

## Abstracts

Figovsky O.L. «Nanotechnologies for new materials»

In article the review of achievements of the scientific different countries in the field of creation of nanomaterials for 2012 is presented.

*Keywords: nanomaterials, nanotechnologies, nanoparticles.*

Kalmykov B.Yu., Vysotsky I.Yu., Ovchinnikov N.A., Bocharov S.V. «A way of determination of height of capsizing of the bus for an assessment of durability of a design of its body by UNECE No. 66 rules»

The authors propose a method for determining the height of bus rollover to access body structure strength according to the Rules the United Nations Economic Commission for Europe № 66 (UNECE). Besides, it will allow resulting in optimum value height of bus rollover with different dimensions. It is necessary to get more reliable information of body structure strength. For this purpose in procedure of tests it is suggested to enter the additional stage of calculation of the height of rollover before setting of transport vehicle on a rollover platform.

*Keywords: The bus, safety of bus construction, strength, deformation, a centre of mass.*

Bandurin M.A. «Final and element modeling intense the deformed condition of the Tashlinsky dyuker on the channel Pravo-Egorlykskom»

At present the results of a visual inventory of most of the water bearing structures in Russia is in a state that requires a major overhaul. Practice shows that, after this period of time, facilities continue to operate without being replaced by new ones, and sometimes even without a thorough reconstruction, to restore and reconstruct the existing structures on the basis of emerging new and previously used reliable technology. The object of the study was considered Tashla underwater pipeline right-Yegorlykskaya channel. In the numerical formulation of mathematical experiment task was to scientifically determine the reliability of structures for such a long life (50 years), with different types of defects and damage. All calculations were performed on a certain software product SolidWorks, which is based on the method of finite elements and superelements.

*Keywords: hydraulic structures, water-conducting channels, inverted siphons, non-destructive inspection methods, modeling, technical condition.*

Altuhov S.I., Jurabaev K.T. «Formation and regulation of process of a diversification of innovative activity of the industrial enterprise»

The main maintenance of a diversification of production as activity of subjects of managing is considered. Being shown in purchase of the operating enterprises, the organizations of the new enterprises, redistribution of investments in interests of the organization and development of new production on available floor spaces. The most important organizational economic targets of a diversification of management are presented by innovative activity of the industrial enterprise.

*Keywords: diversification of management, production diversification, financial and economic purposes of a diversification, technological purposes of ensuring flexibility of production.*

Bandurin M.A. «Problems of an assessment of a residual resource it is long maintained water carrying out constructions»

In article the key parameters necessary for an assessment of a residual resource are considered and the conclusion, about lack of an effective method of an assessment of a residual resource for hydraulic engineering constructions is drawn. An overall objective of carrying out operational monitoring of a technical condition of water carrying out constructions are identification of deterioration of degree of physical wear, the reasons causing their condition, the actual operability of elements and development of actions for providing their various operational parameters, and also the description of a technical condition. The risk of failures and defects on vulnerable objects which many water carrying out constructions - tunnels, channels concern, dyker, lotkovy channels and pipelines is most dangerous.

*Keywords: the hydraulic engineering constructions which are water carrying out channels, nondestructive control methods, a residual resource, modeling, a technical condition.*

Rudakov M.N., Shegelman I.R. «Formation of a technological platform of wood sector of Russia as factor of increase of the income of timber industry regions of Russia»

Based on the analysis of European in forming technological platform shows the feasibility of forming the national technological platform for the forest sector in Russia.

*Keywords: European technological platform, the forest sector, forest industry.*

Shahraeva A.E. «A problem of an assessment of results and efficiency of work of the personnel in innovative process of the industrial enterprise: terminological aspects of research»

The results of the apparatus critics of the innovative management analysis are presented from a problem-solving position of the results appraisal and work effectiveness of the personnel at different phases of the innovative process, the author's position is done to specify the main definitions and references.

*Keywords: evaluation (appraisal) of the labor results, labor productivity (effectiveness), staff (personnel), management, innovation, innovative process and cycle, innovative activity.*

Voronin I.A. "Development of Petrozavodsk state university in the field of improvement of processes of wood cargo transportation»

The review of the researches which are carried out in Petrozavodsk the state university in the field of improvement of wood cargo transportation.

*Keywords: motor transport, road trains, modeling, optimization.*

Mocrecov A.V. «An error of definition of a corner of location of a source of a sound microphone system with algorithm of existential processing of a signal»

For the previously proposed microphone system with adaptive control algorithm was investigated directional characteristic accuracy of the determination the angle of the sound

source. The dependences of the absolute deviation on the angle of signal arrival of the sound source, defined by the spread of sensitivities directional microphone system were received.

