

# BUILDING AND ARCHITECTURE

**Fedosov S.V., Akulova M.V., Slizneva T.E., Achmadulina J.S., Padokhin V.A.**

## **EFFECT OF THE ULTRADISPERGATION OF ELECTROLYTE SOLUTIONS ON PROPERTIES AND STRUCTURE OF CEMENT COMPOSITES**

*The effect of the ultradispergation of calcium chloride and sodium thiosulfate solutions on macroproperties and structure-forming processes into the fine-grained concrete was studied. The ultradispergation was performed into the rotor-pulsating apparatus with a domestic permanent magnet. It was established that cement stone of concrete mixed by the water after the mechanomagnetic activation with electrolyte admixture was more dense and cold-resistant, and faster harden in comparison with control samples.*

**Keywords:** nanotechnology, physical-mechanical properties, cement composite, sodium thiosulfate, calcium chloride, structure-forming.

**Baydin O.V.**

## **STRENGTH RESISTANCE OF THE CORROSION-DAMAGED FERROCONCRETE**

*The article deals with strength resistance of the corrosion-damaged flexural ferroconcrete elements. There is noted the significance of cracking resistance of reinforced concrete constructions, subject to corrosion under service conditions.*

**Key words:** strength resistance, flexural element, corrosion damage, cracks formation, ferroconcrete squeezing.

**Klyuyev S.V., Lesovic R.V.**

## **STEELFIBER CONCRETE BASED ON COMPOSITIONAL ASTRIGENT MATERIAL AND TECHNOGENIC SAND OF KURSK MAGNETIC ANOMALY FOR BENT CONSTRUCTIONS**

*Acute questions of steelfiber using for disperse-reinforced fine-grained concrete are considered in the article.*

**Key words:** fine-grained concrete, technogenic sand, steelfiber concrete

**Loganina V.I, Davydov, O.A. Kislitsyna S.N, Simonov E.E.**

## **FINISHING THE USE OF LIME IN COMPOSITION OF MODIFIED DIATOMITE**

*Found that the use of lime compositions intended for restorations-tration buildings of historic buildings and finishing newly constructed facilities, a modified sol-polarized silica diatomite leads to increased strength of the composite.*

*The efficiency of the modified diatomite determined by a complex of factors, including high activity of interaction with lime to form calcium hydro.*

**Key words:** compositions for dressing, lime composite, modified diatomite, pozzolanic reaction.

**Ustich A. A., Chernysh A. S.**

## **INTENSE-DEFORMED CONDITION REGULATION OF SOIL AT SHALLOW FOOTING STRUCTURE.**

*Article about on existing effective designs of shallow footing structure, the new design of a base plate of shallow footing and its design procedure is considered.*

**Key words:** the base of a small zalozheniye, intense the deformed condition of soil, settlement resistance, zones of plastic deformations, limiters, ledges.

**Nesmejanov N.P., Bogdanov V.S., Verdiyanyan M.A., Ilyin D.V.**

## **ADDITIONAL CRITERIA OF THE ESTIMATION OF QUALITY OF CEMENT**

*The article contained a new, science-based criteria for evaluating the energy efficiency of cement production, based on exergy analysis technology of cement.*

*Provided the results of calculation of the new criteria and recommendations for their use in cement production.*

**Keywords:** energy efficiency, quality criteria, exergy analysis, competitive, cements production.

**Matjukhin P.V., Pavlenko V.I., Jastrebinsky R.N.**

**COMPOSITE MATERIAL, NONPERISHABLE TO EFFECT OF HIGH ENERGY RADIATIONS**

*In the article the composite material consisting of a heat-conducting matrix (aluminium) and nonperishable to effect of high energy radiations of a filling material (on the basis iron-oxide systems) is reviewed. The frame of a composite material before effect on him of high energy radiations up to 1,2 МэВ is studied. The basic physical-mechanical characteristics of a composite material are adduced.*

**Keywords:** a composite material, frame, properties, surface, effect, radiation.

**Suleymanova L. A., Kara K. A.**

**OPTIMIZATION OF NON-AUTOCLOAVED AERATED CONCRETE**

*Optimization studies were conducted for the non-autoclaved aerated concrete in composite binding using the method of mathematical experiment planning. Developed non-autoclaved aerated concrete optimal composition in the composite binder with an average density of 270 ... 300 kg/m<sup>3</sup> and a compressive strength of 1,5 ... 1,7 MPa.*

