



## PROGRAMMA

**A N Abakumov, N V Zakharova**

Omsk State Technical University, Omsk, Russia

DETERMINATION OF LOAD CAPACITY FOR FLEXIBLE SPLINE OF HARMONIC DRIVE

**G P Anshakov, A I Belousov, A V Sedelnikov and A S Gorozhankina**

Samara National Research University, Samara, Russia

THE MICROMETHEROID INFLUENCE ESTIMATE ON THE MICROACCELERATIONS LEVEL ONBOARD SMALL SPACECRAFT

**B Azimov, L Sulyukova**

Scientific and Innovation Centre of Information and Communication Technologies under Tashkent IT University, Tashkent, Uzbekistan

OPTIMAL CONTROL OF GRINDING PROCESSES OF NON-RIGID SHAFTS IN ELASTICALLY DEFORMED STATE (

**B M Azimov<sup>1</sup>, D K Yakubjanova<sup>2</sup>**

<sup>1</sup>Scientific and Innovation Center of Information and Communication Technologies under Tashkent IT University, Kichik halka yuli st., 2, Tashkent, Uzbekistan

<sup>2</sup>Samarkand Branch of Tashkent IT University, 41 Shokhruxh Mirzo Street, Samarkand, Uzbekistan

MODELING AND OPTIMAL CONTROL OF MOTION OF COTTON HARVESTING MACHINES MX-1.8 AND HITCHING SYSTEMS OF PICKING APPARATUS UNDER VERTICAL OSCILLATIONS

**Yu Bakhracheva**

Volgograd State University, Volgograd, Russia

THE INVESTIGATION OF HIGH-TEMPERATURE PROPERTIES OF METAL BY A METHOD OF SCLEROMETRIC

**P D Balakin, V N Belkov and I P Zgonnik**

Omsk State Technical University, 11, Mira Pr., Omsk 644050, Russian Federation

RECIPROCATING MACHINES CROSSHEAD DRIVE ANALOGUE

**P D Balakin and O S Dyundik**

Omsk State Technical University, 11, Mira Pr., Omsk 644050, Russian Federation

GENERAL MECHANISMS BALANCING RATIONAL SCHEMES

**S V Belim, S Yu Belim**

Dostoevskiy Omsk State University, Omsk, Russia

IMPLEMENTATION OF SIMPLEX CHANNELS IN THE BLOM'S KEYS PRE-DISTRIBUTION SCHEME

**S V Belim, S Yu Belim**

Dostoevskiy Omsk State University, Omsk, Russia

USE THE KEYS PRE-DISTRIBUTION KDP-SCHEME FOR MANDATORY ACCESS CONTROL IMPLEMENTATION

**S V Belim, N F Bogachenko and A N Kabanov**

Dostoevskiy Omsk State University, Omsk, Russia

A PRECEDENT APPROACH TO ASSIGNING ACCESS RIGHTS

**S V Belim, E V Trushnikova**

Dostoevskiy Omsk State University, Omsk, Russia

COMPUTER SIMULATION OF SURFACE PHASE TRANSITIONS OF ANTIFERROMAGNETIC FILMS

**S V Belim, D E Vilkhovskiy**

Dostoevskiy Omsk State University, Omsk, Russia

METHOD OF DETECTING HIDDEN DATA TRANSMISSION VIA THE KOCH-ZHAO STEGANOGRAPHIC ALGORITHM

**V P Beloglazov<sup>1,2</sup> and L V Mostovenko<sup>2</sup>**

<sup>1</sup>Nizhnevartovsk State University, Nizhnevartovsk, Lenin St. 56, Russian Federation



<sup>2</sup>Omsk State Technical University, Mira ave., 644050, Omsk, Russian Federation  
IMPROVING THE EFFICIENCY OF THE DUST COLLECTOR

***E A Belopukhov<sup>1,2</sup>, V Yu Tregubenko<sup>1,2,\*</sup> and A S Belyi<sup>1,2</sup>***

<sup>1</sup>Institute of Hydrocarbons Processing SB RAS, Omsk, Russia

<sup>2</sup>Omsk State Technical University, Omsk, Russia

MECHANICAL STRENGTH OF ALUMINA SUPPORTS SYNTHESIZED USING RESIDUES

***P V Belyaev, D A Podberezkin, R A Em***

Omsk State Technical University, Omsk, Russia

INVESTIGATIONS OF THE PROTON EXCHANGE MEMBRANE FUEL CELL AT THE CHANGE OF OXYGEN CONCENTRATION

***S V Biruykov<sup>1,2</sup>, D S Baranov<sup>1</sup>, S S Kolmogorova<sup>1</sup>, A V Tyukin<sup>2</sup>***

<sup>1</sup>Omsk State Technical University, Omsk, Russia

<sup>2</sup>Siberian State Automobile and Highway University, Omsk, Russia

ДАТЧИК НАПРЯЖЕННОСТИ ЭЛЕКТРИЧЕСКОГО ПОЛЯ ЦИЛИНДРИЧЕСКОЙ ФОРМЫ  
ELECTRIC FIELD STRENGTH SENSOR OF CYLINDRICAL FORM

***I A Blatov<sup>1</sup>, A I Zadorin<sup>2</sup>, E V Kitaeva<sup>3</sup>***

<sup>1</sup>Volga Region State University of Telecommunications and Informatics, Samara, Russia

<sup>2</sup>Sobolev Institute of Mathematics, Novosibirsk, Russia

<sup>3</sup>Korolev Samara State University, Samara, Russia

AN APPLICATION OF THE CUBIC SPLINE ON SHISHKIN MESH FOR THE APPROXIMATION OF A FUNCTION AND ITS DERIVATIVES IN THE PRESENCE OF A BOUNDARY LAYER

***V N Blinov, A I Lukyanchik, V V Shalay***

Omsk State Technical University, 11, Mira ave., Omsk, 644050, Russia

THE METHOD OF INVESTIGATION OF BASIC PROJECT PARAMETERS OF THE MICROSATELLITE WITH AMMONIA PROPULSION SYSTEM BY RANDOM SEARCH

***V N Blinov, I S Vavilov, V V Fedynin, V V Shalay, P S Yachmenev and V I Ruban***

Omsk State Technical University, 11, Mira ave., Omsk, 644050, Russia

EXPERIMENTAL INVESTIGATIONS OF NITROGEN ARCJET THRUSTER WITH CONTROL UNIT FOR SMALL SPACECRAFTS

***N V Bobkov, A A Fedorov, D A Polonyankin, A I Blesman, A S Demin, D B Reiter***

Omsk State Technical University, 11 Mira Ave., Omsk, 644050, Russia

INVESTIGATION OF THE IMPACT OF WEDM MODES ON SURFACE MORPHOLOGY, ROUGHNESS AND CRACKING OF ZIRCONIUM, NIOBIUM AND VANADIUM

***K M Bobobekov, G V Troshina, A A Voevoda***

Novosibirsk State Technical University, Novosibirsk, Russia

THE PARAMETERS IDENTIFICATION OF THE AUTOMATIC CONTROL SYSTEM WITH THE CONTROLLER

***I V Bogachkov***

Omsk State Technical University, 11, Mira Ave., Omsk, 644050, Russia

THE DETECTION OF PRE-CRASH SECTIONS OF THE OPTICAL FIBERS USING THE BRILLOUIN REFLECTOMETRY METHOD

***I V Bogachkov<sup>1</sup>, A I Trukhina<sup>1</sup>, D P Inivatov<sup>1</sup>, A P Kireev<sup>1</sup> and N I Gorlov<sup>2</sup>***

<sup>1</sup>Omsk State Technical University, 11, Mira Ave., Omsk, 644050, Russia

<sup>2</sup>Siberian State University of Telecommunications and Computer Science, 86, Kirov St., Novosibirsk, 630102, Russia

A CLASSIFICATION OF OPTICAL FIBER TYPES ON THE SPECTRUM PROFILE OF THE MANDELSTAM – BRILLOUIN BACKSCATTERING

***I V Bogachkov***

Omsk State Technical University, 11, Mira Ave., Omsk, 644050, Russia

RESEARCH PROPERTIES OF THE MANDELSTAM – BRILLOUIN SCATTER IN THE POLARIZATION MAINTAINING SINGLE-MODE FIBERS



**A V Boikov, R V Savelev, V A Payor and N V Vasilyeva**

Saint-Petersburg mining university, Saint-Petersburg, Russia

DEM CALIBRATION APPROACH: ORTHOGONAL EXPERIMENT

**D A Bronnikov<sup>1</sup>, Z V Semenova<sup>2</sup>, A A Nigrey<sup>1</sup>, V A Komarov<sup>1</sup> and N N Nigrey<sup>2</sup>**

