRENGTH MODEL EQUAL STRESSED CYLINDER EXPOSED TO POWER AND TEMPERATURE LOADS .....</b>	<b>774</b>
<i>Andreev Vladimir, Leontyev Andrey</i>	
<b>FORECASTING OF USEFUL LIFE OF THE STRUCTURES OF A PRODUCTION BUILDING DURING OPERATION .....</b>	<b>778</b>
<i>Pshenichkina Valeriya, Suhina Kseniya, Zhukov Artem</i>	
<b>CALCULATION OF A THREE-LAYER PLATE BY THE FINITE ELEMENT METHOD TAKING INTO ACCOUNT THE CREEP OF THE FILLER .....</b>	<b>782</b>
<i>Chepurnenko Anton, Savchenko Andrei, Yazyeva Svetlana</i>	
<b>CREEP CALCULATION FOR A THREE-LAYER BEAM WITH A LIGHTWEIGHT FILLER .....</b>	<b>787</b>
<i>Chepurnenko Viacheslav, Yazyev Batyr, Song Xuanzhen</i>	
<b>ENERGY METHOD IN SOLVING THE PROBLEMS OF STABILITY FOR A VISCOELASTIC POLYMER RODS .....</b>	<b>791</b>
<i>Yazyev Serdar, Kozelskaya Maria, Strelnikov Grigory, Litvinov Stepan</i>	
<b>RECIPE-TECHNOLOGICAL ASPECTS OF IMPROVING THE PROPERTIES OF NON-AUTOCLAVED AERATED CONCRETE .....</b>	<b>796</b>
<i>Shuisky Anatoliy, Stelmakh Sergey, Shcherban Evgeniy, Torlina Elena</i>	
<b>EFFECT OF CAUSTIC SODA ON THE INTENSITY OF GASSING IN THE PRODUCTION OF NON-AUTOCLAVED AERATED CONCRETE .....</b>	<b>801</b>
<i>Halyushev Alexander, Holodnyak Mikhail, Nazhuyev Muhama</i>	
<b>THIN ISSUES PRODUCTS OF PROCESSING WASTE HEAPS AS RAW MATERIALS FOR CERAMIC WALL PRODUCTS .....</b>	<b>806</b>
<i>Kotlyar Vladimir, Yavruyan Khungianos</i>	
<b>STATISTICAL MODELING FOR RISK ASSESSMENT AT SUDDEN FAILURES OF CONSTRUCTION EQUIPMENT .....</b>	<b>810</b>
<i>Rogovenko Tatyana, Zaitseva Marina</i>	
<b>TECHNICAL-ECONOMIC JUSTIFICATION OF THE CHOICE OF HEAT SOURCE AUTONOMOUS HEATING SCHEMES .....</b>	<b>814</b>
<i>Tikhomirov Sergei, Golubov Gennadiy, Syichev Pavel</i>	
<b>SIMULATION OF THE PROCESS AND SYSTEM OF POWER PLANTS EXHAUST GASES PURIFICATION DURING CONSTRUCTION AND RE-CONSTRUCTION OF HOUSING AND UTILITIES INFRASTRUCTURE OF URBAN AREAS .....</b>	<b>818</b>
<i>Lysova Ekaterina, Paramonova Oksana, Gurova Oksana</i>	
<b>ABOUT INFLUENCE OF SOME SUPERPLASTICIZERS ON HYDRATION AND THE STRUCTURE OF HARDENED CEMENT PASTE .....</b>	<b>823</b>
<i>Koryanova Yulia, Nesvetaev Grigory</i>	
<b>INDUSTRIAL ROBOTS APPLICATION IN THE CONSTRUCTION OF BUILDINGS AND STRUCTURES .....</b>	<b>829</b>
<i>Verzhbovskiy Gennady, Reshetnikov Alexey</i>	
<b>STABILITY OF DIRECT CIRCUITS INTEGRATING THE EQUATIONS OF MOTION IN THE SIMULATION OF THE DYNAMICS OF DESTRUCTION .....</b>	<b>833</b>
<i>Panasjuk Leonid, Kravchenko Galina</i>	
<b>INNOVATIVE METHODS OF MONITORING FOR DEFORMATIONS OF MAN-MADE LOADED AREAS .....</b>	<b>837</b>
<i>Sheina Svetlana, Giryva Lidia</i>	

<b>NANOMODIFIED CONSTRUCTIONAL FIBER-REINFORCED CONCRETE</b> .....	840