**Key words:** non-autoclaved aerated concrete, the optimal composition, the method of mathematical experiment planning

**Solovjeva L.N., Ogurtsova U.N., Bondarenko A.I., Botsman A.N.**

**CHARACTERISTICS OF SANDS IN VIEW OF THEIR USE IN COMPOSITE BINDERS AND FINE-GRAINED CONCRETE**

*The mineral composition and physical-mechanical characteristics of the sands Esskogo and Mahnevskogo fields of the Khanty-Mansi Autonomous Okrug investigated. It is possible to determine the field of rational use in the manufacture of composite binders and small particles concrete.*

**Key words:** mineral composition, the module size, quality factor, binder composition, small particles concrete, microstructural characteristics.

**Dormidontova V.V.**

**THE CONCEPTIONAL GARDENS OF MARTHA SCHWARTZ**

*The article is dedicated to the analysis of the work of landscape architect and artist Martha Schwartz. Well-known projects and the new ones form the material to analyze, allowing making conclusions about exclusive methods and common tendencies.*

**Key words:** composition, art, garden, space, landscape design, architecture.

**Kazlitin S. A., Lesovik R. V.,**

**TO THE PROBLEM OF DESIGN OF CONCRETE FOR THE DEVICE OF INDUSTRIAL FLOORS**

*In article application possibility фибробетона on elimination of crushing of a kvartsitopeschanik and composite knitting, made with use of a waste of wet magnetic separation of Lebedinsky of GOKA for the device of industrial floors is considered. Mechanical and deformativny properties fiber concreteare given.*

**Key words:** fiber concrete, industrial floors, composite knitting, a steel fiber, a waste of wet magnetic separation.

**October M.M.**

**EXPERIMENTAL STUDY OF REINFORCED SOIL AT WORK ON A RETAINING WALL**

*The results of laboratory bench testing of a "T - shaped" retaining wall in reinforced soil with different moisture content.*

**Key words:** "T - shaped retaining wall", bench testing, reinforced soil, moisture content.

**Baydin O.V., Redkin G.M.**

**THE INFLUENCE OF STRENGTH RESISTANCE NONEQUILIBRIUM PROCESSES ON THE ELASTIC LOSSES AT INCREASING THE FERROCONCRETE CRACKING RESISTANCE**

*There is given the calculation assessment of the elastic losses at increasing the cracking resistance of the corrosion-damaged flexural ferroconcrete elements.*

**Key words:** strength resistance, corrosion damage, squeezing, stress.

# THE MECHANICAL EQUIPMENT AND MECHANICAL ENGINEERING

**Gorshkov P.S., Nesmejanov N.P.**

## **NEW WAYS OF COMPLEX DECREASE IN POWER EXPENSES AT RECEPTION OF DRY BUILDING CEMENT MIXES**

*In article the new way of stabilization of quality of dry cement mixes on a basis eksergeticheskogo the analysis and a mechanical way of hashing is offered.*

*The description of a principle of action spirally-lopastnogo the amalgamator with the developed new design of a mixing drum is presented.*

*The short description developed eksergeticheskoi is given the characteristic of quality of a powder of cement.*

**Key words:** Dry building mix, the amalgamator, eksergeticheskaya the characteristic, power expenses.

**Lozovaja S.J., Lyamar I.A.**

## **DEFINITION OF FORCES OPERATING ON A MATERIAL POINT OF LOADING IN THE GRINDING- MIXING DEVICE OF PERIODIC ACTION**

*The model describing kinematics and dynamics of loading on the difficult trajectory representing movement on an ellipse in an inclined plane which moves in due course on some corner on chamber perimetre, in the grinding- mixing device with a vertical rotor is offered.*

**Key words:** the grinding-mixing device, a trajectory, the theory of the continuous environment, force.

**Kachaev A. E., Sevostyanov V.S.**

## **CALCULATION OF THE TRAJECTORY AND SPEED OF MOVEMENT OF THE PARTICLE OF THE CRUSHED MATERIAL ON THE SURFACE OF WORKING ELEMENT OF THE DESINTEGRATOR**

