

# **2019 International Multi-Conference on Industrial Engineering and Modern Technologies (FarEastCon 2019)**

**Vladivostok, Russia  
1 – 4 October 2019**

**Pages 1-737**



**IEEE Catalog Number: CFP19M35-POD  
ISBN: 978-1-7281-0062-3**

**Copyright © 2019 by the Institute of Electrical and Electronics Engineers, Inc.  
All Rights Reserved**

*Copyright and Reprint Permissions:* Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

***\*\*\* This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number:	CFP19M35-POD
ISBN (Print-On-Demand):	978-1-7281-0062-3
ISBN (Online):	978-1-7281-0061-6

**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  
E-mail: [curran@proceedings.com](mailto:curran@proceedings.com)  
Web: [www.proceedings.com](http://www.proceedings.com)

CURRAN ASSOCIATES INC.  
**proceedings**  
.com

# TABLE OF CONTENTS

<b>EDITORIAL</b> .....	1
<i>Denis B. Solovev</i>	
<b>LOCALIZATION AND DETERMINATION OF THE NATURE AND SIZE OF DAMAGE OF THE SHIP BODY PLATING</b> .....	2
<i>I. Shirokov ; A. Azarov ; E. Shirokova</i>	
<b>DYNAMIC MEASUREMENTS OF SIDE LOADS ON TECHNOLOGICAL EQUIPMENT OF TRACKED FOREST LOADER</b> .....	6
<i>D. V. Chernik</i>	
<b>USE OF ELECTRICAL HEATING IN HEAT TREATMENT TECHNOLOGY AND DRYING OF WILD-GROWING RAW</b> .....	10
<i>V. D. Ochirov ; I. V. Altukhov ; V. A. Fedotov</i>	
<b>REVIEW OF BLOCKCHAIN TECHNOLOGY VULNERABILITIES AND BLOCKCHAIN-SYSTEM ATTACKS</b> .....	15
<i>A. Averin ; O. Averina</i>	
<b>RELATIVE EQUIVALENCE OF DEFECTS</b> .....	21
<i>V. V. Voronin ; O. A. Davydov</i>	
<b>FRACTAL REPRESENTATION OF TWO-DIMENSIONAL DATA BASED ON WAVELET TRANSFORM</b> .....	26
<i>A. Shoberg ; K. Shoberg</i>	
<b>CALCULATING BORDERS OF POTENTIALLY DANGEROUS AREAS OF INTERACTING UAV</b> .....	30
<i>V. D. Berdonosov ; M. D. Liven ; A. A. Zivotova ; D. O. Zhuravlev</i>	
<b>HYBRID POWER SYSTEMS OPTIMIZATION FOR REGIONS OF THE FAR NORTH</b> .....	36
<i>V. D. Berdonosov ; V. A. Shamak ; A. A. Zivotova ; M. V. Zheltov</i>	
<b>ESTIMATION OF OBSERVATION ERROR OF AUV USING SONAR POSITIONING SYSTEM</b> .....	42
<i>I. N. Burdinsky ; S. A. Otcheskii ; I. V. Karabanov</i>	
<b>INTELLIGENT CONTROL SYSTEM FOR STATIC VAR COMPENSATOR OF ARC FURNACE</b> .....	48
<i>N. E. Deryuzhkova ; V. A. Solovyev ; A. V. Kupova</i>	
<b>THE IMAGE ANALYSIS USING FAST RADIAL SYMMETRY TRANSFORM IN CONTROL SYSTEMS BASE ON THE COMPUTER VISION</b> .....	54
<i>S. Lyasheva ; M. Shleymovich ; R. Shakirzyanov</i>	
<b>ENERGY SURFACE OF PIT-PATTERNED TEMPLATES FOR GROWTH OF SPACE-ARRANGED ARRAYS OF QUANTUM DOTS – MOLECULAR DYNAMICS CALCULATIONS USING HIGH-EFFICIENCY ALGORITHMS</b> .....	60
<i>P. L. Novikov ; A. V. Dvurechenskii ; K. V. Pavsky</i>	
<b>DESIGNING AN ADAPTIVE SOFTWARE AND HARDWARE COMPLEX FOR CONVERTING SOLAR ENERGY</b> .....	63
<i>V. V. Boldyrev ; M. A. Gorkavyy ; Denis B. Solovev</i>	
<b>THE ALGORITHM FOR AUTOMATED DEVELOPMENT OF DESIGN DRAWINGS OF ONE-LINE DIAGRAMS OF DISTRIBUTION DEVICES FOR 6-10 KV OF SUBSTATIONS</b> .....	67
<i>E. A. Panova ; A. V. Varganova ; O. E. Kushmil' ; N. S. Sorokin</i>	
<b>ASSESSMENT OF THE STATE OF A MOVING OBJECT BASED ON THE ANALYSIS OF POINCARÉ GRAPHS</b> .....	72
<i>S. Klevtsov ; A. Klevtsova</i>	
<b>ORGANIZATION OF ENERGY SAVING DURING WORK OF POWER STATION OF METALLURGICAL ENTERPRISE IN A SUMMER PERIOD WITH THE USE OF THE SOFTWARE MODULES</b> .....	77
<i>E. B. Agapitov ; V. N. Mikhaylovskiy ; M. S. Sokolova</i>	
<b>CRITERIA MODEL OF SUSTAINABLE DEVELOPMENT OF GLOBAL PROCESSES: ELECTRIC POWER CONSUMPTION</b> .....	81
<i>V. Kavchenkov ; E. Kavchenkova ; I. Chernenkov</i>	
<b>SYNTHESIS OF MULTIMODE REGULATORS BASED ON THE DECOMPOSITION OF THE CONTROL SPACE USING THE MAXIMUM CONDITION OF THE GENERALIZED POWER FUNCTION</b> .....	86
<i>A. Kostoglotov ; A. Agapov ; S. Lazarenko</i>	
<b>SYNTHESIS OF CONTROLS FOR NONLINEAR MULTIPLY CONNECTED INERTIAL SYSTEMS USING VARIATIONAL PRINCIPLES</b> .....	90
<i>A. Kostoglotov ; S. Lazarenko ; D. Andrashitov</i>	

<b>FOUR SAMPLES METHOD FOR THE SELECTION OF SINUSOIDAL COMPONENTS PARAMETERS OF POWER SYSTEM EMERGENCY MODE .....</b>	<b>96</b>
<i>N. Buryanina ; Yu. Korolyuk ; M. Koryakina ; K. Suslov ; E. Lesnykh</i>	
<b>COMPACT POWER TRANSMISSION LINES .....</b>	<b>101</b>
<i>N. Buryanina ; Yu. Korolyuk ; M. Koryakina ; K. Suslov ; E. Lesnykh</i>	
<b>PROBLEMS OF PROCESSING AND RECOGNITION OF DIGITAL IMAGES IN TECHNICAL VISION SYSTEMS .....</b>	<b>107</b>
<i>T. R. Zmyzgova ; E. M. Kuznetsova ; Y. K. Karpov</i>	
<b>SINE-COSINE GENERATOR.....</b>	<b>113</b>
<i>T. Halina ; I. Ivanov ; M. Stalnaya</i>	
<b>SIMULATION FOR PRETENSIONING BOLTED-TYPE CONNECTIONS OF HIGH-LOADED ASSEMBLY UNITS.....</b>	<b>117</b>
<i>M. A. Bolotov ; V. A. Pechenin ; I. A. Grachev ; E. V. Kudashov</i>	
<b>AUTOMATED MEASUREMENT OF BEVEL GEARS.....</b>	<b>121</b>
<i>R. M. Khusainov ; V. B. Stupko ; Yurasov S. Yu</i>	
<b>IMPLEMENTATION OF DISCRETIONARY SECURITY POLICY IN THE DISTRIBUTED SYSTEMS BASED ON THE SECRET SHARING SCHEME.....</b>	<b>127</b>
<i>S. V. Belim ; S. Yu. Belim</i>	
<b>THE SOFT STARTING SYSTEM FOR AN INDUCTION MOTOR WITH AN INDUCTION RESISTANCE IN THE WOUND ROTOR CIRCUIT .....</b>	<b>131</b>
<i>V. N. Meshcheryakov ; A. A. Muravyev ; A. I. Boikov ; V. V. Pikalov</i>	
<b>PRIMARY CONTROL OF THE CURRENT FREQUENCY IN ENERGY SYSTEM BASED ON NPP USING A MULTIFUNCTIONAL COMBINED-CYCLE PLANT .....</b>	<b>136</b>
<i>V. E. Yurin ; M. A. Murtazov</i>	
<b>DEVELOPMENT OF MOTION CONTROLLER BASED ON ARM MICROCOMPUTERS BY SUPPORTING DIFFERENT STRATEGIES OF CONTROLLING CAN SERVO DRIVES .....</b>	<b>140</b>
<i>G. Martinov ; A. Lyubimov ; A. A. Khoury</i>	
<b>OPTIMIZATION OF PANEL STRETCH FORMING PROCESSES USING CAE- TECHNOLOGIES.....</b>	<b>146</b>
<i>K. S. Bormotin ; Win Aung</i>	
<b>SYNTHESIS OF AN ADAPTIVE SYSTEM FOR DIAGNOSING THE QUALITY OF AUTOMATED WELDING PRODUCTS.....</b>	<b>151</b>
<i>V. P. Egorova ; M. A. Gorkavyy ; A. Y. Efimov ; Denis B. Solovev</i>	
<b>DUALITY OF THE PRINCIPLE OF THE ENTROPY MAXIMUM.....</b>	<b>155</b>
<i>V. Kopp ; A. Balakin ; N Balakina</i>	
<b>IMPROVING THE ACCURACY OF DYNAMIC BIOMETRIC MEASUREMENTS IN THE INFRARED RANGE IN THE SYSTEMS OF MONITORING THE CURRENT STATE OF THE OPERATOR IN THE ENERGY SECTOR.....</b>	<b>161</b>
<i>M. V. Alyushin</i>	
<b>INCREASING THE EFFICIENCY OF THE PROBING SIGNALS CORRELATION PROCESSING OF AN ULTRASONIC LIQUID FLOWMETER .....</b>	<b>165</b>
<i>S. Gerasimov ; I. Zhelbakov</i>	
<b>THE ANALYSIS OF GEOMETRICAL, KINEMATIC AND ACCURACY PARAMETERS OF THE MULTIFUNCTIONAL SCARA-MODULE .....</b>	<b>171</b>
<i>O. Filipovich ; N. Chalnikov ; A. Balakin</i>	
<b>ENERGY EFFICIENT REVERSIBLE CONVERTER FOR AN ALTERNATING CURRENT LOCOMOTIVE.....</b>	<b>175</b>
<i>S. V. Vlasevskiy ; O. A. Malysheva ; O. V. Melnichenko</i>	
<b>CONTROLLING CAN SERVO STEP DRIVES AND THEIR REMOTE MONITORING BY USING PROTOCOL OPC UA .....</b>	<b>180</b>
<i>G Martinov ; A Issa ; L Martinova</i>	
<b>WEB ATTACKS DETECTION BASED ON PATTERNS OF SESSIONS .....</b>	<b>185</b>
<i>D. Dik ; E. Polyakova ; A. Chelovechkova ; V. Moskvina</i>	
<b>STRUCTURES AND ALGORITHMS OF THE AUTOMATED ECOLOGICAL MONITORING SYSTEM OF INDUSTRIAL ENTERPRISES .....</b>	<b>190</b>
<i>A. A. Belov ; A. Yu. Proskuryakov</i>	
<b>DEVELOPMENT OF THE AUTOMATIC SWITCH FOR ELECTRIC POWER TRANSMISSION IN THE GENERAL.....</b>	<b>195</b>
<i>E. A. Bekirov ; S. N. Voskresenskaya</i>	
<b>COMPREHENSIVE ANALYSIS AND SIMULATION OF FAIL-SAFE OPERATION OF DISTRICT HEATING IN COMMUNITIES .....</b>	<b>200</b>
<i>A. A. Gavrilova ; A. G. Salov ; L. A. Sagitova</i>	

<b>ELECTRONIC CONTROL SYSTEM OF CONTINUOUSLY VARIABLE TYPE OF MECHANICAL TRANSMISSION NAMED AFTER BLAGONRAVOV</b> .....	204
<i>A. V. Yurkevich ; A. V. Tereshin ; V. A. Soldatkin</i>	
<b>MODELING OF THE DYNAMICS OF WORLD ELECTRIC POWER PRODUCTION</b> .....	211
<i>V. Kavchenkov ; E. Kavchenkova ; I. Chernenkov</i>	
<b>INDUCTION ANNEALING OF PIPE WELD SEAMS WITH LAYED OVER INDUCTOR</b> .....	217
<i>S. V. Dzliev ; D. N. Bondarenko ; S. Adoh ; M. S. Golubev ; K. E. Pishchalev</i>	
<b>ONE METHOD OF HEAT TRANSFER PROCESS MATHEMATICAL MODELING IN SOLIDS</b> .....	220
<i>A. V. Eremin ; N. P. Krasnova</i>	
<b>FORMATION OF CONFIGURATION OF WIRING HARNESES OF THE LORRY</b> .....	225
<i>R. A. Nizamov ; E. Ya. Fedorov ; A. V. Ferenets</i>	
<b>EXPERIMENTAL STUDY OF THE CHARACTERISTICS OF MACRO-BENDING FIBER-OPTIC SENSORS OF ANGULAR DISPLACEMENT FOR ANTHROPOMORPHIC ROBOT GRIPPERS</b> .....	229
<i>O. G. Babaev Ogli ; S. A. Matyunin</i>	
<b>EXPERIMENTAL STUDY OF THE CHARACTERISTICS OF MACRO-BENDING FIBER-OPTIC SENSORS OF TACTILE FORCE FOR ANTHROPOMORPHIC ROBOT GRIPPERS</b> .....	235
<i>O. G. Babaev Ogli ; S. A. Matyunin</i>	
<b>POWER MANAGEMENT OF A CONTINUOUS MINING PROCESS</b> .....	241
<i>M. A. Sokolovsky ; V. S. Klimash</i>	
<b>ADAPTATION OF STRUCTURE OF INFORMATION-MEASURING SYSTEM BASED ON FUZZY LOGIC</b> .....	244
<i>A. V. Eliseev</i>	
<b>ELECTRIC DRIVE WITH COMMON RECTIFIER AND INDIVIDUAL INVERTERS FOR ASYNCHRONOUS ELECTRIC MOTORS OF WOODWORKING LINE</b> .....	250
<i>V. S. Klimash ; A. V. Petuhov</i>	
<b>HEAT TRANSFER FROM THE COLLECTIVELY FINNED SURFACE AT DIFFERENT TEMPERATURES OF THE END SOURCES</b> .....	254
<i>A. Aksenov</i>	
<b>ADAPTIVE MOTION CONTROL OF A NON-LINEAR ELASTIC AIRCRAFT</b> .....	258
<i>V. V. Putov ; V. N. Sheludko ; Toan Chan Kuok</i>	
<b>OPERATION OF BUILDINGS AND STRUCTURES BASED ON BIM STANDARDS IN THE DIGITAL ECONOMY</b> .....	263
<i>A. V. Demenev ; R. N. Lopatko ; V. G. Zharov</i>	
<b>DEVELOPMENT OF TECHNICAL MEANS FOR MOORING THE UNMANNED VESSELS</b> .....	268
<i>A. Butsanets ; E. Ol'Khovik</i>	
<b>PORT HANDLING EQUIPMENT LIFECYCLE MANAGEMENT</b> .....	271
<i>Yu. Ezhov ; P. Garibin ; E. Ol'Khovik</i>	
<b>COMPARATIVE CHARACTERISTICS OF WAVE-TYPE WIND CONVERTERS</b> .....	275
<i>S. D. Strelalov ; L. P. Strelalova ; V. V. Kurbatov</i>	
<b>ESTIMATION OF PARAMETERS OF NON-STATIONARY INFORMATION PROCESSES USING WAVELET ANALYSIS</b> .....	279
<i>A. Sklyarov</i>	
<b>CORROSION MONITORING SYSTEM FOR FIELD PIPELINE APPLYING CBR METHOD</b> .....	282
<i>O. N. Kuzyakov ; M. A. Andreeva ; I. N. Gluhih</i>	
<b>USING OF CONTROL ACTIONS SHAPER FOR MOVEMENT CONTROL PROCESS OF MOBILE PLATFORM</b> .....	288
<i>E. K. Karpov ; T. R. Zmyzgova ; E. M. Kuznetsova</i>	
<b>MODEL OF INFORMATION-MEASURING SYSTEM USED FOR TWO-PARAMETER SELECTIVE ASSEMBLY CONTROL</b> .....	294
<i>O. Filipovich ; V. Filipovich</i>	
<b>METHODS OF MULTI-CRITERIAL OPTIMIZATION OF MACHINING PROCESS</b> .....	298
<i>J. A. Bondarenko ; O. V. Bestuzheva ; Y. A. Get'Man</i>	
<b>THE METHOD OF ONE-DIMENSIONAL STRUCTURAL APPROXIMATION OF IMAGES OF CELLULAR SURFACES OF INDUSTRIAL PRODUCTS IN THE TASK OF INPUT METROLOGICAL CONTROL</b> .....	302
<i>M. M. Gavrikov ; R. M. Sinetsky</i>	
<b>THE METHOD OF APPROXIMATE ESTIMATION OF THE DYNAMIC LOAD OF THE TRAIN IN THE BRAKING PROCESS</b> .....	309
<i>V. A. Karpychev ; K. A. Sergeev ; S. V. Bespalco ; A. A. Tarmaev</i>	
<b>ONLINE TECHNOLOGY OF INSULATORS CONDITION MONITORING IN SMART GRID POWER SUPPLY SYSTEMS</b> .....	313
<i>A. M. Gataullin</i>	