<sup>1</sup>Omsk State Transport University, Omsk, Russia

<sup>2</sup>Siberian State Automobile and Highway University, Omsk, Russia

STRUCTURE OF THE PHYSICAL PROTECTION SYSTEM OF MAIN PIPELINES FROM DELIBERATE THREATS

**Yu A Burian and M V Silkov**

Omsk State Technical University, 11 Mira Pr., Omsk 644050, Russian Federation

CONICAL METAL-RUBBER SUPPORT WITH QUASI-ZERO STIFFNESS EFFECT

**Yu A Buryan, D V Sitnikov, A A Buryan, B A Kalashnikov**

Omsk State Technical University, Omsk, Russia

TO THE ISSUE OF THE CONTROL LAW INFLUENCE ON THE ACTIVE DYNAMIC VIBRATION DAMPER EFFICIENCY

**A I Cheredov, A V Shchelkanov**

Omsk State Technical University, Omsk, Russia

PHOTODETECTORS BASED ON OSCILLISTOR EFFECT

**I K Chernykh, E V Vasil'ev, I K Chekalin, E V Krivonos, D S Makashin**

Omsk State Technical University, 11, Mira ave., Omsk, 644050, Russia

FRICITION STIR WELDING OF TITANIUM ALLOYS OT-4 AND VT-20

**E V Danko, N M Oskorbin and O S Ternovoy**

Altai State University, Barnaul, Russia

ABOUT INFORMATIONAL UTILITY OF INVESTMENT PROJECT EXPERTISE

**I E Demin**

Omsk State Technical University, Mira ave., 11, 644050, Omsk, Russia

SELECTION OF METHODS FOR INCREASING GAS SELECTIVITY ON THE EXAMPLE OF A SENSOR SYSTEM BASED ON IN2O3–GA2O3 SEMICONDUCTOR FILMS

**A Denisenko**

Samara State Technical University, Samara, Russia

EFFECT OF THE DESIGN PARAMETERS OF THE SPINDLE KNOT ON NATURAL FREQUENCIES

**S V Dronov, K A Leongardt**

Altai State University, Barnaul, Russia

MULTIDIMENSIONAL UNFOLDING PROBLEM SOLUTION IN THE CASE OF A SINGLE TARGET

**V V Dyadichev<sup>1</sup>, A V Kolesnikov<sup>2</sup>, S G Menyuk<sup>1</sup> and A V Dyadichev<sup>1</sup>**

<sup>1</sup>V.I. Vernadsky Crimean Federal University, [Academy of Construction and Architecture](#), Engineering Center "Bio-positive Construction and Resource-Saving", 3 Pavlenko Str., Simferopol, Crimea, 295000, Russia

<sup>2</sup>Lugansk National University named after Vladimir Dal, Department of Automation and Computer-Integrated Technologies, 20-A Molodezhnyi Sq., Lugansk, 91034, Ukraine

IMPROVEMENT OF EXTRUSION EQUIPMENT AND TECHNOLOGIES FOR PROCESSING SECONDARY COMBINED POLYMER MATERIALS AND MIXTURES

**NI Dzhaborov<sup>1</sup>, A V Dobrinov<sup>2</sup>, V A Eviev<sup>3</sup>**

<sup>1</sup>Federal State Budget Scientific Institution Institute for Engineering and Environmental Problems in Agricultural Production, Filterskoe highway 3, pos. Tjarlevo, St. Petersburg, 196625, Russia

<sup>2</sup>Saint-Petersburg State Agrarian University, Petersburg Highway 2, St. Petersburg, Pushkin, 196601, Russia

<sup>3</sup>Kalmyk State University named after B. B. Gorodovikov, Pushkin Street 11, Elista, Republic of Kalmykia, 358000, Russia  
EVALUATION OF THE ENERGY PARAMETERS AND AGROTECHNICAL INDICATORS OF AGGREGATE FOR DEEP SUBSURFACE TILLAGE



**S V Eliseev<sup>1a</sup>, R S Bolshakov<sup>2b</sup>, A I Orlenko<sup>3c</sup>, A N Trofimov<sup>4d</sup>**

<sup>1, 2, 4</sup> Irkutsk State Transport University, 15 Chernyshevsky, Irkutsk, Russia

<sup>3</sup> Krasnoyarsk Institute of Railway Transport, the branch of ISTU, 89 Lado Ketskhoveri, Krasnoyarsk, Russia

STRUCTURAL MATHEMATICAL MODELLING: THE CONCEPT OF FEEDBACK IN THE DYNAMICS OF MECHANICAL OSCILLATION SYSTEMS

**E N Eremin, A S Losev, S A Borodikhin, I A Ponomarev, A E Matalasova**

Omsk State Technical University, Mira ave., 11, Omsk, 644050, Russian Federation

HARDENING OF COATINGS BASED ON CHROMIUM STEEL ALLOYED WITH A COMPLEX OF BORIDE COMPOUNDS BY QUENCHING

**E N Eremin, A S Losev, S A Borodikhin, I A Ponomarev, A E Matalasova**

Omsk State Technical University, Mira ave., 11, Omsk, 644050, Russian Federation

STRUCTURAL TRANSFORMATIONS OF MARTENSITIC CLASS COATINGS DEPOSITED BY A FLUX-CORED WIRE WITH CARBIDE-BORIDE-NITRIDE DOPING DURING TEMPERING

**E N Eremin<sup>1</sup>, V M Yurov<sup>2</sup>, V Ch Laurynas<sup>2</sup>, S A Guchenko<sup>2</sup>, S S Kasymov<sup>2</sup>**

<sup>1</sup> Omsk State Technical University, Omsk, Russia

<sup>2</sup> Karaganda State University named after E.A. Buketov, Karaganda, Kazakhstan

METHOD FOR DETERMINING THE SURFACE ENERGY OF NITRIDES, CARBIDES AND BORIDES

**E N Eremin<sup>1</sup>, S A Guchenko<sup>2</sup>, V Ch Laurynas<sup>2</sup>, V M Yurov<sup>2</sup>, S S Kasymov<sup>2</sup>**

<sup>1</sup> Omsk State Technical University, 11, Mira Pr., Omsk 644050, Russia

<sup>2</sup> Karaganda State University named after E.A. Buketov, Karaganda, Kazakhstan

LASER ALLOYING OF NANOCRYSTALLINE COATINGS

**S D Faruntsev<sup>1</sup>, E S Gebel<sup>2</sup>**

<sup>1</sup> Ltd. «Insist-Automatika», Omsk, Russia

<sup>2</sup> Automation and Robotics Department, Omsk State Technical University, Omsk, Russia

ADVANCED PROCESS CONTROL SYSTEM OF OIL-GAS SEPARATOR BY THE TEMPERATURE CHANNEL

**Sh Fazilov, N Mamatov**

Scientific and innovation center of information and communication technologies, Tashkent, Uzbekistan

FORMATION AN INFORMATIVE DESCRIPTION OF RECOGNIZABLE OBJECTS

**Sh Fazilov, S Radjabov, O Mirzaev, S Mirzaeva**

Tashkent University of Information Technologies, Tashkent, Uzbekistan

CONSTRUCTION OF THE MODEL OF RECOGNITION OPERATORS IN THE LARGE DIMENSIONAL FEATURE SPACE

**A A Fedorov, D A Polonyankin, Iu O Bredgauer, A V Linovsky, A I Blesman and D V Postnikov**

Omsk State Technical University, 11 Mira Avenue, Omsk, 644050, Russia

INVESTIGATION OF WELDING BRIDGE OCCURRENCE AND SHORT CIRCUIT IMPACT ON WIRE BREAKAGES DURING WEDM

**O A Fedyaeva, E G Poshelyuzhnaya, E M Rakhmatulina, V A Zakharov and T E Fisenko**

Omsk State Technical University, Omsk, Russian Federation

INVESTIGATION OF INTERACTIONS IN THE CENOSPHERES-WATER SYSTEM

**S D Filonov, K A Aksyonov and V N Kruglov**

Ural Federal University, Ekaterinburg, Russia

METHOD FOR LOADING CARGO TRUCKS USING TWO-DIMENSIONAL PACKING ALGORITHMS

**B Z Garmaev, V V Boronoev, I V Naguslaeva and V D Ompokov**

Institute of Physical Material Science, 8, Sakhyanovoi str., Ulan-Ude, 670047, Russia

CLASSIFICATION OF PULSE WAVES BASED ON CLUSTER ANALYSIS OF TIME PARAMETERS

**V I Gluhov<sup>1</sup>, V K Mekhedov<sup>1,2</sup>**

<sup>1</sup> Omsk State Technical University, Omsk, Russia

<sup>2</sup> OJSC «Research Institute of the Railway Transport Control and Diagnostics», (OJSC "RIRTC"), Omsk, Russia