*In article it is considered desintegrator mill with great dispatch-shift influence on a floor-mat-rial, in which high-speed shock influence on a material and shift influence in a layer of particles in a backlash between rotating rotors is provided. The analytical method of calculation of a trajectory and speed of movement of a particle of a material on a surface of a working element is resulted. In a design procedure the power method of definition of speed of movement of a particle on a surface of a working element was used.*

**Key words:** disintegrator mill, radial speed, tangential speed, a particle, a working element.

**Fadin J. M.**

## **MODELING OF MOVEMENT IN THE LOADING PIPES OF DRUM MILLS**

*The paper describes the design of the intramill device, which contains hollow loading pipes (lifters). The mathematical dependence of material flow in loading pipes of drum mills has been obtained.*

**Key words:** lifter, openings loading height, angle of rotation.

**Voronov V.P., Semikopenko I.A., Gordeev S.I., Vyalykh S.V., Dyatlova E.I.**

## **DEFINITION OF THE CONDITION OF PASSAGE BY THE PARTICLE OF THE MATERIAL OF INTERROW SPACE OF THE CAGE MILL**

*In the given work oncoming traffic of air streams in interrow space is considered of the cage mill.*

**Key words:** counter air stream, vortex, passage condition, material particle, desintegrator.

**Shvachkin E.G.**

## **THEORETICAL DETERMINATION OF THE CONDITION TO STABILITY OF THE COMPELLED FLUCTUATIONS UNDERVIBRATORY CUTTING**

*Here the general conditions of stability of the compelled harmonic fluctuations in the system with one degree of freedom, that presents the big practical interest great both from the point of view of reception of stationary technological modes, and for the purpose of their optimization.*

**Key words:** vibratory cutting, stability, an oscillatory system, the compelled fluctuations, self-raised fluctuations, self-oscillations.

**Rakov A.M.**

#### **PLANNING OF EXPERIMENT FOR VERTICAL HUMMER CRUSHERS**

*In article the new design and a principle of work vertical hummer crushers is presented. The plan of experiment and experimental researches of this machine and as results of search experiments are resulted is developed.*

**Key words:** vertical hammer crusher, a crusher rotor, experiment planning, search experiments.

**Nesmiyan A.Y., Dolzhikov V.V., Yakovets A.V.**

#### **THE THEORY OF WORK OF THE SOWING DEVICE OF THE VACUUM CULTIVATING DRILL**

*Elements of the theory of dispensing of seeds by pneumatic sowing devices of the vacuum cultivating drill are considered. Results of the experimental researches definition of a corner of packing of seeds in the working sowing device was which purpose are presented. Materials can be used at the description of behavior of loose environments in movement, and also at designing of the cultivating drill.*

**Keywords:** vacuum sowing apparatus, cultivating drill, seed material, packing corner, porosity.

**Sevostyanov V.S., Ilyina T.N., Siniza E.V., Shkarpetkin E.A.**

#### **INFLUENCE OF CONSTRUCTIVE AND TECHNOLOGICAL PARAMETERS OF VIBRATION AND CENTRIFUGAL GRANULATOR ON THE PROCESS OF PEARLITE CONTAINING MIXES FORMATION**

*On the basis of carried out multiple-factor planning of experiment the regression dependences of structural and mechanical characteristics of granules from high-speed and construction and technological parameters of vibration and centrifugal granulator are made. Rational meanings of varying factors for getting of perlite containing granules of given quality are established.*

**Key words:** perlite, composite mix, vibration and centrifugal granulator, experiment planning, factors, variation levels.