<b>ANALYSIS OF TECHNOLOGICAL DAMAGE AT 110 KV SUBSTATIONS IN JSC IDGC OF THE NORTH CAUCASUS - «SEVKAVKAZENERGO»</b> .....	317
<i>M. Plieva ; O. Gavrina ; A. Kabisov</i>	
<b>DESIGN OF INTELLIGENT DECISION SUPPORT SYSTEM FOR ROBOTIZED WELDING TECHNOLOGICAL PROCESSES OPTIMIZATION</b> .....	324
<i>A. Y. Efimov ; M. A. Gorkavyy ; V. P. Egorova ; Denis B. Solovlev</i>	
<b>AGGREGATED CLASSIFIERS FOR STATE DIAGNOSTICS OF THE TECHNICAL OBJECT</b> .....	328
<i>V. N. Klyachkin ; J. E. Kuvayskova ; D. A. Zhukov</i>	
<b>NUMERICAL MODELLING OF HYDRAULIC DRIVES AS COMPLEX DYNAMIC SYSTEMS</b> .....	332
<i>V. S. Krutikov ; O. V. Limantseva ; K. A. Likhoded</i>	
<b>NUMERICAL MODELING FRAMEWORK OF THE HYDRAULIC APPARATUS AS DYNAMIC OBJECTS</b> .....	338
<i>V. S. Krutikov ; O. V. Limantseva ; K. A. Likhoded</i>	
<b>EFFECT OF OPTICAL AND STRUCTURAL PARAMETERS OF THERMAL BARRIER COATINGS OF THE COMBUSTION CHAMBER ON WORKING PROCESSES OF A DIESEL</b> .....	344
<i>V. G. Merzlikin ; S. V. Smirnov ; A. R. Makarov</i>	
<b>ESTIMATING EFFICIENCY OF USING ADDITIONAL LOW-POWER TURBINES OPERATING IN REGULAR MODES AT NUCLEAR POWER STATIONS</b> .....	350
<i>R. Z. Aminov ; V. E. Yurin</i>	
<b>INFLUENCE OF THE STRUCTURE OF HEAT SOURCES ON ATMOSPHERIC AIR POLLUTION OF HUMAN SETTLEMENTS</b> .....	354
<i>P. Khavanov ; A. Chulenyov</i>	
<b>RESEARCH OF HEAT TRANSFER IN REVERSIBLE FURNACES OF LOW POWER BOILERS</b> .....	358
<i>P. Khavanov</i>	
<b>INTELLIGENT ELECTRO-PNEUMATIC MODULE FOR INDUSTRIAL ROBOTS</b> .....	361
<i>N. Glebov ; T. Kruglova ; M. Shoshiashvili</i>	
<b>THE METHOD OF CONSTRUCTING THE PHASE PORTRAIT OF THE OBJECT</b> .....	365
<i>I. N. Sushkin ; D. E. Korshunov ; R. A. Ruff</i>	
<b>CALCULATION OF CHANGE OF THE ROTORS CENTERING ACCORDING TO THE GEODETIC DATA</b> .....	369
<i>G. A. Ustavich ; V. G. Salnikov</i>	
<b>APPLICATION OF FUZZY MULTI-CASCADE CONTROL DURING MODELING OF UNIVERSAL NON-LINEARITY COMPENSATOR</b> .....	373
<i>D. O. Savelyev ; A. S. Gudim ; S. P. Cherny</i>	
<b>A MODEL OF MULTI-CASCADE FUZZY LOGIC CONTROLLER IMPLEMENTED USING DIFFERENT VARIATIONS OF INFERENCE ALGORITHMS</b> .....	377
<i>S. P. Cherniy ; A. V. Buzikayeva ; A. S. Gudim</i>	
<b>THE W-BAND RADIO-OVER-FIBER SYSTEM WITH THE FULL-OPTICAL CONTROL OF RADIO SIGNAL PARAMETERS</b> .....	381
<i>I. Vinogradova ; G. Abdrakhmanova ; E. Grakhova</i>	
<b>COMPUTER TECHNOLOGY TO ASSESS THE CAPACITY RESERVE OF THE IRRIGATION FACILITIES OF THE AGRO-INDUSTRIAL COMPLEX</b> .....	387
<i>M. A. Bandurin ; I. F. Yurchenko ; I. P. Bandurina</i>	
<b>COMPARISON OF COMPETITIVENESS OF RENEWABLE AND NON-RENEWABLE ENERGY SOURCES IN RUSSIA AND IN EAST ASIAN COUNTRIES</b> .....	392
<i>O. V. Marchenko ; S. V. Podkvalnikov ; S. V. Solomin</i>	
<b>A WEB-ORIENTED APPROACH FOR URBAN ROAD TRAFFIC SIMULATION</b> .....	397
<i>O. K. Golovnin ; K. V. Pupylin ; A. S. Privalov</i>	
<b>VEHICLE DETECTION IN AUDIO RECORDINGS BY MACHINE LEARNING</b> .....	401
<i>O. K. Golovnin ; A. S. Privalov ; K. V. Pupylin</i>	
<b>FAILURE ANALYSIS OF THERMALLY STRESSED PIPELINES OF POWER PLANTS OPERATING IN THE NORTH AND ARCTIC</b> .....	405
<i>S. P. Yakovleva ; S. N. Makharova</i>	
<b>ELECTRIC POWER QUALITY IN THE SINGLE-PHASE POWER SUPPLY NETWORKS OF ELECTRONIC MEANS</b> .....	410
<i>Z. Gizatullin ; M. Shkinderov ; E. Konstantinov</i>	
<b>RESULTS OF THE EXPERIMENTAL STUDIES OF THERMAL PROCESSES IN AN ASYNCHRONOUS MOTOR</b> .....	414
<i>D. Ya. Antipin ; D. A. Bondarenko ; V. I. Vorobiev</i>	
<b>USE OF THE LEAVING CCGT COPPER UTILIZER GASES FOR HEATING OF GREENHOUSE FACILITY</b> .....	419
<i>S. V. Novichkov ; E. Yu. Burdenkova</i>	

<b>STUDYING OF POSSIBLE OPERATING MODES IN GRAPHICS OF ELECTRIC LOADS OF COMBINED HEAT AND POWER PLANTS TAKING INTO ACCOUNT HEAT-SINK PROPERTIES OF THERMAL NETWORKS</b> .....	423
<i>R. Z. Aminov ; E. Y. Burdenkova</i>	
<b>MODERNIZATION OF SETTING FOR SYMMETRICAL OPTIMUM</b> .....	429
<i>V. A. Egorov ; J. G. Egorova</i>	
<b>HEAT PUMP APPLICATION FOR WATER DISTILLATION</b> .....	433
<i>Omar Abdulhadi Mustafa Almohammed ; Nail Farilovich Timerbaev ; Basil Ibraheem Ahmad</i>	
<b>COMMUNICATIONS PAYLOAD UNIFIED ELECTRICAL GROUND SUPPORT EQUIPMENT</b> .....	438
<i>D. Bolshakov ; E. Protsenko ; N. Burdukovskaya</i>	
<b>MANAGEMENT OF THE AGRO-INDUSTRIAL ENTERPRISE: OPTIMIZATION UNCERTAINTY EXPERT ASSESSMENTS</b> .....	444
<i>Y. Ivanyo ; P. Asalkhanov ; N. Bendik</i>	
<b>THERMAL ANALYSIS OF VOLTAGE CONVERTER FOR AUTONOMOUS POWER PLANT</b> .....	450
<i>T. V. Izotova ; K. M. Sidorov ; A. G. Grishchenko</i>	
<b>REDUCING THE RATE OF LOW-TEMPERATURE CORROSION OF REGENERATIVE AIR HEATERS OF STEAM BOILERS</b> .....	456
<i>E. Ibragimov ; V. Trushin ; F. Bakirov</i>	
<b>FUEL CONSUMPTION ESTIMATE OF VARIABLE SPEED DIESEL-GENERATOR UNIT ON THE BASIS OF MATRIX FREQUENCY CONVERTER</b> .....	460
<i>A. Dar'Enkov</i>	
<b>MATRIX CONVERTER U/F CONTROL METHOD FOR ELECTRIC DRIVE OF FLUID-HANDLING APPLICATION</b> .....	465
<i>A. Dar'Enkov ; I. Varygin</i>	
<b>THRESHOLD VALUES DETERMINATION OF PARTIAL DISCHARGES DURING HIGH-VOLTAGE TRANSFORMERS DIAGNOSIS BY ACOUSTIC METHODS</b> .....	470
<i>M. A. Kuznetsova ; A. A. Kuznetsov</i>	
<b>MOBILE ROBOT FOR SMART ENTERPRISE</b> .....	474
<i>D. V. Topolskiy ; I. G. Topolskaya ; I. G. Plaksina</i>	
<b>TOWARDS EFFICIENT IMPLEMENTATION OF CONCURRENT HASH TABLES AND SEARCH TREES BASED ON SOFTWARE TRANSACTIONAL MEMORY</b> .....	478
<i>A. A. Paznikov ; V. A. Smirnov ; A. R. Omelnichenko</i>	
<b>TOWARDS RELAXED CONCURRENT DATA STRUCTURES ON DISTRIBUTED MEMORY COMPUTER SYSTEMS</b> .....	483
<i>A. A. Paznikov ; I. I. Kholod ; A. V. Shorov</i>	
<b>APPLICATION WEIGHTED VORONOI DIAGRAMS TO DETERMINE THE AREAS OF RESPONSIBILITY OF TRANSFORMER SUBSTATION, WITH ACCOUNTING HETEROGENEITY OF LOAD DENSITY</b> .....	489
<i>A. P. Afanasyev</i>	
<b>UNIFIED APPROACH TO BUILDING OF INFORMATION-AND-MEASURING SYSTEM</b> .....	493
<i>O. Isaeva</i>	
<b>STEAM BOILER CONTROL USING NEURAL NETWORKS</b> .....	499
<i>M. Sharipov</i>	
<b>SIMULATION OF AUTOCLAVE OPERATION IN ITHINK SOFTWARE</b> .....	506
<i>E. Muravyova ; S. Shokurov</i>	
<b>SYSTEM OF A REMOTELY CONTROL OF TECHNICAL CONDITION OF COMPLEX ELECTRICAL OBJECTS</b> .....	516
<i>D. M. Shprekher ; E. B. Kolesnikov ; G. I. Babokin</i>	
<b>CONTROL OF THE WELDING PROCESS IN ROBOTIC TECHNOLOGICAL COMPLEXES USING THE SYSTEM DYNAMICS MODEL</b> .....	521
<i>D. S. Fominykh ; V. A. Kushnikov ; A. F. Rezhnikov</i>	
<b>LINEAR INDUCTION MOTORS TRACTIVE FORCE COMPONENTS ANALYSIS WITH REGARD TO THE MOTORS' ELECTROMAGNETIC NO-SYMMETRY</b> .....	527
<i>V. Tiunov</i>	
<b>ELECTRICAL HEATING REACTOR CONTROL SYSTEM USING NEURAL NETWORK AND THE FUZZY CONTROLLER</b> .....	532
<i>E. Muravyova ; I. Almakaev</i>	
<b>AN ARCHITECTURE OF THE TECHNOLOGY PLATFORM FOR COMPUTER MODELING, DESIGN, AND OPTIMIZATION OF INTELLIGENT INTEGRATED ENERGY SYSTEMS</b> .....	538
<i>E. Barakhtenko ; D. Sokolov</i>	