**ANALYSIS OF THE TECHNIQUE FOR CONTROLLING THE ECCENTRICITY OF WHEEL SETS OF ROLLING STOCK**

***V I Glukhov, V A Grinevich and V V Shalay***

Omsk State Technical University, Mira ave., 11, 644050, Omsk, Russia

**TOLERANCE SYSTEM FOR LINEAR MAXIMUM MATERIAL SIZES AND THEIR INSPECTION BY CALIBERS**

***I I Gontchar<sup>1,2</sup>, M V Chushnyakova<sup>1,3</sup>, A I Blesman<sup>1</sup>***

<sup>1</sup>Omsk State Technical University, Omsk, Russia

<sup>2</sup>Omsk State Transport University, Omsk, Russia

<sup>3</sup>Akdeniz University, Antalya, Turkey

**THERMAL DECAY OF A METASTABLE STATE: THE QUASISTATIONARY RATE AND THE MEAN LIFETIME**

***I I Gontchar<sup>1,2</sup>, M V Chushnyakova<sup>1,3</sup>, A I Blesman<sup>1</sup>***

<sup>1</sup>Omsk State Technical University, Omsk, Russia

<sup>2</sup>Omsk State Transport University, Omsk, Russia

<sup>3</sup>Akdeniz University, Antalya, Turkey

**DIMENSIONLESS UNIVERSAL PARAMETERS OF THE KRAMERS PROBLEM**

***A N Grechukhin, V V Kuts and M S Razumov***

Southwest State University, Kursk, Russia

**CALCULATION OF THE CONTROLLED PARAMETERS OF THE 6-COORDINATE ROBOT IN THE PROCESS OF ADDITIVE FORMING OF PRODUCTS**

***P B Grinberg<sup>1</sup>, K N Poleschenko<sup>1</sup>, D N Korotaev<sup>2</sup>, P V Orlov<sup>2</sup>, G A Vershinin<sup>3</sup>, E E Tarasov<sup>4</sup>, E V Ivanova<sup>5</sup>***

<sup>1</sup>Omsk Scientific Research Institute of Process and Engine Manufacture, 283, street of B. Khmelnytskyi, Omsk, 644021, Russia

<sup>2</sup>Siberian State Automobile and Highway University, 5, Mira ave., Omsk, 644080, Russia

<sup>3</sup>Dostoevsky Omsk State University, 55a, Mira ave., Omsk, 644077, Russia

<sup>4</sup>FGUP Federal Research and Development Centre «Progress», 4, 5<sup>th</sup> Kordnaya street, Omsk, 644018, Russia

<sup>5</sup>Omsk Tank-Automotive Engineering Institute, 119, 14th military town, Omsk, 644098, Russia

**RECEIVING NANOSTRUCTURAL TOPOCOMPOSITE COATINGS IN TERMS OF THE CASCADE CROSS EFFECT**

***A V Gruzin<sup>1</sup> and V V Gruzin<sup>2</sup>***

<sup>1</sup>Omsk State Technical University, 11, Mira Pr., Omsk 644050, Russian Federation

<sup>2</sup>Saken Seifullin Kazakh Agrotechnical University, 62 Zhenis avenue, Astana, 01001, Kazakhstan

**IMPROVEMENT OF A DISPERSED NON-COHESIVE SOIL DEFORMATION MODEL .**

***A V Il'ev<sup>1</sup>, V P Il'ev<sup>2</sup>***

<sup>1</sup>Sobolev Institute of Mathematics SB RAS, Omsk, Russia

<sup>2</sup>Dostoevsky Omsk State University, Omsk, Russia

**ON AXIOMATIZABILITY AND DECIDABILITY OF UNIVERSAL THEORIES OF HEREDITARY CLASSES OF MATROIDS**

***A Ph Ilyushchanko<sup>1,2</sup>, I M Charniak<sup>2</sup>, R A Kusin<sup>3</sup>, A R Kusin<sup>2</sup>, E N Eremin<sup>4</sup>***

<sup>1</sup>State Research and Production Powder Metallurgy Association, 41 Platonov str., Minsk, 220005, Republic of Belarus

<sup>2</sup>State Scientific Institution "O.V. Roman Powder Metallurgy Institute", 41 Platonov str., Minsk, 220005, Republic of Belarus

<sup>3</sup>Belarusian State Agriculture Technical University, 99, Nezavisimosti ave., Minsk, Republic of Belarus

<sup>4</sup>Omsk State Technical University, 11, Mira ave., Omsk, 644050, Russia

**THE PROCESS OF OBTAINING OF POROUS PERMEABLE MATERIALS BY ELECTRIC CURRENTT SINTERING OF METAL POWDERS, FIBERS AND NETS**

***K E Ivlev<sup>1</sup>, S N Nesov<sup>1</sup>, P M Korusenko<sup>1</sup>, S N Povoroznyuk<sup>1,2</sup> and V V Bolotov<sup>1</sup>***

<sup>1</sup>Omsk Scientific Center of Siberian Branch of Russian Academy of Sciences, Karl Marx Avenue 15, Omsk, 644024, Russia

<sup>2</sup>Omsk State Technical University, Mira Avenue 11, Omsk, 644050, Russia

**MODIFICATION OF CARBON NANOTUBES BY AN ION BEAM OF ARGON**

***B A Kalashnikov<sup>1</sup>, N N Rasskazova<sup>2</sup> and V N Sorokin<sup>1</sup>***

<sup>1</sup>Omsk State Technical University, Omsk, Russia

<sup>2</sup>Research and production enterprise "Progress", Omsk, Russia





DISCRETE SWITCHING OF ELASTIC ELEMENTS AS A WAY OF ENSURING DAMPING IN DUFFING OSCILLATOR

**V G Kamaltdinov<sup>1</sup>, V A Markov<sup>2</sup> and A E Popov<sup>1</sup>**

<sup>1</sup>South-Ural State University, Chelyabinsk, Russia

<sup>2</sup>Bauman Moscow State Technical University, Moscow, Russia

EXPERIMENTAL RESEARCH ON OPERATIONAL PROCESS OF PETROL ENGINE ON LEAN AIR-AND-FUEL MIXTURES ON THE EDGE OF COMBUSTION KNOCK

**O D Kazakov<sup>1</sup>, A V Averchenkov<sup>2</sup>, N Yu Kulagina<sup>1</sup>**

<sup>1</sup>Bryansk State University of Engineering and Technology, Bryansk, Russia

<sup>2</sup>Bryansk State Technical University, Bryansk, Russia

MACHINE LEARNING IN THE ANALYSIS OF MEDICAL DATA

**V G Khomchenko**

Omsk State Technical University, 11, Mira pr., Omsk 644050, Russian Federation

ROBOT MANIPULATOR END-EFFECTOR ORIENTATION SETTING METHODS

**I A Kirovskaya, E V Mironova, M V Vasina, O Yu Brueva, A O Murashova, D A Polonyankin, A I Blesman, M A Zverev**

Omsk State Technical University, Omsk, Russian Federation

MULTICOMPONENT SEMICONDUCTORS BASED ON THE SYSTEM GAAS-CDSE. RECEIVING. PROPERTIES

**I A Kirovskaya, E V Mironova, A O Murashova, R V Ekkert and I Yu Umanskiy**

Omsk State Technical University, Mira ave., 11, 644050, Omsk, Russian Federation

MULTICOMPONENT SYSTEM OF HETEROGENEOUS SUBSTITUTION INP-CDTE. PREPARATION, ATTESTATION. VOLUME PROPERTIES

**I A Kirovskaya, P E Nor, T N Filatova**

Omsk State Technical University, Mira ave., 11, 644050, Omsk, Russian Federation

VOLUME AND SURFACE PROPERTIES OF SOLID SOLUTIONS OF SYSTEMS  $A^{III}B^V$ -CDS,  $A^{II}B^{VI}$ -CDS

**I A Kirovskaya, L V Novgorodtseva, A V Yureva and T L Bukashkina**

Omsk State Technical University, Mira ave., 11, 644050, Omsk, Russian Federation

ASID-BASE STATE OF SURFACES OF BINARY AND MULTICOMPONENT SEMICONDUCTORS  $GAB^V$ - $ZNB^{VI}$

**A P Kondratov<sup>1</sup>, I V Nagornova<sup>1</sup> and L G Varepo<sup>2</sup>**

<sup>1</sup>Moscow Polytechnic University, 38 B. Semenovskaya str., Moscow 107023, Russia