## **ECONOMICS AND PLANT MANAGEMENT**

**Kurmanova D.A.**

#### **PROBLEMS OF DEVELOPMENT OF THE INFRASTRUCTURE THE FINANCIAL MARKET**

*In article processes of formation and development of an infrastructure of the financial market are investigated.*

**Key words:** Infrastructure, the financial market, market mechanism, financial system.

**Zhuchkova E.V.**

#### **INTERNAL AUDIT: TASKS, METHODS AND ORGANIZATION STRUCTURE**

*The article discloses main problems of the internal audit function in the organizations. The author also outlines main goals, organizational structure, principles and personnel duties of the internal audit system.*

**Key words:** audit, internal audit function, organizational structure, internal controls.

**Chizhova E.N., Ursu I.V. Arkatov A. Ya.**

#### **INNOVATIVE DEVELOPMENT: A PROBLEM OF UNITY OF UNDERSTANDING**

*Essence and treatment of innovative development are considered in the article, the comparative analysis of different treatments to understanding of a category «innovative development» is led. The author offers own treatment of the term «innovative development». The human capital is considered in the article as a major factor of innovative development.*

**Key words:** innovative development, treatments to understanding of the term «innovative development», the human capital.

**Slabinskaya I.A., Rovenskikh V.A.**

### **FINANCIAL AND TAX ACCOUNTING FOR UTILITIES EXPENSES UNDER OPERATING LEASE AGREEMENTS**

*The article discloses different types of utilities expenses distribution under operating lease agreements – (a) utilities are paid by the lessor, and included in the final rent amount; (b) utilities are paid by the lessee which also enter the sub-agreements with utilities service providers and (c) utilities are paid by the lessee, which does not enter the sub-agreements with utilities providers, but compensate utilities expenses to the lessor. Each type of distribution is accompanied with financial and tax accounting treatment.*

**Key words:** Civil Code of the RF, Tax Code of the RF, taxation, rent, operating lease, utilities, document flowchart, Russian Accounting Standards (PBU), financial statement.

**Bozkov Yu.N.**

### **SOME ASPECTS OF INNOVATIVE DEVELOPMENT OF THE ENTERPRISES**

*The main tendencies of enterprise innovation development in modern conditions are analyzed. It is revealed, that today, in conditions of modernization of country economic, innovation development becomes effective market instrument of management by modern organizations. The strategy use of innovation development will allow to concentrate managing efforts in proper time on learning and application of perspective achievements of scientific-technical progress and provision of resources of innovation dynamic for the benefit of assigned tasks achievement.*

**Key words:** innovation, innovation development of enterprise, innovation activity, innovation strategy.

**Terehin V.A.**

### **DEVELOPMENT OF QUALITY MANAGEMENT INDUSTRIALLY-BUILDING CLUSTER THROUGH TSENOSTNO-ORIENTATION UNITY OF THE ENTERPRISES**

*Stability and a coordination of internal structure of relations in quality management system are influenced by the tsennostno-focused unity of the enterprises industrially-building cluster which is capable to support communications in the enterprise, to form motivation of workers, to change the relation to a quality policy. Considering developments of system of quality management by the author the conclusion has been drawn on possibility streamlining of conditions of development which is necessary in cluster for maintenance of the greatest potential of self-development in the frameworks set by branch and regional standards.*

**Key words:** the enterprises, quality, the standard, the tsennostno-focused unity.

**Serova E.G., Shipitsyn A.V.**

### **THE EFFICIENCY OF INVESTMENTS IN PORTFOLIO OF SECURITIES**

*In the article the practice of portfolio managers' efficiency estimation is considered on the basis of standard approaches to the portfolio return estimation.*

**Key words:** return of the portfolio of securities.

**Stryabkova E.A., Kurbatov V. L.**

### **INFLUENCE ON COMPETITIVENESS CLUSTER POLICY OF RUSSIA AND ITS REGIONS**

*Found that the impact on the country's competitiveness and innovation of cluster policy, as in the top ten leading countries IUC includes countries are actively used to cluster approach to economic development. At the regional level assessment of competitiveness and investment attractiveness of regions and shows the relationship of the cluster approach to regional development and competitiveness. Before the Belgorod region is the task of improving competitiveness by formation of the territorial and sectoral clusters and areas of priority development, particular attention will be paid to the creation of innovation clusters in the region.*

**Key words:** competitiveness of the country and the region, cluster policy, territorial and industry clusters and innovation clusters.