<b>BASIC PRINCIPLES OF AN EXOSKELETON CONSTRUCTION FOR AN ANTHROPOMORPHIC MANIPULATOR CONTROL .....</b>	<b>543</b>
<i>A. A. Bogdanov ; A. F. Permyakov ; I. M. Kutlubayev</i>	
<b>THE USE OF DISCRETE MEYER WAVELET FOR SPEECH SEGMENTATION.....</b>	<b>547</b>
<i>N. A. Leontiev ; A. G. Nyurova</i>	
<b>ESTIMATION OF INDUCED VOLTAGE ON THE DEAD OVERHEAD POWER LINE CAUSED BY ELECTROMAGNETIC INFLUENCE OF THE 25 KV AC ELECTRIC RAILWAY SYSTEM.....</b>	<b>550</b>
<i>O. V. Zalesova</i>	
<b>METHOD INCREASING THE RELIABILITY OF THE SOIL MEASURED SPECIFIC ELECTRICAL RESISTANCE IN THE FIELD.....</b>	<b>554</b>
<i>A. A. Khafizov ; R. S. Akhmetshin ; R. T. Nasibullin ; L. R. Sarimov</i>	
<b>ROBOT MANIPULATORS FOR PLASTERING WORK .....</b>	<b>558</b>
<i>A. Bulgakov ; T. Bock ; J. Otto</i>	
<b>SYNTHESIS OF A FIVE-LINK MECHANISM WITH ROTATIONAL HINGES.....</b>	<b>563</b>
<i>A. G. Mudrov ; R. L. Sakhapov</i>	
<b>PROSPECTIVE COOPERATION BETWEEN THE UNIFIED POWER SYSTEM OF RUSSIA AND ASIAN SUPERGRID .....</b>	<b>568</b>
<i>L. Yu. Chudinova ; S. V. Podkoyalnikov ; I. L. Trofimov</i>	
<b>EFFECT OF THERMAL CYCLIC LOADS ON THE EFFICIENCY OF STEAM TURBINES UNDER HYDROGEN OVERHEATING OF STEAM .....</b>	<b>573</b>
<i>A. N. Egorov</i>	
<b>METHODS OF PRELIMINARY STATIC CALCULATION OF ROBOTIC CENTER FOR DESIGN OPTIMIZATION .....</b>	<b>577</b>
<i>S. I. Anciferov ; E. V. Gaponenko</i>	
<b>NPPS WITH VVER REACTORS: SYSTEM EFFICIENCY OF VARIABLE FREQUENCY DRIVES IN THE MAIN CIRCULATION PUMPS .....</b>	<b>583</b>
<i>V. A. Khrustalev ; M. V. Garievskii</i>	
<b>EVALUATING THE EFFECT OF FREQUENCY REGULATION MODES ON ECONOMIC EFFICIENCY THERMAL POWER PLANTS .....</b>	<b>589</b>
<i>M. V. Garievskii</i>	
<b>METHODOLOGICAL APPROACH TO THE INTEGRATION OF RENEWABLE ENERGY IN ISOLATED POWER SYSTEMS .....</b>	<b>594</b>
<i>A. Tarasov</i>	
<b>MULTI-LAYER, FULLY REVERSIBLE WATERMARKING SCHEME USING ODD-EVEN MODIFICATION OF FOURIER MAGNITUDE .....</b>	<b>598</b>
<i>A. Bahrushin ; G. Bahrushina ; R. Bazhenov</i>	
<b>COMPARATIVE ANALYSIS OF POWER COMPLEX SCHEMES BASED ON A SMALL COMBINED HEAT AND POWER PLANT AND WIND-DRIVEN POWER PLANT .....</b>	<b>605</b>
<i>V. Yu. Ignatov ; Yu. E. Nikolaev</i>	
<b>ON THE DEVELOPMENT OF THE PROGRAM FOR CALCULATION OF OPTIMAL PARAMETERS OF DRILLING PRACTICES .....</b>	<b>609</b>
<i>N. G. Timofeev ; M. S. Popov</i>	
<b>ANALYSIS OF ERRORS IN BOLT JOINT TIGHTENING.....</b>	<b>614</b>
<i>M. A. Bolotov ; I. A. Grachev ; E. V. Kudashov ; D. M. Balyakin</i>	
<b>DEVELOPMENT OF AN AUTONOMOUS WIND POWER SYSTEM .....</b>	<b>619</b>
<i>I. Devederkin ; A. Lysakov ; G. Nikitenko ; S. Antonov ; V. Grinchenko</i>	
<b>CHOOSING THE REINFORCEMENT LEARNING METHOD FOR MODELING DDOS ATTACKS.....</b>	<b>624</b>
<i>P. Cheskidov ; K. Nikolskaia ; A. Minbaleev</i>	
<b>PERIODIC LIMB MOVEMENTS DETECTION THROUGH ACTIGRAPHY SIGNAL ANALYSIS.....</b>	<b>628</b>
<i>A. P. Zaretskiy ; K. S. Mityagin ; V. S. Tarasov ; D. N. Moroz</i>	
<b>REDUCING ELECTRICAL POWER LOSSES WITH THE USE OF COMPENSATION DEVICES.....</b>	<b>633</b>
<i>V. S. Balandin ; Y. G. Neshina ; A. P. Bilichenko</i>	
<b>INSTRUMENTATION AND CONTROL SYSTEM FOR TEST BENCH .....</b>	<b>636</b>
<i>I. Bikmullina ; I. Barkov</i>	
<b>ALGORITHM FOR DATA COLLECTION AND PROCESSING ABOUT LEARNING PROCESS ON TRAINING COMPLEXES.....</b>	<b>642</b>
<i>A. Obukhov ; A. Sidorchuk ; A. Arkhipov</i>	
<b>AUTOMATIC CONTROL SYSTEM OF METHANE-GAS TEMPERATURE FOR COGENERATION POWER STATION .....</b>	<b>647</b>
<i>P. A. Kuznetsov ; Yu. A. Sychev ; B. N. Abramovich</i>	



<b>FUZZY CONTROLLER STRUCTURE TO SOLVE A PROBLEMS OF LOCAL EXTREMA NEAR THE REFERENCE POINTS .....</b>	<b>652</b>
<i>P. Charikov ; R. Kadyrov</i>	
<b>THE METHOD OF REDUCING THE ACTIVE POWER MEASUREMENT ERROR WITH NON-SIMULTANEOUS SAMPLING OF VOLTAGE AND CURRENT .....</b>	<b>656</b>
<i>A. N. Serov ; A. A. Shatokhin ; G. V. Antipov</i>	
<b>ON PROCESSING OF CORRESPONDENCE MATRICES IN TRANSPORT SYSTEMS .....</b>	<b>661</b>
<i>A. Misharin ; D. Namiot ; O. Pokusaev</i>	
<b>EXPERIMENTAL RESEARCH OF AN ARRAY OF GYROSCOPIC SENSORS IN STATIC MODE .....</b>	<b>667</b>
<i>D. A. Oskin ; A. A. Gorhkov ; V. V. Bocharova ; O. S. Gromasheva</i>	
<b>GENERAL-PURPOSE CONTROL SYSTEM ADAPTATION FOR GEAR MILLING TASKS .....</b>	<b>671</b>
<i>S. Sokolov ; R. Pushkov ; S. Evstafieva</i>	
<b>THE APPLICATION OF SERIES ACTIVE FILTER FOR IMPROVEMENT OF POWER QUALITY IN NETWORKS OF OIL ENTERPRISES .....</b>	<b>676</b>
<i>B. N. Abramovich ; A. Sychev Yu. ; R. Yu. Zimin ; M. E. Aladin</i>	
<b>ADAPTIVE TRACKING OF THE RELATIVE ANGULAR VELOCITY OF A CAR TRAILER WHEN REVERSING .....</b>	<b>680</b>
<i>S. P. Kruglov ; R. S. Bolshakov ; S. V. Kovyrshin</i>	
<b>VERIFICATION OF THE METHOD OF MODELING REGENERATING SYSTEMS ON THE EXAMPLE OF MODELING THE PROCESS OF FUNCTIONING THE TECHNICAL SYSTEM WITH DISABLING THE WORKING ELEMENT DURING THE PERIOD OF CONTROL .....</b>	<b>687</b>
<i>M. V. Zamoryonov ; D. V. Zamoryonova ; V. Ya. Kopp ; E. S. Vladimirova</i>	
<b>AUTOMATIC ACCOUNTING OF WORKING HOURS IN SMALL AND MEDIUM ENTERPRISES .....</b>	<b>691</b>
<i>N. Barabanshchikova ; N. Silkina</i>	
<b>DISTRIBUTION DC ELECTRICAL NETWORK WITH POWER ROUTER .....</b>	<b>697</b>
<i>Yu. N. Bulatov ; A. V. Kryukov</i>	
<b>ADVANTAGES AND DISADVANTAGES OF THE DATA COLLECTION'S METHOD USING SNMP .....</b>	<b>702</b>
<i>A. Boyko ; V. Varkentin ; T. Polyakova</i>	
<b>FEATURES OF APPLICATION OF MACHINE LEARNING METHODS FOR CLASSIFICATION OF NETWORK TRAFFIC (FEATURES, ADVANTAGES, DISADVANTAGES) .....</b>	<b>707</b>
<i>E. Nazarenko ; V. Varkentin ; T. Polyakova</i>	
<b>POWER SPECTRAL DENSITY ESTIMATION USING STATISTICAL SMOOTHING OF THE LINEAR DIFFERENCE MODEL PARAMETERS OF THE RANDOM TIME SERIES .....</b>	<b>712</b>
<i>V. N. Yakimov ; A. V. Mashkov ; P. K. Lange ; E. E. Yaroslavkina</i>	
<b>APPROXIMATION METHOD FOR THE PERIODIC SIGNAL RMS MEASURING IN THE PRESENCE OF RANDOM NOISE .....</b>	<b>717</b>
<i>P. K. Lange ; E. E. Yaroslavkina ; V. N. Yakimov</i>	
<b>IMPLEMENTATION OF DECISION SUPPORT SUBSYSTEM IN ELECTRONIC DOCUMENT SYSTEMS USING MACHINE LEARNING TECHNIQUES .....</b>	<b>723</b>
<i>A. Obukhov ; M. Krasnyanskiy ; M. Nikolyyukin</i>	
<b>CONTROL SYSTEM FUNCTIONING ALGORITHM SOFTWARE AND HARDWARE PLATFORM FOR THE TRAINING COMPLEX .....</b>	<b>729</b>
<i>D. Dedov ; A. Siuhin ; A. Volkov</i>	
<b>OPTIMIZATION MODEL OF THERMAL LOADING OF MULTILAYER SHELLS BASED ON THE STRENGTH CRITERION .....</b>	<b>734</b>
<i>I. K. Andrianov</i>	
<b>IMPROVING ARTIFICIAL IRRADIATION AGRICULTURAL PLANT .....</b>	<b>738</b>
<i>V. V. Belov ; A. G. Sveshnikov ; E. D. Idrisova</i>	
<b>THE DEFINITION OF BERGE GRAPH BY INCIDENTOR MATRIX .....</b>	<b>742</b>
<i>V. S. Polyakov ; S. V. Polyakov</i>	
<b>INTELLIGENT STRATEGIES FOR THE WIND CHILL EFFECT ASSESSMENT .....</b>	<b>746</b>
<i>N. Sedova ; R. Bazhenov ; V. Sedov</i>	
<b>DEVELOPMENT AND RESEARCH OF MARKER ISOLATION SCHEMES FROM LOW-FREQUENCY PLC SIGNAL .....</b>	<b>750</b>
<i>S. M. Kopytov ; A. V. Ulyanov</i>	
<b>OPTIMIZATION OF THE COMPOSITION OF THE FUEL MIXTURE OF INDUSTRIAL THERMAL POWER PLANTS .....</b>	<b>754</b>
<i>A. V. Varganova ; M. M. Lygin</i>	
<b>SYNTHESIS OF MODAL PI-REGULATOR WITH MULTIPLE INTEGRATION .....</b>	<b>758</b>
<i>A. I. Gorkaviy ; M. A. Gorkaviy ; M. A. Melnichenko ; Denis B. Solovev</i>	

<b>IT APPLICATION FOR ORGANIZING OF RESEARCH COMPETITIONS .....</b>	<b>763</b>
<i>D. Luchaninov ; R. Bazhenov ; V. Glagolev ; Denis B. Solovev</i>	
<b>THE USE OF GENETIC ALGORITHMS FOR DISTRIBUTION OF TASKS IN GROUPS OF MOBILE ROBOTS WITH MINIMIZATION OF ENERGY CONSUMPTION .....</b>	<b>767</b>
<i>O. V. Darintsev ; A. B. Migranov</i>	
<b>ENGINEERING METHOD OF CALCULATION FOR THE SCRUBBER WITH JET-FILM CONTACT DEVICES.....</b>	<b>773</b>
<i>A. V. Dmitriev ; I. N. Madyshev ; O. S. Dmitrieva</i>	
<b>ANALYSIS OF PARAMETERS AND CHARACTERISTICS OF STORAGE ELEMENTS TO JUSTIFY THEIR EFFECTIVENESS WHEN USING IN SYSTEMS OF UNINTERRUPTABLE POWER SUPPLY OF INDUSTRIAL CONSUMERS .....</b>	<b>778</b>
<i>M. N. Kazantsev ; V. E. Polyakov ; E. G. Nikitina</i>	
<b>QUESTIONS OF CONTROL OF ELECTROPHYSICAL PROPERTIES OF MATERIALS AND STRUCTURES OF MICROELECTRONIC SENSORS .....</b>	<b>783</b>
<i>P. G. Mikhailov ; A. P. Mikhailov ; B. V. Chuvykin</i>	
<b>NUMERICAL SIMULATION OF A HEAT TRANSFER PROCESS IN A 2D IN-LINE TUBE BUNDLE BY MEANS OF RANS TURBULENCE MEODELS .....</b>	<b>789</b>
<i>A. I. Khaibullina ; K. V. Chirukhin ; V. A. Kim</i>	
<b>THE INFLUENCE OF THE SPACE POSITION OF THE STRING CONVERTER ON THE ACCURACY OF FORCES DETERMINATION IN THE REINFORCEMENT OF THE REINFORCED CONCRETE STRUCTURES .....</b>	<b>793</b>
<i>N. Gusev ; E. Tyurin ; A. Kucherenko</i>	
<b>DIGITALIZATION OF RUSSIA'S ELECTRICITY SECTOR .....</b>	<b>798</b>
<i>E. S. Ustinovich ; E. A. Bessonova</i>	
<b>INTELLECTUAL APPROACH TO THE DESIGN OF FUZZY SYSTEMS BASED ON MULTI-OBJECTIVE EVOLUTIONARY MODELING .....</b>	<b>801</b>
<i>S. Kovalev ; A. Kolodenkova</i>	
<b>DATA FUSION AND INDUSTRIAL EQUIPMENT DIAGNOSTICS BASED ON INFORMATION TECHNOLOGY .....</b>	<b>805</b>
<i>A. Kolodenkova ; E. Khalikova ; S. Vereshchagina</i>	
<b>DETECTION AND RECOGNITION OF MANUFACTURING DEFECTS OF RIVET JOINTS BY THEIR VIDEO IMAGES USING DEEP NEURAL NETWORKS .....</b>	<b>810</b>
<i>O. S. Amosov ; S. G. Amosova ; I. O. Iochkov</i>	
<b>RECOGNITION OF ABNORMAL TRAFFIC USING DEEP NEURAL NETWORKS AND FUZZY LOGIC.....</b>	<b>814</b>
<i>O. S. Amosov ; Y. S. Ivanov ; S. G. Amosova</i>	
<b>MODELING OF EFFECTIVE MATERIAL DISTRIBUTION OF STAMPING EQUIPMENT IN FORMING PROCESSES .....</b>	<b>819</b>
<i>I. K. Andrianov</i>	
<b>REDUNDANCY OF NPP'S OWN NEEDS USING HYDROGEN ENERGY COMPLEX .....</b>	<b>822</b>
<i>R. Z. Aminov ; A. N. Egorov ; V. E. Yurin</i>	
<b>OPERATIONAL RELIABILITY ANALYSIS OF THE CYBER-PHYSICAL SYSTEMS VIA ONLINE INDICATOR DIAGRAMS .....</b>	<b>827</b>
<i>V. A. Shikhin ; D. S. Obychaiko ; A. V. Shikhina</i>	
<b>ANALYZING THE QUALITY OF SOFTWARE USED IN OIL REFINING AND PETROCHEMICAL INDUSTRIES .....</b>	<b>833</b>
<i>V. V. Fomina ; T. M. Levina ; A. N. Krasnov</i>	
<b>ADAPTIVE AUTOMATIC DOSING SYSTEM OF HYDRATE FORMATION INHIBITOR INTO THE GAS GATHERING NETWORK.....</b>	<b>838</b>
<i>A. N. Krasnov ; M. Yu. Prakhova ; E. A. Khoroshayina</i>	
<b>THE METHOD FOR DETERMINING THE INSULATION PARAMETERS IN AN ASYMMETRIC NETWORK WITH A VOLTAGE OF UP TO 1000 V .....</b>	<b>843</b>
<i>B. B. Utegulov</i>	
<b>OPTIMIZING THE USE OF EXPERT SYSTEMS BY VARYING DATABASES .....</b>	<b>847</b>
<i>G. V. Redreev ; P. V. Kiyko ; N. V. Shchukina</i>	
<b>RESULTS OF RESEARCH OF EQUIVALENT SYNCHRONOUS ELECTRICAL MACHINES WITH VARIOUS STRUCTURAL DESIGNS .....</b>	<b>851</b>
<i>Y. M. Kashin ; L. E. Kopelevich ; A. S. Knyasev</i>	
<b>MATHEMATICAL MODEL FOR DIAGNOSING ROTOR-DRUM OF RESOURCE SAVING UNIT FOR OIL REFINING.....</b>	<b>856</b>
<i>L. E. Kopelevich ; V. A. Kim ; K. Z. Artyan</i>	