<sup>2</sup>Omsk State Technical University, 11 Mira ave., Omsk, 644050, Russia

TENSO-RESISTIVE PRINTED SENSORS FOR FLEXIBLE ELEMENTS OF SYSTEMS AND MECHANISMS

**S G Konesev<sup>1</sup>, R T Khazieva<sup>1</sup> and R V Kirillov<sup>2</sup>**

<sup>1</sup>Ufa State Petroleum Technological University, 1, Kosmonavtov ave., Ufa, 450062, Russia

<sup>2</sup>Energodiagnostika, 131/1, Internacional'naya ave., Ufa, 450112, Russia

ASSESSMENT OF OPERATING MODES OF HYBRID ELECTROMAGNETIC ELEMENTS IN THE INDUCTIVE-CAPACITIVE CONVERTERS

**M S Korytov<sup>1</sup>, V S Shcherbakov<sup>1</sup> and V V Titenko<sup>2</sup>**

<sup>1</sup>Siberian automobile and highway university, Mira street, 5, Omsk, Russia

<sup>2</sup>Omsk State Technical University, Mira street, 11, Omsk, Russia

EFFECT OF THE ANGLES OF THE EARTH-MOVING MACHINE MOLDBOARD ON THE CROSS SLOPE OF THE GRADED SURFACE

**M S Korytov<sup>1</sup>, V S Shcherbakov<sup>1</sup> and V V Titenko<sup>2</sup>**

<sup>1</sup>Siberian automobile and highway university, Mira street, 5, Omsk, Russia

<sup>2</sup>Omsk State Technical University, Mira ave., 11, 644050, Omsk, Russia

THE USE OF HERMITE POLYNOMIALS FOR THE ANALYTICAL SOLUTION OF THE PROBLEM OF CARGO MOVEMENT ON FLEXIBLE PENDULUM SUSPENSION ON A GIVEN TRAJECTORY

**P A Korchagin<sup>1</sup>, V S Serdyuk<sup>2</sup>, D S Aleshkov<sup>1</sup>, I A Teterina<sup>1</sup>**

<sup>1</sup>Siberian State Automobile and Highway University, prospect Mira 5, 644080, Omsk, Russia



<sup>2</sup>Omsk State Technical University, prospect Mira 11, 644050, Omsk, Russia

INFLUENCE OF TRUCK TIRES EXPLOID ON THE LEVEL OF PROFESSIONAL RISK IN SERVICING TRUCK WHEEL

**S Kratov**

Institute of Computational Mathematics and Mathematical Geophysics SB RAS, Novosibirsk, Russia  
ON IMPROVING THE INDEXING OF INFORMATION SYSTEMS BASED ON WEB TECHNOLOGIES

**E. Yu. Krylova<sup>1</sup>, I. V. Papkova<sup>2</sup>, A. O. Sinichkina<sup>2</sup>, T. B. Yakovleva<sup>2</sup> and Vadim A. Krysko-yang<sup>2</sup>**

<sup>1</sup>Saratov National Research University named after NG Chernyshevsky, Saratov, Russia

<sup>2</sup>Saratov State Technical University named after Gagarin YA, Saratov, Russia

MATHEMATICAL MODEL OF FLEXIBLE DIMENSION-DEPENDENT MESH PLATES

**A V Kulbyakina<sup>1</sup>, N A Ozerov<sup>1</sup> and P A Batrakov<sup>2</sup>**

<sup>1</sup>Yuri Gagarin State Technical University of Saratov, 77, Politechnicheskaya Str., Saratov 410054, Russian Federation

<sup>2</sup>Omsk State Technical University, 11, Mira Pr., Omsk 644050, Russian Federation

THERMODYNAMIC ANALYSIS OF THE HYDROCARBONS PROCESSING PLANTS FUEL SUPPLY SYSTEMS EFFICIENCY

**N. K. Kuznetsov<sup>1</sup>, I. A. Iov<sup>2</sup>, A. A. Iov<sup>2</sup>**

<sup>1</sup>Irkutsk National Research Technical University, 83 Lermontov st., Irkutsk, 664074, Russia

<sup>2</sup>«SLC-JH» Ltd., Mira St., 101 bld, Moscow, 129085, Russia

REDUCING OF DYNAMIC LOADS OF EXCAVATOR ACTUATORS

**Y V Kuznetsova<sup>1</sup>, Vad I Surikov<sup>2</sup>, N A Semenyuk<sup>2</sup>, Val I Surikov<sup>2</sup>, S V Yanchij<sup>2</sup> and S V Danilov<sup>2</sup>**

<sup>1</sup>Surgut State University, Surgut, Russia

<sup>2</sup>Omsk State Technical University, Mira ave., 11, 644050, Omsk, Russia

X-RAY DIFFRACTION AND MAGNETIC PROPERTIES OF VANADIUM DIOXIDE VO<sub>2+x</sub> SOLID SOLUTIONS V<sub>1-x</sub>FE<sub>x</sub>O<sub>2</sub>

**O V Kuzovleva, V V Preis, N E Proskuriakov**

Tula State University, Lenin Avenue, 92, Tula, Russia

EXPERIMENTAL RESEARCHES OF CARBON STEELS PLASTICITY CHANGES IN THE FIELD OF PHASE TRANSFORMATIONS

**E V Leun**

Lavochkin Association, 24 str. Leningradskaya, Khimki, 141402, Russia

ELECTRO-DROP-JET MICROSCOPE FOR ACTIVE CONTROL OF THE SURFACE ROUGHNESS OF THE PRODUCT

**E V Leun<sup>1</sup>, V I Leun<sup>2</sup>, V A Savenkov<sup>3</sup>, V N Kurlov<sup>4</sup>, A V Nickel<sup>5</sup>**

<sup>1</sup>Lavochkin Association, 24 str. Leningradskaya, Khimki, 141402, Russia

<sup>2</sup>Omsk State Technical University, 11 Pr. Mira, Omsk, 644050, Russia

<sup>3</sup>LLC «FarmaSapphire», str. Skolkovo 1, Innograd, 121205, Russia

<sup>4</sup>Institute of Solid State Physics Russian Academy of Sciences, 2 str. Academician Ossipyan, Chernogolovka, 142432, Russia

<sup>5</sup>Omsk branch Western-the Siberian railway, branch of JSC "Russian Railways", 4 str. Lekont, Omsk, 644020, Russia

QUESTIONS OF CONSTRUCTION OF THE TELESCOPIC DEVICES OF THE ACTIVE CONTROL OF THE SIZES OF PRODUCTS WITH CORUNDUM TIPS

**G Yu Levi, T I Belyankova**

Southern Scientific Centre of Russian Academy of Sciences, Rostov-on-Don, Russia

SOME PROPERTIES OF TRANSVERSELY ISOTROPIC THERMOELASTIC LAYER UNDER INITIAL STRESS

**A V Linovsky, A A Fedorov, A V Tignibidin, S V Takauk, S V Lavrentev**

Omsk State Technical University, 11 Mira Ave., Omsk, 644050, Russia

INVESTIGATION OF THE ACCURACY OF GEARS PRODUCED BY ELECTRICAL DISCHARGE MACHINING

**S N Litunov, H A Hilal, I A Sysuev**

Omsk State Technical University, Mira ave., 11, 644050, Omsk, Russia

METHOD OF CALCULATING THE DOSING DEVICE OF THE INK MACHINE OF THE STENCIL MACHINE



***I V Lopa<sup>1</sup>, N E Proskuriakov<sup>1</sup> and A I Zhukae<sup>2</sup>***

<sup>1</sup>Tula State University, Lenin Avenue, 92, Tula, Russia

<sup>2</sup>Federal State Unitary Enterprise «RFNC-VNIIEF», Sarov, Russia

RADIAL WAVES OF PIPELINE PRESSURE AT THE HYDRAULIC SHOCK

***V Lozhnikov<sup>1</sup>, V Marenko<sup>2</sup>***

<sup>1</sup>Omsk State University, Omsk, Russia

<sup>2</sup>Sobolev Institute of Mathematics, Siberian Branch of the Russian Academy of Sciences, Omsk, Russia

ANALYSIS OF THE COGNITIVE MODEL «SAFETY OF PEOPLE IN EMERGENCY SITUATIONS»