**Pushenko S.L.**

### **THE SOCIAL-ECONOMICAL RISK FACTORS IDENTIFICATION**

*It is presented the social-economical risk factors identification divided for three conceptual groups: 1) compensation factors which is characterized the dangers connecting with the reaction for unidentical working conditions, the insurance accidents, e.c.; 2) workers professionalism factors which is characterized the dangers connecting with the staff dissimilarity, the workers qualification and social-production culture dis-*

similarity; 3) financial factors which is characterized the dangers connecting to the profit decrease because of the labor safety activity.

**Key words:** risk, risk management, social-economical risk factors identification

**Schukhov V.G.**

#### **FINANCIAL STATEMENTS FRAUD: REVENUE MANIPULATIONS**

The article continue the cycle of financial statements manipulations, starting with a review of the first financial statements manipulations group, - being a revenue manipulations. The following subtypes of revenue manipulations are disclosed: (a) recognition before contract fulfillment; (b) recognition in an amount exceeding actual volume of services rendered; (c) recognition before buyer's acceptance of goods and services and (d) recognition of revenue and receivables from potential bad debtor. Classification is disclosed with practical examples.

**Key words:** IAS/IFRS, financial reporting, internal control, financial statements fraud.

**Romanovich M. A., Yevtushenko Ye. I., Romanovich L. G., Ospishchev P. I.**

#### **THE STATE SUPPORT OF INNOVATIVE BUSINESS OF YOUNG SCIENTISTS ON THE BASIS OF HIGHER EDUCATION INSTITUTIONS OF RUSSIA AND THE BELGOROD REGION**

The standard and legal base of innovative business in the Russian Federation and the Belgorod region is analysed. It is revealed that currently the standard and legal base of support of innovative business of young scientists basically and whole is created. During too time the measures directed on improvement of the legislation in the sphere of development of small innovative business on the basis of higher education institutions on a number of the directions, in our opinion, are required.

**Key words:** innovation, innovative business, young scientists, state support.

## **CHEMICAL TECHNOLOGY ECOLOGY**

**Jastrebinsky R.N., Pavlenko V.I., Jastrebinsky A.V., Matjuhin P.V.**

#### **STRUCTURIZATION METALOLIGOMERS OF WATER DISPERSIONS**

In article synthesis oligomers polietilsilikonats lead by a method of heterophase interaction with concentration of atoms of lead in oligomering volume 78,83 %масс is considered. Processes of structurization and aggregate stability of water dispersions etilsilikonat lead in a wide range pH a solution, presence of some hydrolyzed salts and surface-active substances are studied. Influence of technology factors on dispersion polietilsilikonats lead is established.

**Key words:** metaloligomers, structurization, aggregate stability, water dispersions, technology factors.

**Bondarenko N.I., Bessmertniy V.S., Ilina I.I., Gashchenko E.O.**

#### **PROCESS OF THE COVERING BY GLAZE OF PRODUCTS OF CONCRETE WITH USE TORCH OF PLASMA WITH LOW TEMPERATURE**

In article features of reception of protectively-decorative coverings on products from concrete by fusion of an obverse surface are considered by a plasma torch. The basic functional indicators of protectively-decorative coverings are investigated.

**Keywords:** protectively-decorative coverings, process of the covering by glaze, products from concrete, durability of coupling.

## **ECOLOGY**

**Tarasova G.I.**

#### **RATIONAL WAY OF RECEPTION OF PIGMENTS - FILLERS FROM THE METALLIC INDUSTRIAL WASTES**

Using a method of planning of experiment, optimum parameters of reception of a pigment – filler LKM from metallic industrial wastes KMA are found.

**Key words:** pigments - fillers, metallic industrial wastes

**Averkova O. A.**

**MODELLING OF SEPARATED CURRENTS ON THE INPUT IN SOAKING UP CHANNELS WITH USE OF THE METHOD OF DISCRETE WHIRLWINDS IN NON-STATIONARY STATEMENT**

*The method of mathematical modeling of separated currents on an input in soaking up channels in multicoherent areas with cuts is developed. Programmno-Algorithmicheskyy realization of a method has allowed to construct a field of speeds on an input in soaking up channel with a ledge. Comparisons with the skilled data are made.*