<b>ADJUSTMENT CHARACTERISTICS OF RESOURCE SAVING UNIT FOR OIL REFINING .....</b>	<b>861</b>
<i>B. K. Gaytov ; V. A. Kim ; A. Z. Koryun</i>	
<b>WEAR OF POWER LINES ELEMENTS UNDER ARCTIC CONDITIONS .....</b>	<b>866</b>
<i>V. V. Yaroshevich ; A. S. Karpov ; G. P. Fastiy</i>	
<b>CHALLENGES IN POWER SUPPLY OF THE ARCTIC .....</b>	<b>871</b>
<i>V. V. Yaroshevich ; A. S. Karpov</i>	
<b>DEFINITION OF LEVEL OF NETWORK SECTIONING AT GAS SUPPLY OF POWER ENGINEERING FACILITIES.....</b>	<b>875</b>
<i>A. Klochko</i>	
<b>SPECTRAL ANALYSIS OF ACOUSTIC EMISSION SIGNALS DURING THE CRYSTALLIZATION OF ALUMINIUM WITH THE ALUMINIUM-TITAN-BORON LIGATURE.....</b>	<b>878</b>
<i>A. Bochkarev ; P. Zobnin ; A. Yaroslavkin ; E. Turin</i>	
<b>ALGORITHMIC SUPPORT FOR AUTOMATIC DIAGNOSIS SYSTEM OF TECHNOLOGICAL COMPLICATIONS IN GAS-COLLECTING SYSTEM'S PIPELINES .....</b>	<b>883</b>
<i>S. V. Emets ; V. N. Kudayarov ; M. Yu. Prakhova</i>	
<b>THERMAL MODES OF REFLUX-VAPOR MODELING AND CONTROL OF THE RECTIFICATION PROCESS .....</b>	<b>889</b>
<i>S. A. Gordin ; I. V. Zaychenko ; Sokolova Vera Sergeevna</i>	
<b>INTELLIGENT DEEP NEURO-FUZZY SYSTEM RECOGNITION OF ABNORMAL SITUATIONS FOR UNMANNED SURFACE VEHICLES.....</b>	<b>892</b>
<i>Y. S. Ivanov ; S. V. Zhiganov ; T. I Ivanova</i>	
<b>AUTOMATED LOGIC-MATHEMATICAL MODELING OF RAILWAY AUTOMATION DEVICES TECHNICAL CONDITION .....</b>	<b>898</b>
<i>D. V. Shvalov ; V. A. Kravchenko ; Shirapov D. Sh</i>	
<b>SYNTHESIS OF LUMPED AND DISTRIBUTED CONTROLLERS FOR CONTROL SYSTEM OF HYDRODYNAMIC PROCESS .....</b>	<b>905</b>
<i>M. M. Asadulagi ; G. V. Ioskov ; E. V. Tronina</i>	
<b>LONG-DISTANCE POWER TRANSMISSION WITH DISTRIBUTED LOW LOADS.....</b>	<b>911</b>
<i>G. I. Davydov ; A. M. Khoitunov ; V. P. Kobylin</i>	
<b>INCREASING THE CAPACITY OF THE DOUBLE-CIRCUIT TRANSMISSION LINE IN EMERGENCY MODE .....</b>	<b>915</b>
<i>P. F. Vasilyev ; A. S. Nesterov ; E. I. Maleeva</i>	
<b>THE INVERSE CUMULATIVE CRITERION FOR THE ESTIMATION OF THE ADEQUACY OF THE CHOICE OF THE SIGNAL SAMPLING FREQUENCY AT THE RECORDING OF WAVE AND RESONANT CHANGES OF MECHANICAL AND PHYSICAL FIELDS .....</b>	<b>918</b>
<i>A. V. Sedov ; E. V. Trishechkin</i>	
<b>MEASUREMENTS OF FREQUENCY DEPENDENT SOIL PROPERTIES WITH AN IMPROVED MEASUREMENT DEVICE.....</b>	<b>924</b>
<i>D. Kuklin</i>	
<b>INVESTIGATION OF PRE-SEISMIC SIGNALS OF ELECTROMAGNETIC VLF RANGE EMISSION IN KAMCHATKA.....</b>	<b>930</b>
<i>O. Lukovenkova ; Y. Marapulets ; A. Kim ; A. Tristanov</i>	
<b>SURFACE STATE DETECTION.....</b>	<b>936</b>
<i>E. P. Zharikova ; J. U. Grigoryev ; A. L. Grigoryeva</i>	
<b>EVALUATION OF THE PERFORMANCE OF INFORMATION AND COMPUTER SYSTEMS .....</b>	<b>940</b>
<i>E. M. Kuznetsov ; V. P. Klimanov</i>	
<b>GENERATOR FREQUENCY AS A USEFUL SIGNAL IN DEVICES FOR MEASURING MAGNETIC FIELD STRENGTH BASED ON FLUXGATE SENSORS.....</b>	<b>946</b>
<i>A. Nikishchkin ; L. Dubrovin</i>	
<b>OPTIMIZATION OF COSTS FOR MAINTENANCE OF BACKUP PROCESSES IN THE CONDITIONS OF INCOMPLETE INFORMATION IN INFOCOMMUNICATION SYSTEMS.....</b>	<b>949</b>
<i>I. V. Zaitseva ; E. V. Krakhotkina ; O. A. Malafeyev ; S. I. Lyubaya ; R. V. Kron ; N. V. Poddubnaya</i>	
<b>ANALYSIS OF THE COMPUTATIONAL ASPECTS OF THE APPLIED OPTIMIZATION ALGORITHMS .....</b>	<b>953</b>
<i>I. V. Zaitseva ; E. I. Rubtsova ; O. A. Malafeyev ; I. A. Bogolyubova ; S. A. Sychev</i>	
<b>DEVELOPMENT OF TWO-WHEELED BALANCING ROBOT OPTIMAL CONTROL SYSTEM BASED ON ITS FEEDBACK LINEARIZATION .....</b>	<b>956</b>
<i>A. I. Glushchenko ; K. A. Lastochkin ; V. A. Petrov</i>	
<b>NUMERICAL EVALUATION OF THE TRAFFIC FLOW INDICATORS USING SUPER- RESOLUTION SATELLITE IMAGERY.....</b>	<b>962</b>
<i>I. N. Pugachev ; G. Y. Markelov ; V. S. Tormozov ; A. O. Nosenko</i>	

<b>CONTROL OF HYBRID ELECTRIC ENERGY STORAGE UNIT PARAMETERS IN ELECTRIC TRACTION SYSTEM .....</b>	<b>966</b>
<i>V. L. Nezevak ; A. P. Shatokhin</i>	
<b>METHOD OF NOISE-PROTECTED TRANSMISSION OF TELEMETRIC DATA WITH ADAPTATION TO THE STATE OF THE COMMUNICATION CHANNEL .....</b>	<b>970</b>
<i>A. V. Levenets ; Chye En Un ; I. V. Bogachev</i>	
<b>RESEARCH OF FRICTION TYPE BEARING WITH ZIRCONIUM CERAMICS BUSHING .....</b>	<b>975</b>
<i>V. V. Alisin ; M. N. Roshchin</i>	
<b>ADAPTIVE CONTROL OF THE ROTATIONAL FREQUENCY OF A GAS-TURBINE UNIT WITH ALLOWANCE FOR ELECTRICAL DISTURBANCES .....</b>	<b>979</b>
<i>I. V. Bakhirev ; B. V. Kavalero</i>	
<b>NEURAL NETWORK DECODER OF AUTOMATIC PROCESS CONTROL SYSTEM.....</b>	<b>982</b>
<i>A. I. Koldaev ; D. V. Boldyrev ; A. A. Evdokimov</i>	
<b>IMPLEMENTATION OF CMAC NEURAL NETWORK CONTROL SYSTEMS IN RESIDUE NUMBER SYSTEM.....</b>	<b>986</b>
<i>A. I. Koldaev ; E. E. Tikhonov ; A. A. Evdokimov</i>	
<b>MODELING OF PARALLEL DATA ENCRYPTION ALGORITHMS .....</b>	<b>992</b>
<i>Y. N. Kocherov ; D. V. Samoylenko ; E. E. Tikhonov</i>	
<b>FRAMEWORK FOR BUILDING DATA FLOW DIAGRAMM BASED APPLICATIONS.....</b>	<b>997</b>
<i>I. V. Trubnikov ; O. V. Minakova ; O. V. Kuripta</i>	
<b>STOCHASTIC MODELS AND CALCULATIONS OF DISTRIBUTED COMPUTER SYSTEMS RESERVE SIZE .....</b>	<b>1002</b>
<i>V. A. Pavsky ; K. V. Pavsky</i>	
<b>FINDING THE OPTIMAL PATHS IN A BOOLEAN-VALUED NETWORK .....</b>	<b>1006</b>
<i>E. V. Shcherba ; M. V. Shcherba</i>	
<b>MATHEMATICAL MODELS OF TELECOMMUNICATION SYSTEMS WITH ACOUSTIC FEEDBACK.....</b>	<b>1011</b>
<i>Yu. A. Kropotov ; A. A. Belov ; A. Yu Proskuryakov ; A. A. Kolpakov</i>	
<b>POWER TAKE-OFF DEVICE FROM TRANSMISSION LINE.....</b>	<b>1016</b>
<i>A. M. Khoitanov ; V. P. Kobylin ; E. I. Maleeva</i>	
<b>THE APPLICATION OF ANALOGUE PROCESSORS FOR THE SUPERCAPACITORS OPERATION CONTROL .....</b>	<b>1019</b>
<i>N. L. Dembitsky ; M. N. Ushkar</i>	
<b>DATA EXCHANGE AND PREPROCESSING METHOD FOR A DISTRIBUTED QUARRY MACHINERY CONTROL SYSTEM .....</b>	<b>1023</b>
<i>O. N. Vaneev ; O. A. Ivina ; S. S. Filippov</i>	
<b>AUTOMATIC GENERATION OF NEURAL NETWORK TOPOLOGY TO FORECAST THE INTERNATIONAL INTEGRATION PROCESSES.....</b>	<b>1027</b>
<i>L. Bilgaeva ; E. Sadykova ; V. Filippov</i>	
<b>INTERACTION OF OPTICAL AND ACOUSTIC WAVES IN ACOUSTIC TAPERS OF MOVEMENTS OF INFORMATION MEASUREMENT SYSTEMS.....</b>	<b>1034</b>
<i>M. A. Urakseev ; A. R. Sagadeev ; K. V. Vazhdaev</i>	
<b>HARDWARE-SOFTWARE COMPLEX FOR MODELING AND RELIABILITY ANALYSIS OF SYSTEMS FOR VARIOUS PURPOSES .....</b>	<b>1039</b>
<i>D. Moiseev ; A. Polyakov ; M. Parfentsev</i>	
<b>THE COMPLEX OF OPERATIONS ON CYBERSECURITY IN MAN-MADE OBJECTS.....</b>	<b>1043</b>
<i>R. A. Iureva ; V. O. Popova ; Y. S. Andreev ; M. V. Nikitina</i>	
<b>SIMULATION OF A MODERN ASSEMBLY PLANT.....</b>	<b>1048</b>
<i>R. A. Iureva ; N. S. Kuchenov ; Andreev Yu. S. ; P. D. Vakhviyanova</i>	
<b>OPTIMIZATION OF CALCULATIONS OF THE IMPACT OF EXPLOSIONS OF FUEL-AIR MIXTURES IN CASE OF ACCIDENTS ON LINEAR EQUIPMENT .....</b>	<b>1054</b>
<i>E. A. Saltanaeva ; A. V. Maister</i>	
<b>METHODOLOGY OF PROBABILISTIC REPRESENTATION AND TRANSFORMATION OF INFORMATION .....</b>	<b>1058</b>
<i>D. Moiseev</i>	
<b>CLOSED-CYCLE MICRO GAS-TURBINE SYSTEM WITH OVEREXPANSION TURBINES AND HEAT REGENERATION FOR UNDERWATER APPLICATION .....</b>	<b>1063</b>
<i>V. T. Matviienko ; A. V. Dologlonyan ; A. N. Grekov</i>	
<b>RESEARCH DYNAMICS OF CHANGE OF ELECTROMAGNETIC PARAMETERS OF CONTROLLED SPECIAL ELECTRIC DRIVES .....</b>	<b>1067</b>
<i>V. Yu Karandey ; O. B. Popova ; B. K Popov ; V. L. Afanasyev</i>	