***N A Luchkin, A G Yanishevskaya, Zh V Golikova***

Omsk State Technical University, Mira ave., 644050, Omsk, Russia

DESIGNING OF AUTOMATED MONITORING SYSTEM TECHNOLOGICAL PROCESSES AND DISPATCH CONTROL OF OBJECTS OF THE GAS TRANSPORT

***A A Lyubchenko<sup>1</sup>, J A Pacheco<sup>1</sup>, S Casado<sup>1</sup>, L Nuñez<sup>2</sup>***

<sup>1</sup>University of Burgos, Burgos, Spain

<sup>2</sup>IE Business School, Madrid, Spain

AN EFFECTIVE METAHEURISTIC FOR BI-OBJECTIVE FEATURE SELECTION IN TWO-CLASS CLASSIFICATION PROBLEM

***E V Lyubchinov, K L Panchuk***

Omsk State Technical University, 11, Mira ave., Omsk, 644050, Russia

GEOMETRIC MODELING OF SOLUTIONS OF THE DIRECT AND INVERSE TASKS OF GEOMETRIC OPTICS ON A PLANE

***V V Lyubimov, E V Kurkina***

Samara University, Samara, Russia

APPLICATION OF THE DYNAMIC PROGRAMMING METHOD TO OBTAIN OF THE ANGULAR VELOCITY CONTROL LAW OF A SPACECRAFT WITH A SMALL GEOMETRIC ASYMMETRY IN THE ATMOSPHERE

***V A Markov<sup>1</sup>, V G Kamaltdinov<sup>2</sup> and A A Savastenko<sup>3</sup>***

<sup>1</sup>Bauman Moscow State Technical University, Moscow, Russia

<sup>2</sup>South Ural State University, Chelyabinsk, Russia

<sup>3</sup>RUDN University, Moscow, Russia

RESEARCH STUDY OF DIESEL ENGINE OPERATION ON BIOGAS WITH THE IGNITION DOSE OF METHYL ESTER OF RAPESEED OIL

***M P Markova***

Omsk State Technical University, Mira ave., 11, 644050, Omsk, Russian Federation

INVESTIGATION OF FRACTAL PROPERTIES OF CLUSTERS OF SORBY MOLECULES UNDER ANHYGILATION PROCESSES ON INHOMOGENEOUS SURFACE

***V A Maystrenko<sup>1</sup>, V V Maystrenko<sup>1</sup>, I A Batyrev<sup>2</sup>, A A Lyubchenko<sup>3</sup> and E Y Kopytov<sup>1,4</sup>***

<sup>1</sup>Omsk State Technical University, Mira ave., 11, 644050, Omsk, Russia

<sup>2</sup>JSC "ONIIP", Omsk, Russia

<sup>3</sup>University of Burgos, Burgos, Spain

<sup>4</sup>Omsk State Transport University, Omsk, Russia

EFFICIENCY ANALYSIS OF TIME SYNCHRONIZATION AND PAPR REDUCTION OF N-OFDM MODEM

***V M Medunetskiy<sup>1</sup>, V V Nikolaev<sup>1,2</sup>***

<sup>1</sup>Saint-Petersburg State University of Information Technologies, Mechanics and Optics, Saint Petersburg, 197101, Russia

<sup>2</sup>"Control systems and devices" CJSC, Saint Petersburg, 194021, Russia

AN ANALYSIS OF QUARTER-TURN VALVE DRIVE TRANSMISSION MECHANISMS

***V M Medunetskiy<sup>1</sup>, V V Nikolaev<sup>1,2</sup>***

<sup>1</sup>Saint-Petersburg State University of Information Technologies, Mechanics and Optics, Saint Petersburg, 197101, Russia

<sup>2</sup>"Control systems and devices" CJSC, Saint Petersburg, 194021, Russia

THE WAY TO EXPAND THE OPERATION AREA FOR ROBOT MANIPULATORS TO INCREASE FLEXIBILITY OF PROCESS LINES





**S N Medvedev, K A Aksyonov and V N Kruglov**

Ural Federal University, Ekaterinburg, Russia

COMPARATIVE ANALYSIS OF ORDER ALLOCATION METHODS AND INTELLIGENT SYSTEMS FOR EFFECTIVE  
DOWNLOAD OF PRODUCTION CAPACITIES OF MANUFACTURING ENTERPRISE

**U V Mikhailova<sup>1</sup>, O B Kalugina<sup>1\*</sup> and S A Kurguzov<sup>2</sup>**

<sup>1</sup>Nosov Magnitogorsk State Technical University, Magnitogorsk, Russia

<sup>2</sup>Sevastopol State University, Sevastopol, Russia

COMPUTER MODELLING OF THE CONICAL SPRINGS STAMPING WITH USING OF ELASTIC MEDIUM

**U V Mikhailova, G I Lukyanov and O B Kalugina**

Nosov Magnitogorsk State Technical University, Magnitogorsk, Russia

SOFTWARE FOR ESTIMATING OF A PREMISES ACOUSTIC SECURITY

**V V Mikheyev<sup>1</sup> S V Saveliev<sup>2</sup>**

<sup>1</sup>Omsk State Technical University, 11, Mira ave., Omsk, 644050, Russia

<sup>2</sup>Siberian state road and highway university, 5/2, Mira ave., Omsk, 644080, Russia

PLANETARY ADJUSTABLE VIBRATORY EXCITER WITH CHAIN GEAR

**L I Mogilevich<sup>1</sup>, V S Popov<sup>1</sup>, A A Popov<sup>1</sup>, A V Christoforova<sup>2</sup>**

<sup>1</sup>Yuri Gagarin State Technical University of Saratov, 77 Politechnicheskaya street, Saratov, Russia

<sup>2</sup>Russia Saratov State University, 83 Astrakhanskaya Street, Saratov, 410012, Russia

HYDROELASTIC RESPONSE OF THREE-LAYERED BEAM RESTING ON WINKLER FOUNDATION

**A P Morgunov, I V Kirgizova**

Omsk State Technical University, pr. Mira, 11, Omsk, 644050, Russia

CONTROL UNIT FOR THE DOSED FEEDING OF THE NUTRIENT SOLUTION INTO THE INDUSTRIAL  
AEROPONIC INSTALLATION SYSTEM

**A N Mrakin<sup>1</sup>, D G Sotnikov<sup>1</sup>, M A Ageev<sup>1</sup>, A A Selivanov<sup>1</sup>, P A Batrakov<sup>2</sup> and I A Vdovenko<sup>1</sup>**

<sup>1</sup>Yuri Gagarin State Technical University of Saratov, 77, Politechnicheskaya Str., Saratov 410054, Russian Federation

<sup>2</sup>Omsk State Technical University, 11, Mira Pr., Omsk 644050, Russian Federation

WEIGHT AND SIZE CHARACTERISTICS MODELLING OF THE POWER PLANTS CONTACT CONDENSERS

**D K Mukhamediyeva**

Scientific and Innovation Center of Information and Communication Technologies at TUIT named after Al-Kharezmi,  
Tashkent, Uzbekistan

METHODS FOR SOLVING THE PROBLEM OF THE BIOLOGICAL POPULATION IN THE TWO-CASE

**D Mukhamedieva, N Nizyozmatova**

Scientific and innovation center of information and communication technologies, Tashkent, Uzbekistan

PROBLEMS OF CONSTRUCTING MODELS OF INTELLECTUAL ANALYSIS OF STATES OF WEAKLY  
FORMALIZABLE PROCESSES

**T M Myasoedova, K L Panchuk**

Omsk State Technical University, 11, Mira ave., Omsk, 644050, Russia

GEOMETRIC MODEL OF GENERATION OF FAMILY OF CONTOUR-PARALLEL TRAJECTORIES (EQUIDISTANT  
FAMILY) OF A MACHINE TOOL

**T M Myasoedova, K L Panchuk**

Omsk State Technical University, 11, Mira ave., Omsk, 644050, Russia

GEOMETRIC MODELING OF OFFSET CURVES IN CONTOUR-PARALLEL POCKET MACHINING OF  
ENGINEERING PRODUCTS

**H A Nekrasov, A Yu Romanov**

National Research University Higher School of Economics, Moscow, Russia

DISTRIBUTED LOAD BALANCING FOR THE ADAPTIVE VIDEO STREAMING USING CDN WITH RING SYSTEM  
OF SERVER CONSOLIDATION BY CIRCULANT TOPOLOGY

**A Yu Nikitin**



Omsk State Technical University, Omsk, Russia

COMPLEXITY OF RESOLUTION OF SYSTEMS OF EQUATIONS OVER PARTIAL ORDERS

**I Normatov**

Scientific and Innovation Centre of Information and Communication Technologies under Tashkent IT University, Tashkent, Uzbekistan