**Key words:** *the separated currents which are soaking up channels, a method of discrete whirlwinds.*

**Vasilchenko A.P.**

**ASSESSMENT OF ECOLOGICAL FRAME OF THE PROLETARSKIY SETTLEMENT OF URBAN TYPE IN TNE BELGOROD REGION**

*The article is devoted to the topical problem of the study of the structure of ecological frame, which is determined by the need to maintain the ecological balance, conservation of the biological and landscape diversity of the area.*

*The result of the work is the assessment of the structure ecological framework and proposals for the maintenance of the ecological balance of the territory of the Proletarskiy settlement of urban type.*

**Key words:** *ecological framework, public use of natural resources, the land fund of the area, the ecological balance, the functional zoning.*

**Prydnikova T. I., Nedelko O. P., Velikij I. S., Mishyrov D. A., Shevtsova R. G., Naumova L. N.**  
**STUDY OF POLYETHYLENE DISPOSAL OF ORGANIC FILLERS**

*The work has been done as part of the cooperation agreement between Belgorod Shukhov State Technological University and the Kharkov Karazin National University. The use of polyethylene as the packaging material brings about a lot of ecological problems, resistance to degradation under natural conditions is one of them. It was discovered that the presence of organic fillers, which are the nutritional medium for various microorganisms (bacteria, fungi, algae) promotes the intensification of the biodegradation process. It was discovered that polyethylene samples with starch additives are destructed better when cultivated without glucose, where fungus *Aspergillus niger* van Tiegh, which is a biodestructor, uses starch as a carbohydrate.*

**Key words:** *biodegradable composite materials, biological degradation, thermoplastic starch, cellulose, polyethylene.*

**Lesovik V. S., Sverguzova Zh. A.**

**POSSIBLE WAYS OF USE OF THE WITHDRAWAL OF SUGAR INDUSTRY – SATURATSIONNOGO OF THE DEPOSIT**

*Article is devoted to a question of recycling of a firm kaltsiysoderzhashchy withdrawal of sugar industry. Results of researches of properties of a withdrawal, data on receiving process on its basis of a sorbent for purification of multicomponent sewage, and results of production tests are presented. As a whole, researches show that use of a firm kaltsiysoderzhashchy withdrawal of sugar industry for sewage treatment is perspective.*

**Key words:** *sewage treatment, sorbent, recycling, sugar industry, recycling of a waste*

## **INFORMATION TECHNOLOGY AND OPERATING SYSTEMS**

**Kuznetsov V.A., Trulev A.V.**

**NON-STATIONARY TEMPERATURE OF WALLS OF THE CEMENT THE ROTATING FURNACE**

*An analytical approach to the wall transient temperature computing has been developed as applied to simulating numerically combustion and heat transfer processes in rotary kiln. Adequacy of the approach was proved by means of a numerical decision of the transient-heat-transfer differential equation for the walls at the computing experiment conditions.*

**Key words:** cement rotary kiln, transient temperature, mathematical model, analytical approach, computing experiment.

**Ledeneva T. M., Medvedev S. N.**

#### **ABOUT FUZZY ASSIGNMENT PROBLEM**

*In this work the fuzzy assignment problem is considered. It is mathematically justified that statement in which fuzzy triangular numbers are both target coefficients, and variables isn't meaningful. It is shown that such problem is reduced to the assignment problem only with crisp coefficients. For it the algorithm of the decision based on transition to interval statement is offered.*

**Key words:** assignment problem, triangular fuzzy number, interval arithmetic.

**Sosnina E.N., Chyvenkov A.I.**

#### **THE QUESTIONS OF INTERFACE OF PARAMETERS OF SOURCES THE SMALL DISTRIBUTED POWER**

*Questions of increase of efficiency of use of diverse sources of the small distributed power (SDP) by means of creation of the Device of Interface are considered. Variants of block diagrams of system of power supplies with sources SDP are resulted. Possible operating modes of system of power supplies are shown at parallel connection of the inverter of pressure and an electric power pool. Theoretical bases of regulation of active and jet capacity, indemnification of capacity of distortion are considered.*

**Key words:** the small distributed power, renewed energy sources, the interface device, the pressure inverter, management of energy.