<b>COMPUTER TECHNOLOGIES IN EDUCATIONAL PROCESS OF ELECTRICAL TRAINING OF STUDENTS</b> .....	1072
<i>I. Zabora</i>	
<b>ULTRA-WIDEBAND MOTION CAPTURE RADIO SYSTEM</b> .....	1077
<i>D. Tsaregorodtsev ; A. Chugunov ; N. Petukhov</i>	
<b>DEVELOPMENT OF METHODS AND DIAGNOSTIC TOOLS FOR MEASURING TRANSDUCERS OF AUTOMATION AND CONTROL SYSTEMS</b> .....	1083
<i>A. K. Ozhikhenova ; P. G. Mikhailov ; A. P. Mikhailov</i>	
<b>ANALYSIS OF PARAMETERS OF CHROMATOGRAPHIC MICROCOLUMNS MANUFACTURED BY PRINTING</b> .....	1090
<i>I. A. Platonov ; Vl. I Platonov ; Val I. Platonov</i>	
<b>REFLECTOGRAM PROCESSING FOR THE DIFFERENTIAL METHOD OF DETECTING DAMAGED PTL SITES</b> .....	1096
<i>K. D. Savvina ; V. A. Kuchеров ; S. G. Yanvarev ; K. Y. Solomentsev ; D. D. Savvin</i>	
<b>SATELLITE NAVIGATION OF SMARTPHONES IN RELATIVE MODE</b> .....	1102
<i>N Petukhov ; R Kulikov ; A Chugunov</i>	
<b>THE LINEAR ADJUSTABLE POWER SUPPLY</b> .....	1108
<i>D. Ch. Kim ; P. S. Tatarinov ; A. S. Semenov</i>	
<b>THE CONCEPT OF A SYSTEMS APPROACH TO THE DESIGN OF HIGH-TECH SYSTEMS</b> .....	1113
<i>N. Y. Zhiburtovich</i>	
<b>RECOGNITION OF SITUATIONS DESCRIBED IN THE TEXT OF LEGAL DOCUMENTS</b> .....	1119
<i>L. V. Naykhanova ; I. V. Naykhanova</i>	
<b>ADVANTAGES AND PROBLEMS OF DEVELOPING UNMANNED ONE-WHEEL BALANCING ROBOTS</b> .....	1123
<i>V. Zhmud ; A. Ivoilov ; L. Dimitrov ; H. Roth ; J Nosek ; W. Hardt ; V. Trubin</i>	
<b>THE CONCEPT OF A SMART HOME: SECURITY, ADDITIONAL FEATURES AND AUGMENTED REALITY</b> .....	1130
<i>V. Zhmud ; A. Liapidevskiy ; H. Roth ; J. Nosek</i>	
<b>THE PROCESSING OF THE RESULTS OF DEFORMATION MEASUREMENTS USING EMPIRICAL MODE DECOMPOSITION</b> .....	1138
<i>V. Zhmud ; V. Semibalamut ; L. Dimitrov ; Y. Fomin ; V. Panov</i>	
<b>SYNTHESIS OF OPTIMAL STRUCTURES OF THE MOTION CONTROLLER OF ELASTIC MECHATRONIC SYSTEMS</b> .....	1144
<i>N. K. Kuznetsov ; E. S. Dolgih ; I. A. Iov</i>	
<b>MEASURING WATER CONTENT IN OIL FLOW USING MICROWAVE RADIATION</b> .....	1150
<i>G. N Akhobadze</i>	
<b>ANALYSIS OF THE INFLUENCE OF DESIGN AND MECHANICAL PARAMETERS OF AN ELASTIC ELEMENT FOR OPERATION OF PRIMARY CONVERTERS OF PRESSURE</b> .....	1154
<i>B. V. Tsypin ; D. A. Guliyeva ; E. A. Badeeva</i>	
<b>ESTIMATION OF COOLING CAPACITY OF REAGENT-FREE EVAPORATIVE COOLING TOWER</b> .....	1160
<i>I. N. Madyshev ; A. V. Dmitriev ; A. I. Khafizova</i>	
<b>AN EFFECTIVE AND SIMPLE ADAPTIVE ALGORITHM FOR SHIP COURSE CONTROL SYSTEMS</b> .....	1164
<i>A. A. Dyda ; E. P. Chinchukova ; D. A. Oskin ; A. Monteriù</i>	
<b>NEW TRACTION ELECTRIC TRAM DRIVE WITH A SYNCHRONOUS INDEPENDENT EXCITATION JET MACHINE</b> .....	1170
<i>K. M. Vinogradov ; O. G. Shapovalova ; T. A. Karacharova</i>	
<b>DEVELOPMENT OF DATA EXCHANGE TECHNOLOGY FOR AUTONOMOUS ROBOTS USING A SELF-ORGANIZING OVERLAY NETWORK</b> .....	1175
<i>A. Ermakov ; L. Suchkova</i>	
<b>THE PROSPECTS OF CHEMICAL FUEL CELLS FOR PRIVATE GENERATION</b> .....	1180
<i>A. P. Belkin ; Denis B. Solovev</i>	
<b>STUDY OF SOLAR CELLS AT LOW TEMPERATURES IN THE ARCTIC</b> .....	1184
<i>A. Lagunov ; A. Ladvishchenko ; V. Terekhin</i>	
<b>POTENTIAL ESTIMATION OF TRAIN SPACING WHEN USING RAILWAY SAFETY MANAGEMENT SYSTEMS BASED ON A RADIO CHANNEL</b> .....	1189
<i>L. A. Baranov ; A. I. Godyaev</i>	
<b>NEW APPROACHES TO THE TOPOLOGICAL METHOD OF ANALYSIS OF ELECTRICAL NETWORKS</b> .....	1195
<i>D. S. Akhmetbaev ; A. D. Akhmetbaev ; A. R. Dzhandigulov</i>	

<b>BIOENERGY IN INDUSTRIAL BIOTECHNOLOGY</b> .....	1199
<i>P. E. Balanov ; I. V. Smotraeva ; O. B. Ivanchenko</i>	
<b>IMPROVING THE EFFICIENCY OF SIMULATION OF MACHINE SYSTEMS TO PERFORM SIMULATION TASKS</b> .....	1203
<i>D. Safarov ; A. Kondrashov</i>	
<b>FORMATION OF A MODEL FOR END-TO-END DATA MINING TECHNOLOGY FOR CONSTRUCTION AND PROCESSING OF RAW BIG DATA FOR COMPUTER VISION SYSTEMS</b> .....	1208
<i>A. A. Mikhaylov ; Alatar Ali Ikhsan</i>	
<b>ALGORITHMIC PROFILE OF END-TO-END INFORMATION AND MEASUREMENT TECHNOLOGY CONSTRUCTION AND PROCESSING OF RAW IMAGE</b> .....	1215
<i>A. A. Mikhaylov ; Alatar Ali Ikhsan</i>	
<b>3D MODELING OF LASER ROBOTIC COMPLEX MOTION IN CAM SPACES</b> .....	1222
<i>D. Rodionov ; A. Lyukhter ; V. Prokoshev</i>	
<b>AUTOMATIC LANDING OF A HELICOPTER</b> .....	1228
<i>A. S. Gribanov</i>	
<b>ABOUT THE METHOD OF COMPENSATION OF HARMFUL DISTURBANCES IN A THREE-STEP MICROMECHANICAL GYROSCOPE</b> .....	1234
<i>V. Bogolyubov ; L. Bakhtieva</i>	
<b>PROBABILISTIC EVALUATION OF CHECKPOINT-BASED FAULT TOLERANCE IN REAL-TIME SYSTEMS</b> .....	1238
<i>M. Khlyudova</i>	
<b>OPTIMIZATION OF SERIES MOTOR DRIVE DYNAMICS</b> .....	1242
<i>V. I. Susdorf ; S. P. Cherniy ; A. V. Buzikayeva</i>	
<b>ON THE REDUCING OF THE ACOUSTIC SIGNAL LENGTH FROM THE ELECTROACOUSTIC TRANSDUCERS OF THE SEA ICE MONITORING SYSTEMS</b> .....	1247
<i>B. Ch. Ee ; R. S. Konovalov ; S. I. Konovalov ; A. G. Kuz'Menko ; V. M. Tsaplev</i>	
<b>IMPROVING FILTER-COMPENSATING DEVICES IN POWER SUPPLY SYSTEMS OF MINE HOISTS</b> .....	1253
<i>A. V. Pogorelov</i>	
<b>DESCRIPTION OF NON-GAUSSIAN RANDOM PROCESSES, SIGNALS AND NOISE USING THE STATISTICAL LINEARIZATION METHOD</b> .....	1257
<i>V. M. Artyushenko ; V. I. Volovach</i>	
<b>USING THE CUMULATIVE FUNCTION METHOD TO TRANSFORM NON-GAUSSIAN RANDOM PROCESSES, SIGNALS AND NOISE IN THE DIFFERENTIATING SYSTEMS</b> .....	1264
<i>V. M. Artyushenko ; V. I. Volovach</i>	
<b>DETERMINATION OF THE ERROR OF MEASURING THE SPEED OF AN EXTENDED OBJECT AT A CHANGING RANGE AND TRAJECTORY OF ITS MOVEMENT</b> .....	1269
<i>V. M. Artyushenko ; V. I. Volovach</i>	
<b>SYNTHESIS OF SIGNAL AMPLITUDE-PHASE PROCESSING ALGORITHMS UNDER INFLUENCE OF BAND-LIMITED NON-GAUSSIAN NOISE</b> .....	1274
<i>V. M. Artyushenko ; V. I. Volovach</i>	
<b>DETERMINATION OF THE TECHNICAL SYSTEM'S OPERATING TIME TO FAILURE ON THE BASIS OF THE THEORY OF NONEQUILIBRIUM PROCESSES AND THE PRINCIPLE OF MAXIMUM ENTROPY : AS AN EXAMPLE OF THE ELECTRICAL CONTACTS OPERATION IN MARINE CONDITIONS</b> .....	1280
<i>A. Lickevich ; B. Lobov ; S. Lickevich</i>	
<b>BASICS OF ALGORITHMS INTELLIGENT SYSTEM</b> .....	1285
<i>E. Yu. Rusyaeva ; A. V. Poltavsky ; G. N. Ahobagze</i>	
<b>IDENTIFICATION OF PERMANENT MAGNETS WITH POINT MAGNETIC MOMENTS</b> .....	1291
<i>Yu Bakhvalov ; V Grechikhin</i>	
<b>IMPROVING THE ENERGY EFFICIENCY OF THE OIL WELL ELECTRICAL COMPLEX</b> .....	1295
<i>A Starikov ; V Zhivaeva ; I Kosorlukov</i>	
<b>MODELING AUTOMATIC REGULATION DEVICES OF TEMPERATURE IN ELECTRICAL RESISTANCE FURNACES POWERED BY COMPLEX WAVEFORM CURRENT IN MATLAB SIMULINK</b> .....	1299
<i>E. Ptitsyna ; D. Ptitsyn ; A. Kuvaldin</i>	
<b>THE USE OF ELECTROCHEMICAL ENERGY STORAGES TO LIMIT THE EFFECTS OF SHORT-TERM POWER OUTAGES</b> .....	1303
<i>A Fedotov ; R Misbakhov ; K Bakhteev ; N Chernova</i>	

<b>ENSURING THE EFFICIENCY OF DISTRIBUTION NETWORKS C. DUSHANBE AND REPUBLIC OF TAJIKISTAN .....</b>	<b>1309</b>
<i>A. I. Sidorov ; O. A. Khanzhina ; S. S. Tavarov ; M. S. Osimi</i>	
<b>ENSURING ENERGY EFFICIENCY AND ENVIRONMENTAL FRIENDLINESS OF THE VENTILATION SYSTEMS WITH BATHS WASTEWATER TREATMENT .....</b>	<b>1313</b>
<i>P. Khavanov ; V. Volkov</i>	
<b>NOISE IMMUNITY OF COMPUTER EQUIPMENT WITH DYNAMIC CHANGES IN POWER SUPPLY VOLTAGE.....</b>	<b>1317</b>
<i>R. Gizatullin ; T. Suetina</i>	
<b>APPLICATION OF A HIERARCHICAL APPROACH FOR DETERMINING AN INDIVIDUAL STUDY TRAJECTORY .....</b>	<b>1321</b>
<i>M. Gliznitsa ; N. Silkina</i>	
<b>LINEAR MEASURING PHASE SHIFT MODULE .....</b>	<b>1326</b>
<i>V. Goryachev ; S. Kislyakov ; D. Nefediev ; O. Abdirashev</i>	
<b>CONTROL OF INGOT COOLING WITH MULTIPLE SEQUENTIAL CHANGE IN CASTING SPEED .....</b>	<b>1331</b>
<i>V. I. Dozhdikov ; V. A. Shipulin</i>	
<b>STUDY OF OPTIONS FOR STABILIZING THE PARAMETERS OF A CONVERTER GAS FOR NEW TECHNOLOGICAL POSSIBILITIES FOR ITS USE.....</b>	<b>1333</b>
<i>E. B. Agapitov ; E. G. Neshporenko ; M. S. Sokolova</i>	
<b>IMPLEMENTATION PECULIARITIES OF TRANSITION PROCESSES ANALYSIS ALGORITHMS IN DYNAMIC SYSTEMS BY LAPLACE TRANSFORM .....</b>	<b>1338</b>
<i>E. U. Chye ; A. B. Shein ; K. V. Zneu</i>	
<b>HEAT FLUX IN RADIATION-COOLED FINS .....</b>	<b>1342</b>
<i>E. V. Amosova ; A. O. Ivanov</i>	
<b>DYNAMICS OF THE HETEROGENEOUS FLUID IN THE HEAT-GRAVITATIONAL CONVECTION.....</b>	<b>1347</b>
<i>E. V. Amosova ; A. O. Demin</i>	
<b>HARDWARE AND SOFTWARE IMPLEMENTATION OF NEURAL NETWORK CONTROL OF POWER SYSTEMS BASED ON THE SYSTEM OF RESIDUAL CLASSES.....</b>	<b>1352</b>
<i>E. E. Tikhonov ; K. A. Chebanov ; V. A. Burlyeva</i>	
<b>IMPROVEMENT OF INFORMATION PROTECTION AND DATA TRANSMISSION METHODS IN THE POWER INDUSTRY USING NEURAL NETWORKS AND A SYSTEM OF RESIDUAL CLASSES .....</b>	<b>1357</b>
<i>E. E. Tikhonov ; K. A. Chebanov ; V. A. Burlyeva</i>	
<b>ADAPTATION OF THE WIDEBAND SYSTEM ANTENNA ARRAY DIRECTIONAL PATTERN .....</b>	<b>1362</b>
<i>A. V. Bazhenov ; S. V. Malygin ; N. V. Grivennaya</i>	
<b>ALGORITHM OF DRIVING AN OPERATING CONDITIONS OF POWER DISTRICTS WITH DISTRIBUTED GENERATION BACK IN PERMISSIBLE RANGE.....</b>	<b>1368</b>
<i>P. V. Ilyushin ; A. L. Kulikov</i>	
<b>OPTIMAL CONTROL OF GEAR SHIFTING FOR HYBRID ELECTRIC VEHICLE.....</b>	<b>1373</b>
<i>A. V. Makarov ; V. G. Makarov ; A. Yu. Afanasiev</i>	
<b>METHODOLOGY OF ALTERNATIVE EFFICIENCY ASSESSMENT IN THE MATLAB APPLICATION .....</b>	<b>1377</b>
<i>Puryaev Aidar ; Puryaev Arslan</i>	
<b>DEVELOPMENT OF FAULT DETECTION AND IDENTIFICATION SYSTEM FOR THRUSTERS OF UNDERWATER ROBOTS .....</b>	<b>1383</b>
<i>V. Filaretov ; A. Zuev ; A. Zhirabok</i>	
<b>PARAMETER IDENTIFICATION PROBLEM FOR PILOTLESS SHIP DYNAMICS.....</b>	<b>1389</b>
<i>A. A. Dyda ; E. P. Chinchukova ; E. B. Osokina</i>	
<b>SOFTWARE APPLICATION FOR DETERMINING CONDITIONS OF THE HUMAN- COMPUTER INTERACTION USING FITTS' AND HICK'S LAWS .....</b>	<b>1393</b>
<i>A. A. Popov ; A. O. Kuzmina</i>	
<b>POWER SUPPLY SYSTEM FOR A PACKAGED MAGNETRON WITH SUB- ELECTROMAGNET.....</b>	<b>1399</b>
<i>I. Artyukhov ; A. Zemtsov ; A. Borisenko</i>	
<b>TRANSMISSION OF ELECTRIC ENERGY FROM WIND POWER PLANTS TO THE NETWORK: PATENT SEARCH .....</b>	<b>1405</b>
<i>E. Abbaticchio ; E. Sirotkin ; A. Miroshnichenko</i>	
<b>DIGITAL STABILIZING PULSE SIGNALS ON THE BASE OF THEIR STATE ESTIMATORS UNDER NOISE ENVIRONMENT .....</b>	<b>1410</b>
<i>Yu. S. Bekhtin ; Yu. A. Filatov ; A. A. Lupachev</i>	