PRINCIPLE OF INDEPENDENCE OF CONTINUATION OF FUNCTIONS MULTIVALUED LOGIC FROM CODING

**M F Noskov**

Sayano-Shushensk Branch of Siberian Federal University, Sayanogorsk, Russia

OPTIC-ELECTRONIC PROCESSING OF IMAGES

**T N Nosova, O B Kalugina and I I Barankova**

Nosov Magnitogorsk State Technical University, Magnitogorsk, Russia

INCREASE THE EFFECTIVENESS OF SEARCH DATABASES QUERIES USING THE ALGORITHM OF BITMAP SCALES

**A I Orlenko<sup>1a</sup>, A V Eliseev<sup>2b</sup>, S V Eliseev<sup>3c</sup>**

<sup>1</sup>Krasnoyarsk Institute of Railway Transport, the branch of ISTU, Krasnoyarsk, Russia

<sup>2,3</sup> Irkutsk State Transport University, 15 Chernyshevsky, Irkutsk, Russia

MATHEMATICAL MODELLING IN THE PROBLEMS OF DYNAMICS OF BRUSH-COMMUTATOR UNIT: TAKING INTO ACCOUNT THE CONDITIONS OF THE CONTACT CONSERVATION POSSIBILITIES

**P V Orlov<sup>1</sup>, D N Korotaev<sup>1</sup>, P B Grinberg<sup>2</sup>, V V Fedosov<sup>1</sup>**

<sup>1</sup>Siberian State Automobile and Highway University, 5, Mira ave., Omsk, 644080, Russia

<sup>2</sup>Omsk Scientific Research Institute of Process and Engine Manufacture, 283, street of B. Khmelnytskyi, Omsk, 644021, Russia

METHODICAL COMPLEX FOR INVESTIGATION DEPENDENCIES BETWEEN MICRO STRUCTURE AND MACRO PROPERTIES OF MATERIALS AND OPERATING CHARACTERISTICS OF PRODUCTS

**A M Paramonov, E M Rezanov**

Omsk State Technical University, 11, Mira Ave., Omsk, 644050, Russian Federation

Omsk State Transport University, 35, Marksa Pr., Omsk, 644046, Russian Federation

ПОВЫШЕНИЕ ЭФФЕКТИВНОСТИ РАБОТЫ ТЕРМИЧЕСКИХ АГРЕГАТОВ

THERMAL PLANTS OPERATIONAL EFFICIENCY IMPROVEMENT

**E N Polyakova, O I Filonova, K G Prokofyev, S A Sutyagin**

Kurgan State University, Kurgan, Russia

ENSURING THE INFORMATION SECURITY OF PERSONAL DATA WHEN SUBMITTING ELECTRONIC APPEALS TO THE PUBLIC AUTHORITIES

**O S Popkova<sup>1</sup>, Wu Linh Nguyen<sup>1</sup>, O S Dmitrieva<sup>1</sup>, I N Madyshev<sup>2</sup> and A N Nikolaev<sup>2</sup>**

<sup>1</sup>Kazan State Power Engineering University, Kazan, Russia

<sup>2</sup>Kazan National Research Technological University, Kazan, Russia

ESTIMATION OF RECTANGULAR SEPARATOR EFFICIENCY

**F N Pritykin and V I Nebritov**

Omsk State Technical University, 11, Mira ave., Omsk, 644050, Russia

DEFINITION OF SERVICE ANGLE OF ANDROID'S ROBOT HAND BY METHOD OF SMALL MOVEMENTS OF GRIPPER'S AXIS SYNTHESIS BY SPEED VECTOR

**N E Proskuriakov, B S Yakovlev**

Tula State University, Lenin Avenue, 92, Tula, Russia

DETERMINATION OF PARAMETERS OF THE AUTOMATED BACKUP PROCESS OF DIGITAL DATA FOR PRINTING HOUSES AND PUBLISHING HOUSES WITHOUT USE OF EXTERNAL NETWORK TECHNOLOGIES TRANSFORMATIONS

**E V Ptitsyna<sup>1</sup>, A B Kuvaldin<sup>2</sup>, D V Ptitsyn<sup>1</sup>**

<sup>1</sup>Omsk State Technical University, Omsk, Russia

<sup>2</sup>National Research University «Moscow Power Engineering Institute», Moscow, Russia



TO THE QUESTION OF EFFECTIVE MODES MIXED LOAD WITH THE COMPLEX WAVEFORM CURRENT SUPPLY

*N Ravshanov<sup>1</sup>, I Khurramov<sup>2</sup>, S M Aminov<sup>3</sup>*

<sup>1</sup>Tashkent University of Information Technologies, Tashkent, Uzbekistan

<sup>2</sup>Karshi State University, Karshi, Uzbekistan

<sup>3</sup>Tashkent State Agrarian University, Tashkent, Uzbekistan

MATHEMATICAL MODELING OF THE PROCESS OF WATER-SOLINE TRANSPORT IN SOILS

*A V Razuvaev<sup>1</sup> and E N Slobodina<sup>2</sup>*

<sup>1</sup>National Research Nuclear University MePhI, 31, Kashirskoe shosse, Moscow 115409, Russian Federation

<sup>2</sup>Omsk State Technical University, 11, Mira Pr., Omsk 644050, Russian Federation

MATERIALS PROPERTIES CONTAINING THE ENERGY GRIDS FORCED INTERNAL COMBUSTION ENGINES APPLICATION

*D N Romanenko<sup>1</sup>, V V Gorozhankin<sup>1</sup>, E F Romanenko<sup>2</sup>, S P Nefed'ev<sup>3</sup> and R R Dema<sup>3</sup>*

<sup>1</sup>National University of Science and Technology «MISIS», Leninsky Prospekt, 4, Moscow, 119049 Russia

<sup>2</sup>National University of Science and Technology «MISIS», Komsomolskaya street, 16, Gubkin, Belgorod region, Russia

<sup>3</sup>Magnitogorsk State Technical University G.I. Nosov», Lenin Avenue, 38, Magnitogorsk, 455000 Russia

METHOD FOR ESTIMATING THE SURFACE SHAGGINESS OF AN ELECTRIC-SPARK COATING

*E A Romanenko, G S Russkikh and Z N Sokolovskiy*

Omsk State Technical University, Mira ave., 11, Omsk, 644050, Russia

PREDICTION OF SOUND INSULATION OF FLEXIBLE PANELS IN LOW FREQUENCIES WITH DYNAMICS AND VOLUME RELATIONS

*I L Ryazantseva and O S Dyundik*

Omsk State Technical University, 11, Mira Pr., Omsk 644050, Russian Federation

СОЕДИНЕНИЕ С НАТЯГОМ ПОВЫШЕННОЙ НЕСУЩЕЙ СПОСОБНОСТИ

INTERFERENCE JOINT OF ENHANCED BEARING CAPACITY

*A Rybalov*

Sobolev Institute of Mathematics, Omsk, Russia

ON A GENERIC TURING REDUCIBILITY OF C.E. SETS

*M Saidalieva, M B Hidirova, A R Shakarov, A M Turgunov, A A Hasanov and Z Dj Yusupova*

Tashkent University of Information Technologies named after Muhammad Al-Khwarizmi, Tashkent, Uzbekistan

DYNAMICS OF REGULATORY MECHANISMS OF THE HUMAN ORGANISM ON THE BASIC HIERARCHICAL LEVELS OF THE ORGANIZATION

*O A Saltykova<sup>1,2</sup>, M M Stasyuk<sup>1</sup> and V A Krysko<sup>1</sup>*

<sup>1</sup>Saratov State Technical University, Politehnicheskaya str, 77, Saratov, Russia

<sup>2</sup>Tomsk Polytechnic University, Sovetskaya str, 84/3, Tomsk, Russia

CHAOTIC DYNAMICS OF THE CONTACT INTERACTION OF TWO BEAMS DESCRIBED OF EULER-BERNOULLI AND PELEKH-SHEREMET'YEV-REDDY HYPOTHESES

*A A Semenov<sup>1</sup>, O M Voznyak<sup>1</sup>, A A Vydmysh<sup>2</sup>, O O Semenova<sup>1</sup> and S V Baraban<sup>1</sup>*

<sup>1</sup>Vinnitsia National Technical University, Vinnitsia, Ukraine

<sup>2</sup>Vinnitsia National Agrarian University, Vinnitsia, Ukraine

DIFFERENTIAL METHOD FOR MEASURING THE MAXIMUM ACHIEVABLE TRANSMISSION COEFFICIENT OF ACTIVE MICROWAVE QUADRIPOLE

*V E Shcherba, V V Shalai, E Yu Nosov, G S Averyanov, M E Linkov*

Omsk State Technical University, Mira ave., 11, Omsk, 644050, Russian Federation

EXPERIMENTAL STUDIES OF THE WORKING PROCESSES OF A RECIPROCATING HYBRID POWER MACHINE WITH A SLOT SEAL OF STEP-TYPE WITH VARIOUS WORKING FLUIDS