**Filinskikh A.D., Byasherov A.H.**

#### **ANALYSIS OF THE TRANSFER OF PARAMETRIC AND GRAPHIC INFORMATION BASED ON EXPERIMENTAL DATA**

*This article considers the ability of exchange and transfer of parametric and graphic information to systems of automation for design work of different manufacturers. It describes experiment of export and import of parametric model in systems of automation for design work of different manufacturers.*

**Key words:** parametric simulation, data exchange between CAD systems, 3D-technology, Autodesk, information technologies.

**Moiseev S.A., Ledeneva T.M.**

#### **EVOLUTIONARY ALGORITHM FOR FUZZY CLUSTERING IN PRODUCING VALUES OF LINGUISTIC VARIABLE**

*In this article a method of fuzzy clustering with use of evolutionary algorithm is presented. The method is used for producing values of linguistic variable "Heating Steam Pressure", which is one of the parameters of vulcanization process. As fuzzy clustering criteria and fitness function Xie-Beni index was used. Original mutation and crossover genetic operators were introduced*

**Key words:** fuzzy clustering, Xie-Beni index, evolutionary algorithm, vulcanization process

## **TRANSPORT AND POWER**

**Kuleshov M.I., Gubarev A.V., Pogonin A.A.**

#### **CONDENSATION HOT-WATER BOILER FOR RESIDENTIAL, PUBLIC AND INDUSTRIAL OBJECT'S AUTONOMOUS HEAT SUPPLY SYSTEMS**

*The centralized heat supply systems, prevailed now in Russian Federation, have some disadvantages. All of them are liquated then the autonomous heat supply systems are used. At that systems there may be used with a high efficiency a condensation hot-water boiler with separate heat generation for heating and hot water supply purposes, which was developed in BSTU, named by Shukhov V.G.*

**Key words:** autonomous heat supply systems, water vapor condensation, condensation hot-water boiler.



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# SCIENCES AND HUMANITIES

**Shipitsina G. M.**

**NATIONAL APHORISMS AS REPRESENTATIVES OF RUSSIAN CULTURE AND MENTALITY**

*The concept «a national aphorism» is analyzed. Criteria of division of proverbs on classes on the basis of an origin are invented. National aphorisms are considered as sources of new phraseological expressions.*

**Key words:** national aphorisms, proverbs and sayings, pseudo-aphorisms, semantics, the pragmatist, a language picture of the world, mentality of Russians.

**Lashina L.S. Krasnikov A.A.**

**WORKING CONDITIONS AND LIVES OF WORKERS AND EMPLOYEES OF JOINT-STOCK COMPANIES OF THE RAILWAYS OF THE CENTRAL CHERNOZEM REGION AT THE END OF XIX — THE BEGINNING OF THE XX CENTURY**

*In article work of Board and Management of the joint-stock companies working on construction of the railways over a problem of working conditions, life and a life of the employees, providing with their worthy medical care and training of new qualified personnel is analyzed.*

**Key words:** founders, joint-stock company, inspection, Board, Management, salary, medical care, technical railway schools.

**Menshenina A. O.**

**TECHNOLOGIES OF PARTICIPATION BUSINESS – STRUCTURES IN REALIZATION OF CIVIL EXAMINATION OF REGIONAL GOVERNMENT**

*In article the problem of participation business – structures in realization of civil examination of regional government is staticized. As shows experiment of development of relations in the field of social and economic responsible behavior business - structures, the permission of the given problem will depend on formation of main principles of civil community in Russia with participation of functioning of institutes of a civil society.*

**Key words:** the information-communicative environment, a civil society, civil examination

**Kholstinin K.A.**

**CIVIL EXAMINATION IN SYSTEM OF CRISIS MANAGEMENT**

*The article is devoted to the problem of inclusion of procedure of civil examination in a series of measures, directed on prevention and decrease in negative consequences of crisis in which conditions development of social and economic system proceeds. On the basis of theoretical generalization of domestic and foreign experience the author makes an attempt judgements of a role of this major form of civil participation in practice of anti-recessionary management. The conditions necessary for carrying out of effective civil examination, and also a number of organizational barriers which are getting in way of its introduction are defined.*