<b>SUBSTANTIATION OF BAND LIMITS FOR MEASURING ACOUSTIC SIGNALS OF PARTIAL DISCHARGES IN HIGH-VOLTAGE POWER TRANSFORMERS</b> .....	1417
<i>M. V. Vecherkin ; A. Yu. Lednov</i>	
<b>BENEFITS OF SOLAR POWER PLANTS FOR ENERGY SUPPLY TO CONSUMERS IN MOUNTAIN TERRITORIES</b> .....	1421
<i>R. Klyuev ; O. Gavrina ; M. Madaeva</i>	
<b>RELIABILITY ACCOUNTING FOR HYDRAULIC CALCULATION OF MEDIUM AND HIGH PRESSURE GAS PIPELINES</b> .....	1427
<i>E. Solovyeva</i>	
<b>PROVIDING CONSUMERS WITH DIRECT CONNECTION TO LOW PRESSURE GAS PIPELINES</b> .....	1432
<i>V. Zhila</i>	
<b>FUNDAMENTALS OF ALGORITHMIZATION OF FUNCTIONAL AND COMPUTATIONAL PROBLEMS</b> .....	1436
<i>A. I. Dergachev ; S. A. Dergachev ; A. M. Perepechenov ; M. S Abu-Khasan</i>	
<b>CONTROL SYSTEM OF TENSION DEVICE IN WINDING FABRICS FROM COMPOSITE MATERIALS</b> .....	1440
<i>A. Mikitinskiy ; B. Lobov ; P. Kolpachshan</i>	
<b>MULTI-DRIVE WATER SUPPLY SYSTEM CONTROL BASED ON THE IMPROVED METHOD OF MULTIPLE CRITERIA DECISION-MAKING (MCDM)</b> .....	1444
<i>R. B. Lobov ; P. G. Kolpakhchyan ; V. A. Finochenko</i>	
<b>UNACCOUNTED FOR ENERGY : FIRST-HAND EXPERIENCE</b> .....	1447
<i>Yu. B. Shchemeleva ; A. N. Shchemelev</i>	
<b>INSTRUMENTATION UNIT FOR RAPID DIAGNOSIS OF HUMAN DISEASE</b> .....	1450
<i>V. Petrosyants ; V. Kantur ; A. Lomakin ; V. Statsenko</i>	
<b>ALGORITHM OF TWO TURBOJETS THRUST ASYMMETRY MINIMIZATION FOR DIGITAL CONTROL SYSTEM OF TWIN-ENGINE JET AIRLINER</b> .....	1454
<i>V. M. Novichkov ; A. Yu. Burova</i>	
<b>MODELING AND EVALUATION OF INTRA-SYSTEM INTERFERENCE IN DVB-T2 SINGLE-FREQUENCY NETWORKS</b> .....	1460
<i>A. Lomakin ; V. Petrosyants ; V. Kantur ; V. Statsenko ; G. Stetsenko</i>	
<b>INFORMATION-MEASURING SYSTEM FOR MONITORING AND CONTROL AQUACULTURE OF POND FARM</b> .....	1464
<i>V. E. Kostin ; A. A. Silaev ; A. V. Savchic</i>	
<b>DEVELOPMENT OF INTEROPERABILITY PROBLEM-ORIENTED MODEL FOR UNIVERSITY E-LEARNING SYSTEM (BY THE CASE OF NOSOV MAGNITOGORSK STATE TECHNICAL UNIVERSITY)</b> .....	1468
<i>K. A. Ruban ; I. V. Gavrilova ; T. B. Novikova</i>	
<b>CURRENT DIFFERENTIAL SYSTEM OF CONTROL OF ISOLATION OF CABLE LINES</b> .....	1473
<i>V. I. Biryulin ; D. V. Kudelina ; O. M. Larin</i>	
<b>PROBLEMS AND METHODS FOR INTEGRATING HETEROGENEOUS DATA (ON EXAMPLE, METALLURGICAL PRODUCTION)</b> .....	1477
<i>S. Porshnev ; O. Ponomareva ; A. Borodin ; S. Mirvoda</i>	
<b>ANALYSIS OF CHANGES IN THE THERMOPHYSICAL PARAMETERS OF THE GAS TURBINE UNIT WORKING FLUID DEPENDING ON THE FUEL GAS COMPOSITION</b> .....	1482
<i>G. E. Marin ; D. I. Mendeleev ; A. R. Akhmetshin</i>	
<b>THE IMPLEMENTATION AND USE OF GAS TURBINES WITH ABSORPTION REFRIGERATING MACHINE IN THE TECHNOLOGICAL SCHEMES OF THERMAL POWER PLANTS</b> .....	1486
<i>D. I. Mendeleev ; G. E. Marin ; A. R. Akhmetshin</i>	
<b>WAYS TO COLLECT DISPARATE INFORMATION IN A SINGLE DATA WAREHOUSE AT A MACHINE-BUILDING ENTERPRISE</b> .....	1491
<i>N. Fattakhova ; O. Ponomareva ; A. Kalmykov ; I. Koromyslov</i>	
<b>A SIMPLE ONLINE METHOD FOR DETERMINING THE DIRECTION, SPEED AND THE HEIGHT OF BASE OF THE CLOUDS BY PROCESSING THEIR GROUND-BASED IMAGES</b> .....	1495
<i>A. G. Yakunin</i>	
<b>ENERGY AND DYNAMIC EFFICIENCY OF LINEAR ELECTROMAGNETIC MOTORS WITH ONE WINDING AND WITH GRAVITATIONAL STORAGE</b> .....	1502
<i>V. I. Moshkin ; D. N. Shestakov ; G. G. Ugarov</i>	
<b>UTILIZATION OF LOW-GRADE HEAT IN THE CONCEPT OF DEVELOPMENT OF DISTRIBUTED GENERATION</b> .....	1506
<i>A. S. Korobets ; S. F. Stepanov</i>	



<b>DEVELOPMENT OF BASIC MODEL OF IT ENTERPRISE ARCHITECTURE: AUDIT OF PROBLEMS AND METHODS OF THEIR SOLUTION .....</b>	<b>1510</b>
<i>L. Z. Davletkireeva ; T. B. Novikova ; E. A. Prasolova</i>	
<b>THE USE OF INFORMATION TECHNOLOGY TO MINIMIZE TRAFFIC CONGESTION .....</b>	<b>1515</b>
<i>L. E. Kushchenko ; S. V. Kushchenko ; I. A. Novikov</i>	
<b>HIDDEN DATA TRANSMISSION DURING ORGANIZATIONS INTERACTION .....</b>	<b>1519</b>
<i>A. V. Nikishova ; Umnitsyn M. Yu ; T. A. Omelchenko</i>	
<b>METHOD OF HIGH SPEED CONTROL OF MOVEMENT OF THE 1-DOF MANIPULATOR.....</b>	<b>1524</b>
<i>V Filaretov ; I Gornostaev</i>	
<b>ACOUSTIC METHOD FOR MONITORING LEVEL, DENSITY AND VISCOSITY OF MULTILAYER LIQUIDS IN TANKS .....</b>	<b>1529</b>
<i>S. A. Borminskii ; A. V. Parshina</i>	
<b>ENERGY EFFICIENCY OF TECHNICAL THERMAL INSULATION.....</b>	<b>1535</b>
<i>M. V. Shitikova ; I. I. Popov ; Bobrova E. Yu ; A. D. Zhukov</i>	
<b>THE ORGANIZATION OF GREENHOUSES USING RENEWABLE ENERGY IN THE FAR NORTH .....</b>	<b>1539</b>
<i>E. Slobodchikov</i>	
<b>MODEL-BASED SYSTEMS ENGINEERING OF PROCESS CONTROL FOR ENERGY INSTALLATIONS .....</b>	<b>1542</b>
<i>V Khokhlovskiy ; V Oleinikov</i>	
<b>SAMPLING STRATEGIES FOR CLASSIFICATION-BASED DATA VISUALIZATION SUPPORT .....</b>	<b>1547</b>
<i>R. R. Akhmetvaleev ; I. A. Lakman ; D. V. Popov ; Zagidullin N. Sh</i>	
<b>THE EFFECT OF ACCUMULATION ON THE CHARACTERISTICS OF VIDEO INFORMATION SYSTEMS IN VARIOUS DETECTION MODES .....</b>	<b>1551</b>
<i>A. A. Kamenev ; V. A. Rogachev ; A. A. Mikhailov</i>	
<b>THE COMPENSATION METHOD OF THE SELECTION OF TREND GEOELECTRIC SIGNALS IN THE SYSTEM OF THE GEODYNAMIC MONITORING.....</b>	<b>1555</b>
<i>M. D. Baknin ; O. R. Kuzichkin ; I. A. Kurilov ; D. I. Surzhik</i>	
<b>THE USE OF THE GEOELECTRIC METHOD OF THE EXPRESS CONTROL DURING THE GEOECOLOGICAL MONITORING OF THE DECENTRALIZED WATER SUPPLY .....</b>	<b>1559</b>
<i>R. V. Romanov ; O. R. Kuzichkin ; G. S. Vasiliev ; E. S. Mikhaleva</i>	
<b>THE DETERMINATION OF MUSCULOSKELETAL DISORDERS BASED ON AUTOMATED PROCESSING OF GONIOMETRIC SIGNALS.....</b>	<b>1564</b>
<i>N. V. Dorofeev ; A. V. Grecheneva ; O. R. Kuzichkin</i>	
<b>STATUS AND PROSPECTS OF DEVELOPMENT VACUUM HIGH VOLTAGE COMMUTING, DEVICES FOR MODERN ELECTRONIC SYSTEMS .....</b>	<b>1568</b>
<i>A. N. Litvinov ; D. V. Deryabin ; A. A. Akimov</i>	
<b>AUTOMATIC CONTROL OF HOT WATER SUPPLY SYSTEM ON SOLAR COLLECTORS .....</b>	<b>1573</b>
<i>S. V. Prokhorov ; Y. O. Krivoshein ; A. A. Shilin</i>	
<b>DETECTION OF FOREST FIRES BASED ON AERIAL SURVEY DATA USING NEURAL NETWORK TECHNOLOGIES.....</b>	<b>1579</b>
<i>V. Golodov ; A. Buraya ; V. Bessonov</i>	
<b>AN OBJECT-ORIENTED DESIGN OF EXPERT SYSTEM SOFTWARE FOR EVALUATING THE MAINTENANCE OF LINED EQUIPMENT .....</b>	<b>1585</b>
<i>V. A. Yemelyanov ; A. A. Nedelkin ; L. A. Olenev</i>	
<b>RESEARCH OF DIGITAL ALGORITHMS IMPLEMENTING INTEGRATED MELLIN TRANSFORM FOR SIGNAL PROCESSING IN AUTOMATED CONTROL SYSTEMS .....</b>	<b>1589</b>
<i>A. Makarov ; S. Postovalov ; A. Ermakov</i>	
<b>EVALUATION OF THE SAFE OPERATION TIME OF CENTRIFUGAL PUMPS ON THE SELECTION OF DETERMINING PARAMETERS OF THE TECHNICAL CONDITION AFFECTING THE RESIDUAL RESOURCE .....</b>	<b>1595</b>
<i>P. A. Kulakov ; A. V. Rubtsov ; V. G. Afanasenko</i>	
<b>EVALUATION OF RULE FORMATION ALGORITHM FOR VERIFICATION OF BUILDING INFORMATION MODELS .....</b>	<b>1600</b>
<i>E. Makisha</i>	
<b>CLASSIFICATION OF TYPES OF VERIFICATION FOR BUILDING INFORMATION MODELS.....</b>	<b>1605</b>
<i>E. Makisha</i>	
<b>APPLICATION OF BLOCKCHAIN COMPUTER TECHNOLOGY TO TRACE THE CAUSES OF DEFECTS IN THE SUPPLY CHAINS OF ENGINEERING PRODUCTS.....</b>	<b>1609</b>
<i>D. T. Safarov ; A. I. Gimazetdinov</i>	
<b>ENERGY LOSS ASSESSMENT ON HEAT NETWORKS IN THE FAR NORTH.....</b>	<b>1616</b>
<i>A. Kolodeznikova ; V. Ivanov ; A. Stepanov</i>	

<b>LIGHTNING ACTIVITY IN REPUBLIC OF SAKHA (YAKUTIA) BY THE DATA OF WORLD WIDE LIGHTNING LOCATION NETWORK IN 2009-2018.....</b>	1621
<i>L. Tarabukina ; V. Kozlov ; R. Karimov</i>	
<b>INVESTIGATION OF THE EFFICIENCY OF A COGENERATION GAS TURBINE UNIT WITH HEAT RECOVERY OF FLUE GASES IN THE FAR NORTH.....</b>	1626
<i>A. M. Kler ; E. L. Stepanova</i>	
<b>INFLUENCE OF TECHNOLOGICAL PARAMETERS ON THE PHYSICAL-MECHANICAL CHARACTERISTICS OF WOOD-COAL FUEL BRIQUETTES.....</b>	1630
<i>T. M. Solovev ; L. A. Nikolaeva ; S. N. Popov</i>	
<b>DEVELOPMENT OF A PROTOTYPE SENSOR BASED ON GRAPHENE OXIDE FOR BUILDING A THREE-DIMENSIONAL DIGITAL TEMPERATURE MAP ON THE ROS PLATFORM.....</b>	1635
<i>S. O. Semenov ; A. S. Andreev ; E. P. Neustroev</i>	
<b>APPLICATION OF A HALF-WAVE POWER TRANSMISSION LINES AS A PART OF THE UNEG OF THE EAST OF RUSSIA.....</b>	1639
<i>A. M. Khoiutanov ; M. A. Rozhina ; P. F. Vasilyev</i>	
<b>AN ANALYSIS OF THE STRUCTURE OF ELECTRICITY AND HEAT SUPPLY SUBSIDIES IN THE ARCTIC ZONE OF THE REPUBLIC OF SAKHA (YAKUTIA).....</b>	1643
<i>A. K. Izhbuldin ; T. V. Dobrovolskaya</i>	
<b>ASSESSMENT OF FEASIBLE POWER SUPPLY OPTIONS FOR NEW PROJECTS IN THE ARCTIC ZONE OF THE REPUBLIC OF SAKHA (YAKUTIA).....</b>	1647
<i>I. Yu. Ivanova ; A. G. Korneev ; T. F. Tuguzova</i>	
<b>SCHEDULE OF THE TOTAL SUM OF LOADS FROM ELECTRICAL BROODERS WITH THE TWO-POSITION TEMPERATURE REGULATORS.....</b>	1652
<i>D. E. Afanasyev ; Roza P. Li-Fir-Su</i>	
<b>APPLICATION OF CORRELATION METHODS FOR TRAVELING WAVE FAULT LOCATING AND AUTOMATION OF INTELLIGENT ELECTRICAL NETWORKS.....</b>	1657
<i>A. Kulikov ; Loskutov Aleksey ; Loskutov Anton ; P. Pelevin</i>	
<b>OVERHEAD POWER LINE WITH BACKUP SPLIT-PHASE.....</b>	1663
<i>P. F. Vasilyev ; A. S. Nesterov ; A. M. Khoiutanov</i>	
<b>CALCULATION OF HEAT TRANSFER IN CONDENSING BOILERS.....</b>	1667
<i>A. Chulenyov</i>	
<b>MODERNIZATION OF AN ELECTRONIC CONTROL MODULE AND RESEARCH OF HEATING TEMPERATURE OF A COILS WIRE OF AN ELECTROMAGNETIC HAMMER FOR DESTRUCTION OF BOULDERS.....</b>	1671
<i>K. Vasin ; Ye. Yedygenov ; Aldiyarov N ; Voronin V</i>	
<b>THE SURFACE TEMPERATURE CALCULATION FOR THE SINGLE-PHASE AUTOTRANSFORMERS TANK: TAKING INTO ACCOUNT ITS DESIGN FEATURES.....</b>	1674
<i>I. Gorokhov ; D. Kretov</i>	
<b>SYSTEMIC EFFECT MODELING IN MULTIFACTORIAL PROBLEMS.....</b>	1679
<i>I. A. Ikonnikova</i>	
<b>CONCRETE COMPRESSIVE STRENGTH ANALYSIS USING TREE-BASED METHODS.....</b>	1683
<i>J. L. Yunani</i>	
<b>ISSUES FOR VIRTUAL SIMULATION OF COMPLEX ASSEMBLIES.....</b>	1687
<i>M. A. Bolotov ; V. A. Pechenin ; D. M. Balyakin</i>	
<b>SIMULATION OF THE PROFIT FROM URBAN ELECTRICAL TRANSPORT SERVICES.....</b>	1692
<i>V. V. Ilyushchenko</i>	
<b>AUTOMATION OF DEMOGRAPHIC INDICATORS CALCULATION AND FORECASTING MIGRATION OUTFLOWS.....</b>	1697
<i>E. Chernova ; O. Indenko ; V. Meshechkin</i>	
<b>PROSPECTS FOR THE DEVELOPMENT OF COAL EXPORTS OF REPUBLIC OF SAKHA (YAKUTIA).....</b>	1703
<i>N. V. Pavlov ; L. N. Takayshvili</i>	
<b>RESEARCH OF PROPERTIES OF WOOD BIOMASS PROCESSING LIQUID PRODUCTS AS AN ALTERNATIVE FUEL FOR ENERGY PURPOSES.....</b>	1707
<i>A. M. Kasimov ; A. R. Sadrtidinov ; V. G. Gusev</i>	
<b>PROVIDING THE RELIABILITY OF HEATING OF PROSUMERS TAKING INTO ACCOUNT THE FUNCTIONING OF THEIR OWN HEAT SOURCES IN DISTRICT HEATING SYSTEMS.....</b>	1712
<i>I. Postnikov</i>	
<b>CONCEPT OF MODELING AND OPTIMIZATION OF RELIABILITY OF COMPLEX SYSTEM BY MINIMUM RISK CRITERION.....</b>	1719
<i>Yu. Vasilkov ; V. Sovetov ; S. Ignatiev ; A. Timoshenko</i>	