<i>Perfilov Vladimir, Gabova Viktoriya</i>	
<b>PROTECTION SYSTEM OF HYDRAULIC DRIVE OF ROAD CONSTRUCTION MACHINERY</b> .....	844
<i>Fomenko Nikolay, Burlachenko Oleg, Ivanov Maxim</i>	
<b>PREDICTION OF LEAKAGE IN THE FIXED MECHANICAL SEAL</b> .....	848
<i>Asheichik Anatoly A., Bahrami Mohammad Reza</i>	
<b>OPTIMIZATION OF GEOMETRY OF THE SEALING CUFF OF THE PISTON OF VOLUMETRIC OIL AND GAS HYDRAULIC AGGREGATES</b> .....	852
<i>Dushko Oleg, Perfilov Vladimir, Yaroshik Vladimir</i>	
<b>METHODS AND MEANS FOR THE IN-HOUSE TRAINING OF MINING MACHINE OPERATORS</b> .....	856
<i>Velikanov Vladimir, Dyorina Natalja, Abdrakhmanov Azat</i>	
<b>THE SYSTEM OF MONITORING OF EPILEPSY IN A SLEEP</b> .....	861
<i>Gorbunov Alexey, Podolskiy Vladimir, Egorov Vladimir</i>	
<b>EVALUATION OF RESIDUAL STRESSES IN LOCK VALVE ELEMENTS OF PETROCHEMICAL PRODUCTIONS</b> .....	865
<i>Nikolaeva Elena, Mashukov Artem</i>	
<b>THE PARAMETER'S OPTIMIZATION OF THE METEOROLOGICAL ROCKET'S CORRECTING ENGINE TO REDUCE THE ZONE OF THE USED BLOCKS' FALLING</b> .....	869
<i>Mitiukov Nicholas, Kasatkin Timothy, Samigullina Guzalia</i>	
<b>FRACTURE STRENGTH FOR METAL STRUCTURE OF A CRANE</b> .....	873
<i>Mironov Vladimir, Lukashuk Olga, Ogorelkov Dmitriy</i>	
<b>INFLUENCE OF THE TRACK GRADIENT ON THE CONTACT TEMPERATURE AT THE WHEEL-RAIL ZONE FOR OPEN-PIT LOCOMOTIVES</b> .....	877
<i>Keropyan Ambartsum, Gerasimova Alla, Goloshapov Kirill</i>	
<b>IMPACT OF THE LIQUID LEVEL IN THE JET-FILM CONTACT DEVICES ON THE HEAT-AND-MASS TRANSFER PROCESS</b> .....	881
<i>Dmitrieva Oksana S., Dmitriev Andrey V., Madyshev Ilnur N., Kruglov Leonid V.</i>	
<b>COMPRESSIBLE MATERIAL FLOW IN CYLINDRICAL CHANNEL WITH VARIABLE CROSS SECTION</b> .....	885
<i>Pryanishnikova Elena, Belyaeva Nadezhda, Stolin Alexandr</i>	
<b>DEVELOPMENT OF CRITERIA FOR A MAGNETIC HYDROCYCLONES</b> .....	890
<i>Avdeyev Boris</i>	
<b>EIGENVIBRATIONS OF A BAR WITH LOAD</b> .....	894
<i>Samsonov Anton A., Solov'ev Sergey I., Solov'ev Pavel S.</i>	
<b>FINITE DIFFERENCE APPROXIMATION OF ELECTRON BALANCE PROBLEM IN THE STATIONARY HIGH-FREQUENCY INDUCTION DISCHARGES</b> .....	898
<i>Solov'ev Sergey I., Solov'ev Pavel S., Chebakova Violetta Yu.</i>	
<b>ROLE OF ASPHALT PAVER PRODUCTIVITY IN DIRECTION DEVELOPMENT OF ROAD MECHANICAL ENGINEERING</b> .....	902
<i>Karpushko Marina, Bartolomei Igor</i>	
<b>MECHANICS OF UNLOADING OF A ROUGH SURFACES PRE-LOADED JOINT</b> .....	905
<i>Ogar Peter, Gorokhov Denis, Ugryumova Elena</i>	
<b>THE ELASTIC-PLASTIC CONTACT OF A SINGLE ASPERITY OF A ROUGH SURFACE</b> .....	911
<i>Ogar Peter, Gorokhov Denis, Belokobylskiy Sergey</i>	