**Key words:** examination, a civil society, anti-recessionary management, the state, social and economic system.

**Shapovalova I.S., Shekhovtsova Ye.Yu.**

**EXPANSION INTRODUCTIONS OF CIVIL EXAMINATION: TECHNOLOGIES AND APPROACHES**

*In given article attempt of the theoretical analysis of the information on efficiency of expert activity and introduction of civil examination is undertaken. The concept of civil examination and its social and economic efficiency is considered. Principles, conditions and technologies of realization of civil examination are registered.*

**Key words:** Examination, civil examination, social technologies, efficiency.

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# PROBLEMS OF HIGHER EDUCATION

**Glamazda S.N.**

**KONTSEPTOSFERA'S FORMATION OF FOREIGN STUDENTS IN THE COURSE OF RUSSIAN STUDYING**

*This article deals with the problem of forming language personality in the process of training of Russian language as foreign language. The author gives the way to present concepts, word, revealing their connection with organization of communicative educational process to monological statement of students.*

**Key words:** language situation of the world; concept; conceptsphere; word.

**Kireev M.N., Shvetsova M.Z.**

**WAYS OF PRESERVATION OF NATIONAL IDENTITY, SPIRITUALITY AND MORALITY OF THE MODERN SPECIALIST**

*The article actualizes the problem of spiritual and moral education of students in the process of integration of the institutions of Higher education into the world educational sphere and proposes methodical recommendations of the organization of the process of the control of the process of direction of the spiritual and moral education of the modern specialist of the social and culture sphere which are directed to the merging the efforts of all the subjects of professional education.*

**Key words:** social and cultural education, educational sphere, national identity, social and cultural sphere, integration.

**Prikhodko N.V.**

**SCHOOL OF ACTIVISTS IN THE STRUCTURE OF THE STUDENTS' SELF-ADMINISTRATION AS ONE OF THE METHODS OF LEADERSHIP EDUCATION**

*The article reveals the possibilities of practical and theoretical mastering by the students-activists the phenomenon of leadership in the process of organization of the work of the School of students' activists. The article is directed to the practice and reflects the experience of work in the sphere of forming the important professional leader characters at the Belgorod State Institute of Culture and Arts.*

**Key words:** leadership, leader characters, school of activists, professional directive, students' self-administration.

**Mkrtychev O.V.**

**PROBLEMS OF TRAINING OF STUDENTS TO COMPUTER MODELLING WHEN STUDYING DISCIPLINES «THEORETICAL MECHANICS» AND «THEORY OF MECHANISMS AND CARS»**

*To give the chance to the student to seize knowledge and abilities at modern level to the faculty of higher education institutions it is necessary to redistribute a subject and cyclic and intersubject orientation of many points of educational and methodical activity. In the academic environment and the environment of higher education institutions similar theoretical and applied questions are constantly discussed, is frequent within a kompetentnostny approach in our education system. In this article the author shows a practical approach of such redistribution in the field of intersubject competence of integration of knowledge and methodologies at development of a training material on an example of creation of base of advancing training.*

**Key words:** advancing training, competition's approach, computer modelling of mechanisms, flat movement of mechanisms

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**EDUCATIONAL ASSESSMENT OF THE FORMS OF CONTROL OF PROFESSIONAL TRAINING STAFF OF RUSSIAN FIRE-PREVENTION SERVICE**

*Actual purpose of the professional training is to create a personal potential of an employee of the Government Fire-prevention Service of Juncture Department of Russia, raising their capacity for adequate professional activities in the forthcoming substantive and social situations, and its content is everything that helps to achieve the goal.*

**Key words:** structure, shape, style of work, management, form of management, management style, training, simulation.

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**PERSONAL MEASUREMENT OF EDUCATIONAL PROCESS AS THE FACTOR OF STUDENTS'S SELF-REALIZATION**

*Dynamical development of the higher school depends on in what measure she can create conditions for high-grade personal formation of the young man, open its internal potential as the active participant of educational process. Article is devoted the theoretical analysis of self-realisation of the person in educational system of the higher school, considers the existing approaches and conditions of the decision to the given problem in the course of university education.*

**Keywords:** *personal measurement of education, self-realisation of students, educational process at the higher school, social ecology of university training.*