<b>SUBSTANTIATION OF THE DATABASE STRUCTURE TO SOLVE FORECASTING OF THE TECHNICAL CONDITION OF THE INTEGRATED RADAR SYSTEMS</b> .....	1724
<i>N. Dudakov ; A. Perlov ; V. Blagenkov ; A. Kochkarov</i>	
<b>LIGHTING MANAGEMENT FOR WORKPLACES WITH DISPLAYS</b> .....	1728
<i>A. V. Kudryashov ; J. A. Yarmolchik ; A. S. Kalinina</i>	
<b>ULTRA-WIDEBAND ABSORBER BASED ON PRINTED RESONANCE FREQUENCY-SELECTIVE SURFACES WITH LUMPED LOSSES</b> .....	1733
<i>Yu. G. Pasternak ; S. M. Fedorov ; V. V. Glotov ; A. F. Latypova ; V. I. Chuguevskiy ; T. S. Glotova</i>	
<b>CALCULATION OF PARAMETERS ASYNCHRONOUS GENERATOR WITH STATOR WINDING CONNECTED IN THE STAR-DELTA</b> .....	1736
<i>N. S. Barakin ; K. A. Gar'Kavyi ; A. A. Kumeiko</i>	
<b>THE METHOD OF METAL SCRAP FRAGMENTS FUNCTION CONSTRUCTION OF THE POURED BULK DENSITY IN MELTING FACILITIES WORKSPACE</b> .....	1741
<i>V. E. Oshurkov ; O. S. Logunova ; A. V. Lednov</i>	
<b>PREDICTION OF THERMODYNAMIC PROCESSES IN INSULATING MATERIALS OF CABLE ELECTRIC POWER SYSTEMS</b> .....	1746
<i>M. N. Dubyago ; N. K. Poluyanovich ; A. A. Shurykin</i>	
<b>STUDY OF THE THYRISTOR VOLTAGE REGULATOR EFFECT ON DISTRIBUTION ELECTRIC NETWORK NONINSULIDALITY</b> .....	1751
<i>V. Semenov ; M. Gnenik</i>	
<b>HARDWARE AND SOFTWARE SYSTEM OF AN ANDROID ASSISTANT FOR TEACHERS: STUDENT EMOTION RECOGNITION SUBSYSTEM</b> .....	1755
<i>M. F. Stepanov ; A. K. Kuzmin ; O. N. Dolinina</i>	
<b>HARDWARE AND SOFTWARE SUBSYSTEM FOR ANDROID-ASSISTED LOCALIZATION OF EPILEPTIC ACTIVITY</b> .....	1759
<i>M. F. Stepanov ; N. M. Yakovlev ; V. A. Krysko</i>	
<b>DEVELOPMENT OF A SOFTWARE AND HARDWARE ANTHROPOMORPHIC ROBOTIC APPLIANCE INTERACTING WITH A STUDENT BY MEANS OF ELECTROENCEPHALOGRAPHIC SIGNALS FOR TEACHERS</b> .....	1764
<i>V. Yu. Musatov ; I. V. Egorov ; S. V. Pchelintseva</i>	
<b>CHANGES IN THE ENERGY OF THE WORLD AND NORTH-EAST ASIA</b> .....	1768
<i>N. A. Petrov ; N. N. Petrova</i>	
<b>THE ISSUE OF ELECTRICITY SUBSIDIZING IN THE ARCTIC ZONE OF SAKHA REPUBLIC (YAKUTIA)</b> .....	1775
<i>A. E. Ivanova ; V. E. Zakharov ; T. N. Petrova</i>	
<b>APPROACH TO ASSESSING THE POSSIBILITY OF FUNCTIONING OF CNC AND PAC SYSTEMS ON VARIOUS SOFTWARE AND HARDWARE PLATFORMS</b> .....	1779
<i>I. A. Kovalev ; R. A. Nezhmetdinov ; P. A. Nikishechkin</i>	
<b>THE METHOD OF SELECTING THE BEST TECHNICAL SYSTEM BY THE SET OF CHARACTERISTICS</b> .....	1784
<i>I. Kafiev ; P. Romanov ; I. Romanova</i>	
<b>DESIGNING OF MECHANISMS WITH THE USE OF SOFTWARE COMPLEX SYSTEMS ON THE SAMPLE OF CHAIN DRIVE CALCULATION</b> .....	1790
<i>A. R. Sadrtidinov ; V. A. Saldaev ; A. A. Fomin</i>	
<b>DYNAMIC LOAD SIMULATION OF THE EXCAVATOR HYDRAULIC DRIVE</b> .....	1795
<i>I. V. Dudanov ; A. G. Lenitsev ; A. S. Fadeev</i>	
<b>ASSESSMENT OF THE CONFLICT STABILITY OF INFORMATION SYSTEMS USING MATHEMATICAL MODELING</b> .....	1799
<i>N. Goncharov ; I. Goncharov ; A. Dushkin</i>	
<b>PERSPECTIVE DIRECTIONS OF THE DEVELOPMENT OF ELECTRIC TRANSPORTS' ELECTRIC DRIVE</b> .....	1804
<i>K. T. Tergemes ; Y. Z. Amangaliyev ; A. R. Karassayeva</i>	
<b>FEATURE SELECTION IN THE CLASSIFICATION OF NETWORK TRAFFIC FLOWS</b> .....	1809
<i>A. Pasyuk ; E. Semenov ; D. Tyuhtyaev</i>	
<b>ANALYSIS AND DEVELOPMENT OF CONTROL ALGORITHMS TO INCREASE A TRACKLESS VEHICLE DRIVING RANGE</b> .....	1814
<i>N. Popov ; E. Kitova ; V. Anosov ; M. Vilberger</i>	
<b>THE INCREASE OF THE EFFECTIVENESS OF THE SYSTEM OF SOLAR HEAT SUPPLY</b> .....	1819
<i>S. K. Sheryzov ; A. H. Doskenov</i>	
<b>MONITORING COMPLEX INFRASTRUCTURE FACILITIES STATE USING MOBILE ROBOTS: PROBLEM ANALYSIS</b> .....	1825
<i>Y. V. Dubenko ; D. A. Gura ; E. E. Dyshkant</i>	

<b>COMPARATIVE ANALYSIS OF REFERENCE TRANSFER FUNCTIONS OF CONTROL SYSTEMS .....</b>	<b>1831</b>
<i>V. I. Lovchakov ; A. E. Solovyov ; O. A. Sibyakin</i>	
<b>COMPUTATIONAL HYDRODYNAMICS IN AIR FLOWS MODELING: USING THE UNREAL ENGINE BASED ON THE NUMERICAL SOLUTION OF THE NAVIER-STOKES EQUATIONS .....</b>	<b>1834</b>
<i>P. V. Yudin ; M. I. Fedina ; E. V. Strizh ; O. V. Yudina ; Khomotiuk V</i>	
<b>IMPROVING THE METHODS FOR REPRODUCING TRIGONOMETRIC FUNCTIONS IN INFORMATION-MEASURING SYSTEMS .....</b>	<b>1843</b>
<i>S. N. Zhiganov ; K. V. Mikheev ; E. A. Zhiganova</i>	
<b>CALCULATION OF THE FIXED POINTS OF THE DESIRED DYNAMIC MODES FOR THE CONVERTERS WITH SINUSOIDAL UNIPOLAR REVERSIBLE MODULATION .....</b>	<b>1847</b>
<i>A. I. Andriyanov ; A. A. Malakhanov</i>	
<b>THE SYNTHESIS OF BALANCING ELECTRICAL COMPLEXES CIRCUITS FOR INDUCTION-RESISTIVE ELECTRICAL HEATING SYSTEMS.....</b>	<b>1854</b>
<i>E. M. Kostolomov ; G. A. Hmara ; S. A. Potapov</i>	
<b>PERFORMANCE EVALUATION OF FIRST HOP REDUNDANCY PROTOCOLS FOR A COMPUTER NETWORKS OF AN INDUSTRIAL ENTERPRISE .....</b>	<b>1860</b>
<i>A. Zemtsov</i>	
<b>ON THE POSSIBILITY TO SOLVE THE PROBLEMS OF ELECTRICAL POWER SUPPLY TO AUTONOMOUS CONSUMERS BY USING RENEWABLE ENERGY SOURCES .....</b>	<b>1865</b>
<i>A. Miroshnichenko ; E. Sirotkin ; E. Bodrova</i>	
<b>APPLICATION OF ENTROPY FILTER IN THE ANALYSIS OF X-RAY IMAGES.....</b>	<b>1871</b>
<i>N. A. Likhachov ; A. V. Likhachov</i>	
<b>RENEWABLE LOW-POTENTIAL THERMAL ENERGY INVESTIGATION OF WATER BODIES .....</b>	<b>1876</b>
<i>S. K. Sheryazov ; O. S. Ptashkina-Girina ; O. A. Guseva</i>	
<b>CONTROL AND MANAGEMENT OF THE DEVELOPMENT DEGREE OF THE ELECTRIC ARC IN THE ORE-THERMAL FURNACE .....</b>	<b>1882</b>
<i>V. V. Vasilev</i>	
<b>CONCEPTUAL MODEL OF USING PATTERN RECOGNITION IN MECHATRONICS .....</b>	<b>1886</b>
<i>V. Ruchkin ; G. Soldatov ; Denis B. Solovev</i>	
<b>THE DEVELOPMENT OF FAULT DETECTION AND IDENTIFICATION SYSTEMS FOR UNDERWATER MANIPULATORS .....</b>	<b>1889</b>
<i>A. Zuev ; A. Protsenko ; A. Zhirabok</i>	
<b>A MULTI-MODEL SYSTEM OF INTELLIGENT UNMANNED SURFACE VEHICLES FOR ENVIRONMENTAL MONITORING.....</b>	<b>1893</b>
<i>I. E. Shishkin ; A. N. Grekov ; N. A. Grekov</i>	
<b>COMPRESSED AIR DRYING PROCESS ENERGY CONSUMPTION DECREASE BY INTELLECTUAL MANAGEMENT SYSTEMS IMPLEMENT .....</b>	<b>1899</b>
<i>T. Ripol-Saragosi ; L. Ripol-Saragosi</i>	
<b>SYNTHESIS OF A GREENHOUSE TEMPERATURE CONTROL SYSTEM.....</b>	<b>1905</b>
<i>V. I. Domanov ; A. V. Domanov ; E. V. Pevcheva</i>	
<b>DEVELOPMENT A SIMULATION MODEL OF AUTOMATIC LOCOMOTIVE SIGNALING CONTINUOUS TYPE OF ACTION .....</b>	<b>1910</b>
<i>A. A. Onischenko ; I. V. Chernykh</i>	
<b>METHOD OF ASSESSING REGIONS OF CONTROLLED BALANCE IN INFORMATION AND TELECOMMUNICATIONS NETWORK.....</b>	<b>1914</b>
<i>S. A. Bagretsov ; O. S. Lauta ; A. I. Klimenko ; E. G. Balenko</i>	
<b>METHOD OF PROVIDING RATIONALE FOR REASONABLE NUMBER OF BACKUP COMMUNICATION CHANNELS IN INFORMATION &amp; TELECOMMUNICATION NETWORK .....</b>	<b>1919</b>
<i>S. A. Bagretsov ; O. S. Lauta ; A. I. Klimenko ; E. G. Balenko</i>	
<b>METHOD FOR PROVIDING RATIONALE OF BASIC OPTION OF INFORMATION AND TELECOMMUNICATION NETWORK UNDER HOSTILE ACTION .....</b>	<b>1925</b>
<i>S. A. Bagretsov ; O. S. Lauta ; A. I. Klimenko ; E. G. Balenko</i>	
<b>NEURAL NETS TO DETECT ABNORMAL TRAFFIC IN COMMUNICATION NETWORKS .....</b>	<b>1932</b>
<i>I. I. Mikhail ; S. Kh. Kireev ; A. I. Klimenko ; E. G. Balenko</i>	
<b>THE MULTI-MOTOR ASYNCHRONOUS ELECTRIC DRIVE OF THE COORDINATED ROTATION IN CASE OF ASYMMETRICAL POWER SUPPLY .....</b>	<b>1935</b>
<i>Tergemes Kazhybek Tleugaliuly</i>	
<b>DIFFERENTIAL FIBER OPTIC SENSOR BASED ON BRAGG GRATINGS .....</b>	<b>1940</b>
<i>M. A. Urakseev ; K. V. Vazhdaev ; A. R. Sagadeev</i>	