*A N Shevlyakov*

Sobolev Institute of Mathematics, Omsk, Russia

Omsk State Technical University, Omsk, Russia



WEAKLY EQUATIONALLY NOETHERIAN TREES

***V A Shovin, V V Golyapin***

Sobolev Institute of Mathematics, Novosibirsk, Russia

APPLICATION OF STRUCTURAL EQUATIONS OF HEMODYNAMICS IN EVALUATION OF EFFICIENCY OF PHYSIOTHERAPY OF ARTERIAL HYPERTENSION

***E G Shubenkova***

Omsk State Technical University, 644050 Mira Ave. 11, Omsk, Russian Federation

THIN-FILM ELECTRONIC DEVICES BASED ON CONJUGATED STRUCTURES

***E N Slobodina<sup>1</sup>, A G Mikhailov<sup>1</sup>, S V Terebilov<sup>1</sup> and A I Shchelokov<sup>2</sup>***

<sup>1</sup>Omsk State Technical University, 11 Mira Pr., Omsk, 644050, Russian Federation

<sup>2</sup>Samara State Technical University, 244, Molodogvardeiskaya street, Samara, 443100, Russian Federation

TURBULENT FLOW INVESTIGATION OF THE VACUUM BOILER AT BOILING

***V V Smirnov and G U Volkov***

Kurgan State University, 640020 Sovetskaya Street 63, Building 4 city Kurgan, Russia

COMPUTATION AND STRUCTURAL METHODS TO EXPAND FEED CHANNELS IN PLANETARY HYDRAULIC MACHINES

***E O Soldusova, V G Goldshtein, L M Inahodova, A A Kazantzev, A V Pronichev***

Samara State Technical University, Samara, Russia

PROBLEM SOLVING OF THE REGIMES ANALYSIS AT DESIGNING OF INNOVATIVE ELECTRICAL POWER SUPPLY SYSTEMS

***A P Solonenko<sup>1</sup>, A I Blesman<sup>2</sup>, D A Polonyankin<sup>2</sup>***

<sup>1</sup>Omsk State Medical University, Lenina str., 12, Omsk 644099, Russia

<sup>2</sup>Omsk State Technical University, Mira ave., 11, Omsk 644050, Russia

SYNTHESIS AND PHYSICO-CHEMICAL INVESTIGATION OF CALCIUM SILICATE HYDRATE WITH DIFFERENT STOICHIOMETRIC COMPOSITION

***O V Soloveva<sup>1</sup>, S A Solovov<sup>2</sup>, R R Khusainov<sup>1</sup>, A S Shubina<sup>1</sup> and A V Antipin<sup>2</sup>***

<sup>1</sup>Kazan State Power Engineering University, Kazan, Russia

<sup>2</sup>Kazan Federal University, Kazan, Russia

NUMERICAL SIMULATION OF GAS FLOW IN POROUS STRUCTURES OF VARIOUS GEOMETRIES

***S A Solovov<sup>1</sup>, A V Antipin<sup>1</sup>, O V Soloveva<sup>2</sup> and R R Khusainov<sup>2</sup>***

<sup>1</sup>Institute of Mathematics and Mechanics, Kazan Federal University, Kazan, Russia

<sup>2</sup>Institute of Heat Power Engineering, Kazan State Power Engineering University, Kazan, Russia

DETERMINATION OF EFFECTIVE DIAMETER OF SOLID PARTICLES FOR THE EULERIAN-EULERIAN MODELLING APPROACH OF FLUIDIZED BED

***V N Sorokin<sup>1</sup>, B A Kalashnikov<sup>1</sup> and I Y Efimov<sup>2</sup>***

<sup>1</sup>Omsk State Technical University, Mira ave., 11, Omsk, 644050, Russia

<sup>2</sup>Federal state unitary enterprise "FNPC "Progress", Omsk, Russia

DYNAMICS OF ANTI-VIBRATION MOUNT WITH QUASI-ZERO STIFFNESS

***V V Sosedko, A G Yanishevskaya***

Omsk State Technical University, Mira ave., 11 Omsk, Russian Federation

METHODS AND MEANS OF DETERMINING THE OPTIMAL LOCATION OF INDUSTRIAL ENTERPRISES

***V V Syrkin<sup>1</sup>, Y F Galuza<sup>1</sup>, V A Treyer<sup>2</sup>, and I A Abramova<sup>2</sup>***

<sup>1</sup>Omsk State Technical University, Mira ave., 11, Omsk, Russian Federation

<sup>2</sup>Omsk Tank-Automotive Engineering Institute (branch of VA MTO MO), Omsk, Russian Federation

REGULATOR OF PRESSURE OF DIRECT ACTION WITH THE ELASTIC LOCKING-REGULATING ELEMENT

***V N Tarasov<sup>1</sup>, I V Boyarkina<sup>1</sup> and G N Boyarkin<sup>2</sup>***

<sup>1</sup>Siberian State Automobile and Highway University, 5 Mira pr., Omsk, 644080, Russia

<sup>2</sup>Omsk State Technical University, 11 Mira pr., Omsk, 644050, Russia



**ANALYTICAL DETERMINATION OF THE SOIL STRENGTH PARAMETERS BY THE NUMBER OF IMPACTS OF THE DYNAMIC INSTRUMENT FALLING WEIGHT**

***S V Terebilov, A G Mikhailov and E N Slobodina***

Omsk State Technical University, 11 Mira Pr., Omsk, 644050, Russian Federation  
**FIRE-TUBE BOILER HEAT EXCHANGE SURFACES FOULING FORMATION**

***A V Tignibidin, L V Zainullina, V A Romashchenko***

Omsk State Technical University, Mira ave., 11, Omsk, 644050, Russia  
**DETERMINATION OF RELIABLE TECHNIQUES FOR CARRYING OUT MEASUREMENTS ON COORDINATE-MEASURING MACHINES**

***A V Tignibidin, S V Takayuk***

Omsk State Technical University, 11 Mira Avenue, Omsk, 644050, Russia  
**ADDITIVE TECHNOLOGIES FOR PROTOTYPING. CONTROL GEOMETRIC CHARACTERISTICS OF PARTS FROM ABS PLASTIC TO DETERMINE THE ORIGINAL DIMENSIONS FOR PRINTING**

***S V Tikhovskaya<sup>1</sup>, M F Korbut<sup>2</sup>***

<sup>1</sup>Sobolev Institute of Mathematics, Siberian Branch, Russian Academy of Sciences, Pevtsova 13, Omsk, 644043 Russia

<sup>2</sup>Luxoft Professional, LLC (Omsk branch), Karl Marx Av. 41, bld. 7, Omsk, 644042 Russia

**TWO-GRID ALGORITHM FOR THE SOLUTION OF SINGULARLY PERTURBED TWO-PARAMETER PROBLEM ON SHISHKIN MESH**

***E V Trapeznikov, L G Varepo***

Omsk State Technical University, Omsk, Russia

**IMPLEMENTATION OF THE MODEL AND ALGORITHM FOR ASSESSING THE SECURITY OF INFORMATION IN AN AUTOMATED SYSTEM**

***O V Trapeznikova<sup>1</sup>, L G Varepo<sup>1</sup>, A V Panichkin<sup>2</sup>, I V Nagornova<sup>3</sup>, E V Trapeznikov<sup>1</sup> and V V Pshenichnikova<sup>1</sup>***

<sup>1</sup>Omsk State Technical University, 11 Mira ave., Omsk 644050, Russia

<sup>2</sup>Sobolev Institute of Mathematics, RAS, Omsk, 13, Pevtsova str., 644043, Russia

<sup>3</sup>Moscow Polytechnic University, 38 B. Semenovskya str., Moscow 107023, Russia

**THE ALGORITHM FOR DESIGNING A PART GEOMETRICAL MODEL AIMED AT INCREASING THE PRECISION CONTROL**

***M S Trofimova, A Yu Panov***

Institute of Industrial Engineering Technology, Nizhni Novgorod State Technical University n.a. R.E. Alekseev, Nizhny Novgorod, Russia