<b>ANALYSIS OF VIBROPROTECTION CHARACTERISTICS OF PNEUMATIC RELAXATION SEAT SUSPENSION WITH CAPABILITY OF VIBRATION ENERGY RECUPERATION</b> .....	915
<i>Lyashenko Mikhail, Potapov Pavel, Iskaliev Azamat</i>	
<b>SIMULATOR AS A TOOL OF TRAINING TO MODERN EQUIPMENT MANAGEMENT</b> .....	920
<i>Ahmedyanova Gulnara</i>	
<b>A SETUP FOR ELECTRICALLY CONTROLLED LIQUID-PHASE SORPTION OF ORGANIC POLLUTANTS ON NANOSTRUCTURED MATERIALS</b> .....	924
<i>Neskoronnaya Elena, Babkin Alexander, Burakov Alexander</i>	
<b>IMPLEMENTATION OF CARBON NANOMODIFICATION FOR SORPTION MATERIALS</b> .....	929
<i>Babkin Alexander, Neskoronnaya Elena, Burakova Irina</i>	
<b>GRAPHENE MATERIALS FOR LEAD (II) EXTRACTION: AN EQUILIBRIUM STUDY</b> .....	934
<i>Kucherova Anastasia, Burakova Irina, Burakov Alexandr</i>	
<b>KINEMATIC RESEARCH OF CLOSED PLANETARY GEARS</b> .....	939
<i>Kutlubaev Ildar, Matcko Elena, Panfilova Olga</i>	

<b>ANALYSIS OF THE NUMERICAL RESULTS OF THE MELTING PARAFFIN CORKS, ENSURING THE SAFE OPERATION OF THE PIPELINE USING A MOBILE SOURCE OF ELECTROMAGNETIC RADIATION .....</b>	<b>942</b>
<i>Titarenko Vera</i>	
<b>SIMULATION OF PUMP PERFORMANCE CONTROL SCHEMES WITH THE USE OF THE VIRTUAL MODEL OF THE PROCESS .....</b>	<b>947</b>
<i>Zatsarinnaya Julia Nikolaevna, Staroverova Nataliya Alexandrovna, Logacheva Alla Grigorevna</i>	
<b>VIBRATION DECREASE OF ELECTROMECHANICAL ACTUATORS BASED ON ROLLER SCREW MECHANISMS .....</b>	<b>951</b>
<i>Morozov Valentin, Fadeev Pavel, Shtych Dmitri, Belyaev Leonid, Zhdanov Alexey</i>	
<b>INVESTIGATION OF STRESS-STRAIN STATE IN THE FLYWHEEL AND ESTIMATION THEIR SPECIFIC ENERGY CAPACITY .....</b>	<b>956</b>
<i>Berezhnoi Dmitri V., Gajnulina Lejsan R., Sachenkov Andrej A.</i>	
<b>THE DEVICE TO IMPROVE THE WORKING ELEMENT OF THE ROTARY TRENCH EXCAVATOR IN THE PRODUCTION PROCESS OF BREAKING A MAIN PIPELINE .....</b>	<b>960</b>
<i>Akhmedov Asvar</i>	
<b>IMPROVING THE QUALITY OF TRANSIENT RESPONSE DURING AUTOMATIC CONTROL OF THE TURN OF A TRACKED VEHICLE BASED ON THE IMPLEMENTATION OF STRUCTURED INPUT SHAPERS .....</b>	<b>965</b>
<i>Taratorkin Igor, Derzhanskii Victor, Taratorkin Alexander</i>	
<b>PROBLEMS OF WAVE DYNAMICS OF THE SYSTEMS THAT SUPPORT MOVING LOADS .....</b>	<b>970</b>
<i>Gerasimov Sergey I., Erofeev Vladimir I., Malkhanov Alexey O.</i>	
<b>SIMULATION OF HEAT LOSSES AND TEMPERATURE OF BLAST FURNACES TUYERES .....</b>	<b>976</b>
<i>Tarasov Yuriy, Radyuk Alexandr, Gorbatyuk Sergey</i>	
<b>SYSTEM OF INFORMATION OUTPUT TO ELECTRONIC MAPS ABOUT VESSELS AND AIRCRAFTS MOVEMENT .....</b>	<b>981</b>
<i>Vergeichik Vitaly, Kramar Vadim, Dushko Veronika, Volodin Andrey</i>	
<b>Author Index</b>	