<b>FINDING AN AREA OF ACCEPTABLE OSCILLABILITY IN A SPACE OF UNCERTAIN PARAMETERS OF A CONTROL SYSTEM.....</b>	1944
<i>S. An. Gayvoronskiy ; T. Ezangina ; I. Khozhaev</i>	
<b>GUARANTEEING DESIRED DYNAMICS OF MOTION CONTROL SYSTEM OF UNMANNED UNDERWATER VEHICLE DESPITE DISTURBANCES AND INTERVAL PARAMETRIC UNCERTAINTY .....</b>	1949
<i>S. An. Gayvoronskiy ; T. Ezangina ; I. Khozhaev</i>	
<b>COMPARISON OF ELECTRIC POWER CONTRACTS IS USING THE EXAMPLE OF A LOW POWERED CONSUMER OF THE CENTRAL ENERGY AREA OF THE REPUBLIC OF SAKHA (YAKUTIA).....</b>	1953
<i>S. S. Vasilev</i>	
<b>TO THE ISSUE OF THE DEVELOPMENT OF PARTIAL DISCHARGE THEORY.....</b>	1958
<i>N. V. Kinsht ; N. N. Petrunko ; N. V. Silin ; S. Y. Tetiora</i>	
<b>WIRELESS BROADBAND ACCESS TECHNOLOGY FOR BUILDING OF COMMUNICATION AND DATA TRANSFER NETWORKS OF VESSEL TRAFFIC MANAGEMENT SYSTEM .....</b>	1962
<i>I. S. Skvarnik ; O. I. Sovkova ; L. G. Statsenko</i>	
<b>SCALABLE SYSTEM WITH ROGOWSKI COIL FOR E-MANAGEMENT OF DETECTION AND MEASUREMENT OF PLC INTERFERENCE IN ELECTRIC POWER GRIDS .....</b>	1967
<i>M. Habrych ; B. Miedzinski ; G. Wisniewski ; A. Lisowiec ; P. Michalski ; Denis B. Solovev</i>	
<b>APPLICATION OF EXPERIMENT PLANNING METHODS FOR BUILDING A NETWORK OF DIGITAL TELEVISION BROADCASTING OF DVB-T2 STANDARD .....</b>	1974
<i>P. N. Anisimov ; D. A. Kuzin ; L. G. Statsenko ; A. F. Lomakin ; M. M. Streltsova</i>	
<b>MATLAB FOR SIMULATION-BASED INNOVATION PERFORMANCE ASSESSMENT.....</b>	1979
<i>Denis B. Solovev ; S. S. Kuzora</i>	
<b>DATA ACQUISITION TECHNOLOGIES AND SYSTEM FOR AUTOMATING, RECORD-KEEPING AND MANAGING WATER SUPPLY PROCESSES.....</b>	1982
<i>S. A. Bagretsov ; O. S. Lauta ; A. I. Klimenko ; E. G. Balenko</i>	
<b>TECHNIQUE OF INFORMATION AND TELECOMMUNICATIONS NETWORK SYNTHESIS UNDER COMPREHENSIVE HOSTILE ACTIONS.....</b>	1986
<i>I. I. Mikhail ; O. S. Lauta ; A. I. Klimenko ; E. G. Balenko</i>	
<b>ANALYSIS OF MULTICORE NEURAL PROCESSING STRUCTURES BASED ON HARDWARE AND SOFTWARE CO-DESIGN .....</b>	1991
<i>V. Ruchkin ; E. Ruchkina ; V. Fulin</i>	
<b>AUTOMATION OF MANAGEMENT FUNCTIONS OF OPERATIONAL PERSONNEL OF RAILWAY STATIONS .....</b>	1997
<i>K. E. Kovalev ; O. P. Kizlyak ; J. E. Galkina</i>	
<b>STUDY OF THE EFFECT OF INERTIA OF THE POWER FLUID ON THE OPERATING PARAMETERS OF A HYDRAULIC HAMMER.....</b>	2002
<i>A. S. Trubin ; Y. N. Kamanin ; A. V. Panichkin ; K. V. Aksenov</i>	
<b>RAISING OF RELIABILITY OF HEAT-GENERATING ELECTROMECHANICAL DEVICES.....</b>	2006
<i>K. K. Kim ; S. N. Ivanov</i>	
<b>A MATHEMATICAL MODEL FOR ELECTRODYNAMIC PROPERTIES EVALUATION OF HOMOGENEOUS MATERIAL WITH PLANE BOUNDARIES AND ITS APPLICATION FOR IONOSPHERIC DISTURBANCES DIAGNOSTICS .....</b>	2011
<i>A. R. Murlaga ; G. V. Ershov</i>	
<b>OPTIMIZING THE IN-HOUSE POWER-PLANT USAGE OF INDUSTRIAL USERS FOR CASE OF CHANGING ENERGY PURCHASE PRICES .....</b>	2015
<i>A. V. Malafeev ; V. S. Shcherbakova</i>	
<b>THE USE OF MATHEMATICAL LOGIC IN THE AUTOMATED DECODING OF IMAGES .....</b>	2021
<i>Yu. N. Mironova</i>	
<b>DECISION SUPPORT FOR THE WINDFARMS SITING BASED ON MULTI-ATTRIBUTE ANALYSIS AND AERODYNAMIC MODELING .....</b>	2026
<i>V. A. Shakirov ; Yu. A. Artemyev ; A. S. Nefedov</i>	
<b>METHOD OF MOIST WOOD WASTE DRYING FOR THE PURPOSE OF GENERATING ELECTRICITY .....</b>	2032
<i>K. V. Osintsev ; O. G. Brylina ; D. V. Rastvorov</i>	
<b>METHOD OF USING EXHAUSTED GASES FOR THE COMPRESSED CARBON DIOXIDE AND ELECTRICITY GENERATION .....</b>	2036
<i>K. V. Osintsev ; M. M. Dudkin ; Yu. S. Prikhodko</i>	
<b>USING SLIDING MODE IN NONLINEAR EXTREMUM SEEKING SYSTEM.....</b>	2040
<i>G. A. Frantsuzova</i>	

<b>IN-MOTION ADJUSTMENT OF BEACON-BASED OBSERVING SYSTEM WITH RESPECT TO TRAJECTORY MEASUREMENTS .....</b>	<b>2045</b>
<i>V. Grinyak ; Y. Ivanenko ; A. Devyatishnyi</i>	
<b>MATHEMATICAL MODELING OF POWER GENERATION FROM DAY-NIGHT TEMPERATURE DROP USING NEURAL NETWORKS AND ARTIFICIAL INTELLIGENCE .....</b>	<b>2052</b>
<i>V. A. Cheluhin ; M. S. Krujaev ; E. V. Abramson ; Piei Zon Aung</i>	
<b>MOTION CONTROL OF THE ROBOTIZED PIPE-LAYING CRANE ON A SPECIFIED COURSE .....</b>	<b>2056</b>
<i>I. S. Shoshiashvili ; M. E. Shoshiashvili</i>	
<b>RESEARCH CONDUCTIVITY RANGES OF RECRYSTALLIZED LAYERS FOR TELLURIDE CADMIUM .....</b>	<b>2060</b>
<i>L. A. Marushin ; D. A. Tikhonova</i>	
<b>INDUCTIVE-CAPACITIVE CONVERTERS FOR HIGH-VOLTAGE SECONDARY POWER SUPPLIES .....</b>	<b>2063</b>
<i>S. G. Konesev ; R. V. Kirillov ; R. T. Khazieva</i>	
<b>EVALUATION OF THE PROPERTIES OF THE POLYMER COMPOSITION USING A FUZZY ANALYSIS OF THE FORMULATION .....</b>	<b>2068</b>
<i>I. V. Germashev ; E. V. Derbisher ; T. P. Mashihina</i>	
<b>NEUTRALIZATION OF SYNTAX ERRORS IN THE COMPILER OF THE FUNCTIONAL-IMPERATIVE LANGUAGE EL .....</b>	<b>2073</b>
<i>A. A. Maliavko</i>	
<b>SOFTWARE FOR PREDICTIVE MAINTENANCE AND REPAIR OF THE ENTERPRISE OFFICE EQUIPMENT .....</b>	<b>2077</b>
<i>A. G. Kravets ; N. Y. Orudjev ; N. A. Salnikova</i>	
<b>THREE APPROACHES TO EVALUATING THE PERFORMANCE OF ACTIVE RESERVATION SYSTEMS .....</b>	<b>2084</b>
<i>V. Roganov</i>	
<b>CYBER-PHYSICAL SYSTEM OF THE MOBILE ROBOT'S OPTIMAL TRAJECTORY PLANNING WITH TAKING INTO ACCOUNT ELECTRIC MOTORS DETERIORATION .....</b>	<b>2089</b>
<i>T. Kruglova ; I. Schmelev ; I. Sushkov ; R. Filatov</i>	
<b>DEVELOPMENT OF SOFTWARE FOR COLLECTING REGION-WISE VALUES OF DAY-NIGHT TEMPERATURE DROP FOR A RENEWABLE ENERGY SOURCE .....</b>	<b>2094</b>
<i>V. A. Cheluhin ; M. S. Krujaev ; E. V. Abramson ; Piei Zon Aung</i>	
<b>THE COEFFICIENT OF CROSS-SECTION AREA OF SICKLE-SHAPED GAP OF THE ACTUATOR .....</b>	<b>2096</b>
<i>K. R. Crawford ; N. W. Mitiukov ; E. L. Busygina</i>	
<b>SIMULATION OF COMPACT POWER LINES .....</b>	<b>2101</b>
<i>N. V. Buyakova ; Le Van Txao ; A. V. Kryukov</i>	
<b>QUESTIONS SMOOTHING TIME SERIES DATA ON THE LEVELS OF POLLUTANT EMISSIONS FROM INDUSTRIAL PLANTS .....</b>	<b>2106</b>
<i>A. A. Belov</i>	
<b>DEVELOPMENT OF INFORMATION MEASURING COMPLEX OF DISTRIBUTED PULSE CONTROL SYSTEM .....</b>	<b>2110</b>
<i>A. N. Ilyushin ; D. A. Kovalev ; P. M. Afanasev</i>	
<b>STEEL DEFECTS RECOGNITION USING DEEP LEARNING .....</b>	<b>2115</b>
<i>J. L. Yunani ; M. V. Medvedev</i>	
<b>AUTOMATED DECISION-MAKING NO AN ECONOMICAL OPTION OF LAYOUT FOR THE OUTDOOR SWITCHGEAR OF SUBSTATIONS WITH THE HIGHEST VOLTAGE OF 35-220 KV .....</b>	<b>2119</b>
<i>A. V. Varganova ; E. A. Panova ; A. S. Irihov</i>	
<b>ASSESSMENT OF THE PROSPECT OF USING THE HYDROPOWER POTENTIAL IN THE OPERATING WATER-SUPPLY AND IRRIGATION SYSTEMS OF SAVROPOL KRAI (RUSSIA) .....</b>	<b>2125</b>
<i>V. L. Bondarenko ; A. K. Kortunov ; E. A. Semenova ; E. D. Khetsuriani</i>	
<b>AUTOMATED CONTROL OF HYDRAULIC DRIVE FOR ACCELERATION .....</b>	<b>2130</b>
<i>V. F. Korostelev ; M. S. Denisov</i>	
<b>DESIGN OF AUTOMATED CONTROL SYSTEM SUPPORTING TEMPERATURE FIELD IN .....</b>	<b>2134</b>
<i>A. N. Ilyushin ; I. D. Shilkina ; P. M. Afanasev</i>	
<b>DESIGNS OF DOMESTIC (RUSSIAN) SOLAR PLANE TYPE COLLECTORS WITH ABSORBER OF CORROSION-RESISTANT STEEL .....</b>	<b>2138</b>
<i>I. E. Semenov ; A. V. Ivanov</i>	
<b>PARAMETRIC IDENTIFICATION OF NONLINEAR SYSTEMS BY AGGREGATION OF STATIC AND DYNAMIC NEURAL NETWORKS .....</b>	<b>2142</b>
<i>A. D. Semenov ; A. V. Volkov ; N. I. Schipakina</i>	

<b>PRINCIPAL DIRECTIONS OF THE WIND ENERGY POSSIBLE USE IN THE WESTERN SECTOR OF THE RUSSIAN ARCTIC</b> .....	2148
<i>V. A. Minin ; A. I. Furtaev</i>	
<b>ACCURACY OF INDOOR NAVIGATION WITH BLUETOOTH BEACONS</b> .....	2154
<i>V Grinyak ; A Shurygin ; A Devyatitsilnyi</i>	
<b>INTELLIGENT MOBILE ROBOT CONTROL IN LINGUISTIC EVALUATION OF SOLUTION OPTIONS</b> .....	2158
<i>I Kafiev ; P Romanov ; I Romanova</i>	
<b>IMPACT OF GEOMAGNETICALLY INDUCED CURRENTS ON TRANSFORMERS IN THE KOLA POWER GRID</b> .....	2164
<i>B. Efimov ; V. Selivanov ; Ya. Sakharov</i>	
<b>TIME STABILITY ANALYSIS OF RADIONUCLIDE COMPOSITION OF NPP AIRBORNE RELEASES</b> .....	2168
<i>A-N. V. Vukolova ; A. A. Rusinkevich ; A. P. Dolgikh</i>	
<b>LOW NOISE AMPLIFIER WITH FREQUENCY CORRECTION AND DIFFERENTIAL OUTPUT IN SI-GE 130 NM PROCESS</b> .....	2171
<i>Z. B. Sadykov ; K. V. Murasov ; R. R. Fakhrutdinov</i>	
<b>MODELING KNOWLEDGE ASSESSMENT WITH GAMIFICATION TECHNOLOGY ON E-LEARNING PLATFORM</b> .....	2175
<i>E. V. Karmanova ; E. V. Chernova ; A. S. Dokolin</i>	
<b>ELECTROMAGNETIC COMPATIBILITY ISSUES BETWEEN POWERFUL CONTROLLED SOURCES OF ULF WAVES AND SUBSTATION</b> .....	2181
<i>M. B. Barannik ; V. V. Ivonin</i>	
<b>THEORY AND PRACTICE OF THE USE OF POWER TRANSMISSION LINES FOR THE DEEP ELECTROMAGNETIC SOUNDING OF THE EARTH'S CRUST</b> .....	2185
<i>V. V. Ivonin ; V. V. Kolobov</i>	
<b>ANALYSIS AND STUDY OF THE DYNAMIC PROCESSES OF A PERMANENT MAGNET SYNCHRONOUS MOTOR WITH A WIDE RANGE OF PARAMETER VARIATIONS USING THE REFERENCE MODEL</b> .....	2189
<i>N. A. Malev ; A. I. Mukhametshin ; O. V. Pogoditsky</i>	
<b>THE "ENERGY" SERIES GENERATORS WITH OUTPUT POWER FROM 2 TO 200 KW FOR ELECTROMAGNETIC SOUNDINGS WITH THE USE OF POWER TRANSMISSION LINES</b> .....	2195
<i>V. Kolobov ; M. Barannik</i>	
<b>DETERMINATION OF THE RESIDUAL CAPACITY OF THE CHEMICAL CURRENT SOURCE</b> .....	2201
<i>I. Shirokov ; E. Shirokova ; I. Afonin</i>	
<b>Author Index</b>	