**TECHNIQUE FOR ANALYSIS OF DEFECTS OF PRODUCTS MACHINE BUILDING ACCORDING TO IATF 16949:2016 STANDARD REQUIREMENTS**

***V I Trushlyakov<sup>1</sup>, I Y Lesnyak<sup>1</sup>, A A Novikov<sup>1</sup> and C Spada<sup>2</sup>***

<sup>1</sup>Omsk State Technical University, 644050, Omsk, Russia

<sup>2</sup>Milan technical university, I-20156, Milan, Italy

**INVESTIGATION OF THE LIQUID EVAPORATION PROCESS IN A VACUUM CHAMBER WITH ULTRASOUND INFLUENCE**

***V I Trushlyakov<sup>1</sup>, A V Panichkin<sup>2</sup>***

<sup>1</sup>Omsk State Technical University, Omsk, Russia

<sup>2</sup>Sobolev Institute of Mathematics, Novosibirsk, Russia

**OPTIMIZATION OF ENERGY EXPENSES AT CONVECTIVE AND CONDUCTIVE HEATING OF THE LIQUID IN CYLINDRICAL CAPACITY**

***V I Trushlyakov, V V Yuditsev***

Omsk State Technical University, Omsk, Russia

**DYNAMIC SIMILITUDE FOR SMALL-SCALE RE-ENTRY EXPERIMENT**

***V G Tsyss, I M Strokov and M Y Sergaeva***

Omsk State Technical University, Mira ave., 11, Omsk, 644050, Russia





RESEARCH OF RUBBER-CORD CHARACTERISTIC OF REDUCED RIGIDITY COMPENSATOR IN ABAQUS PACKET

*A A Udalov<sup>1</sup>, S V Parshin<sup>1</sup>, A V Udalov<sup>2</sup> and S L Vasilevykh<sup>2</sup>*

<sup>1</sup>Ural Federal University named after the first President of Russia B.N. Yeltsin, 19, Mira Street, Ekaterinburg 620002, Russia

<sup>2</sup>Vyatka State University, 36, Moskovskaya Street, Kirov 610000, Russia

POWER PARAMETERS OF THE PROCESS OF HARDENING OF CYLINDRICAL PARTS BY A TOROIDAL ROLLER BY THE METHOD OF SURFACE PLASTIC DEFORMATION

*V E Uvarov, A A Popov and T A Gulyaeva*

Novosibirsk State Technical University, Novosibirsk, Russia

IMPUTATION OF INCOMPLETE MOTION DATA USING HIDDEN MARKOV MODELS

*L G Vainer*

Pacific National University, 136, Tikhookeanskaya Street, Khabarovsk, 680035, Russia

REGULARITIES OF MOTION AND ACCURACY OF DOUBLE-SIDED PROCESSING OF CYLINDRICAL ROLLERS

*M A Vakhrameev*

Sobolev Institute of Mathematics, Omsk, Russia

EDIT DISTANCE IN FREE LEFT-REGULAR BANDS

*A A Valke, D G Lobov*

Omsk State Technical University, Mira ave., 11, Omsk, 644050, Russia

CHARACTER RECOGNITION ALGORITHMS

*L G Varepo<sup>1</sup>, I V Nagornova<sup>2</sup>, F A Doronin<sup>2</sup>, S V Gusev<sup>3,4</sup>, E B Bablyuk<sup>2</sup> and V G Nazarov<sup>2</sup>*

<sup>1</sup>Omsk State Technical University, 11 Mira av., Omsk 644050, Russia

<sup>2</sup>Moscow Polytechnic University, 37 B. Semenovskaya str., Moscow 107023, Russia

<sup>3</sup>P.A. Baranov Central Institute of Aviation Motors, 2 Aviamotornaya str., Moscow 111116, Russia

<sup>4</sup>Institute of Applied Mechanics of RAS, 7 Leningradsky prt., Moscow 125040, Russia

TESTING, SEM-CHARACTERIZATION AND SURFACE MODIFICATION OF GEAR WHEELS PRODUCED BY ADDITIVE AND TRADITIONAL TECHNIQUES

*A N Varnavsky*

National Research University Higher School of Economics, Moscow, Russia

DEVELOPMENT OF MODELS FOR FORECASTING AND CLASSIFICATION OF A PRINTING QUALITY OF A LOW COST 3D PRINTER

*E V Vasil'ev, D S Makashin, I K Chernykh*

Omsk State Technical University, 11, Mira ave., Omsk, 644050, Russia

INFLUENCE OF FORMS AND GEOMETRIC PARAMETERS OF SHARPENING OF THE CHISEL EDGE ON THE CUT CHIP THICKNESS THROUGHOUT THE CUTTING EDGES OF A TWIST DRILL

*N V Vasilyeva, P V Ivanov*

Saint-Petersburg Mining University, St Petersburg, Russia

DEVELOPMENT OF A CONTROL SUBSYSTEM TO STABILIZE BURDEN MATERIALS CHARGING INTO A FURNACE

*I S Vavilov, P S Yachmenev, A I Lukyanchik, R N Litau, A V Lysakov*

Omsk State Technical University, 11, Mira ave., Omsk, 644050, Russia

DETERMINATION OF GAS TEMPERATURE IN THE FLOW

*T V Yakovleva<sup>1,2</sup>, V A Krysko-jr.<sup>1</sup>, V A Krysko<sup>1</sup>*

<sup>1</sup>Saratov State Technical University, Politehnicheskaya 77, 410054 Saratov, Russian Federation

<sup>2</sup>Cybernetic Institute, National Research Tomsk Polytechnic University, 634050 Tomsk, Lenin Avenue, 30, Russian Federation

NONLINEAR DYNAMICS OF THE CONTACT INTERACTION OF A THREE-LAYER PLATE-BEAM NANOSTRUCTURE IN A WHITE NOISE FIELD

*A G Yanishevskaya, P V Pesterev*

Omsk State Technical University, Mira ave., 11, Omsk, 644050, Russian Federation



THE ARCHITECTURE OF THE MULTY-AGENT SEARCH SYSTEM OF THE COMPANY

**V A Zakharenko, Ya R Veprikova, D B Ponomarev**

Omsk State Technical University, Mira ave., 11, Omsk, 644050, Russia

REDUCTION OF UNCERTAINTY WITH NON-CONTACT MEASUREMENT OF TEMPERATURE

**N V Zakharova, A N Abakumov**

Omsk State Technical University, Mira ave., 11, Omsk, 644050, Russia

RESEARCH OF FRICTION SAFETY MULTIDISK COUPLING

**L A Zaozerskaya, V A Plankova**

Sobolev Institute of Mathematics, Siberian Branch of the Russian Academy of Sciences, Omsk, Russia

RESEARCHING AND SOLVING A BICRITERIA SUPPLY MANAGEMENT PROBLEM WITH THE GIVEN VOLUMES OF BATCHES

**M Y Zemenkova<sup>1</sup>, A A Gladenko<sup>2</sup>, and Y D Zemenkov<sup>1</sup>**

<sup>1</sup>Industrial University of Tyumen, 38, Volodarskogo str., Tyumen, 625000, Russia

<sup>2</sup>Omsk State Technical University, 11, Mira ave., Omsk, 644050, Russia

ОПЕРАТИВНЫЙ МОНИТОРИНГ РЕЖИМОВ ТРАНСПОРТА НЕФТИ ПРИ ЧАСТОТНОМ РЕГУЛИРОВАНИИ НАСОСНОГО АГРЕГАТА

OPERATIONAL MONITORING OF OIL TRANSPORT REGIMES FOR FREQUENCY REGULATION OF THE PUMP UNIT

**E V Zenkov**

Irkutsk National Research Technical University, Irkutsk, Russia

CALCULATION-EXPERIMENTAL ANALYSIS OF THE ULTIMATE STRENGTH OF A MATERIAL UNDER BIAxIAL TENSION USING THE FINITE ELEMENT METHOD

**E V Zenkov**

Irkutsk National Research Technical University, Irkutsk, Russia

INFLUENCE OF GEOMETRIC PARAMETERS OF PRISMATIC BENCHMARKS WITH U-SHAPED GROOVES ON THE KIND OF THEIR STRESS-STRAIN STATE

**V A Zhmud<sup>1</sup>, L V Dimitrov<sup>2</sup>**

<sup>1</sup>Novosibirsk State Technical University, Novosibirsk, Russia

<sup>2</sup>Technical University of Sofia, Sofia, Kliment Orhidski Boulevard, Bulgaria

THE METHOD OF CORRECT CALCULATION OF REGULATORS BASED ON NUMERICAL OPTIMIZATION

**V A Zhmud<sup>1</sup>, O D Yadryshnikov<sup>2</sup>, H Roth<sup>2</sup>**

<sup>1</sup>Novosibirsk State Technical University, Novosibirsk, Russia

<sup>2</sup>University of Siegen, Siegen, Postfach D-57068 Germany

COMPARISON OF TABULAR AND NUMERICAL METHODS OF DESIGNING REGULATORS FOR CONTROL OF OBJECTS WITH DELAY (

**G Zolotareva, V Zolotarev, S Filko**

Siberian State University of Science and Technology named after Academician M.F. Reshetnev, Krasnoyarsk, Russia

NEW APPROACH TO RISK CONTROLLING IN INFORMATION SECURITY