*Keywords: adaptive algorithm, microphone system, accuracy of localization, control characteristic orientation, directional microphone, space-time processing.*

Petrov S.V., Reshetnikova I.V., Vohmin V.S. «Application of electrotechnologies at a methane sbrzhivaniye of a waste»

An intensive method of disposal of cattle farms in a single cycle, to produce non-conventional source of energy (biogas) is proposes. Comparative characteristics of biogas at various ways of heating the biomass and the different types of bioreactor are reduced. A scheme of the physical model of the process of methane fermentation are considered.

*Keywords: waste, technology, installation, heating, biogas, psychrophilic, mesophilic, thermophilic, temperature, energy source.*

Bukatov A.A., Gridchina E.E., Zastavnoj D.A. «Methods of skeletal animation for transformation of polygonal surfaces of three-dimensional models»

The paper covers the development of geometry-based skeletal animation algorithms for deforming 3D models. Linear Blend Skinning technique being widely used, much attention is given to the method description and its shortcomings. The paper gives wide coverage to the state of the art in geometry-based skeletal animation algorithms.

*Keywords: skeletal animation, skinning, geometry-based algorithms, character animation.*

Mariev A.A. «About possibility of increase of efficiency of the automatic intonational analysis of speech»

Current article presents the results of research, aimed at raising the effectiveness of automatic prosodic analysis of speech. During the research the PC program that performs recognition of seven emotional states using 16 features of speech signal was developed. Effectiveness of recognition of seven emotional states was estimated during the experiment with material of Berlin database of emotional speech. The result showed rising of mean probability of correct recognition, in comparison with known analogs.

*Keywords: speech, intonation, emotions, speech.*

Kruglikov A.A., Lazorenko G.I., Shapovalov V.L., Hakiyev Z.B., Yavna V.A. «Intellectual systems of monitoring of high railway embankments»

The work is devoted to the development of an intelligent system for monitoring high railway embankment, which allows analyzing its condition and making early solutions to manage the safety of vehicles. The main features of the system and its difference from known analogs is taking into account the dynamic effects of vehicles on a high embankment at different climatic conditions. This paper describes the main stages of building the monitoring system, which includes: selection of objects for monitoring, computer modeling of the interaction of the rolling stock and a high embankment, the algorithms required for the development of management decisions.

*Keywords: high embankments, risk assessment, destruction, monitoring, computer modeling, intelligent system.*

Tulikov A.V., Kuzminov A.S. "Ensuring power efficiency at placement of orders for needs of the city of Moscow on the basis of standards and marking of power efficiency"

The article deals with the analysis of current legislative mechanisms of state policy implementation in the sphere of energy saving and energy efficiency. A number of crucial measures highlighted needed to ensure fulfillment of federal legislation requirements on energy efficient equipment and products while implementing state and municipal procurement procedures. The article notes problems occurring while implementing those requirements resulting from the absence of energy efficiency criteria and products life cycle cost while assessing and comparing applications. The article analyses the role and capacities of Moscow city which was selected as a pilot region to introduce energy efficiency labels and to ensure legislative and normative framework for order placement for municipal needs on the basis of energy efficiency standards and labels. The article points out that currently valid authority of the city touches on not only effective implementation of federal legislation but also issues related to the development of regional legislative framework.

*Keywords: energy saving, energy efficiency, label, legislation, normative framework.*

Chigik M.A., Volkov V.Ya. "Graphic optimizing models of multiple parameters technological processes of light industry"

Methods of mathematical (geometric) modeling are often used in the current research of multivariate processes and their optimization tasks combined with traditional mathematical methods of experiment planning. This simulation is carried out by methods of descriptive geometry, its practical values a graphical representation of the functional relationships of the quality from factors and parameters that define a process with number of variables more than three. Definition's algorithms of the optimization based on the Radishchev drawing in the article are given to ensure the visibility of images and solve certain technical problems. The graphical model of the process optimization of joining parts of garments was constructed.

*Keywords: Technological process, optimization, modeling, descriptive geometry, multidimensional space, Radischev drawing, hyper plane, hyper surface, algorithm, factors, parameters.*

Larina L.V., Pershin V.A., Smirnov V. V. "Criteria of an assessment of efficiency of processes of the intensified gigrotermichesky processing (YOKE) at stages of formation of demanded quality of products"

Methods of mathematical (geometric) modeling are often used in the current research of multivariate processes and their optimization tasks combined with traditional mathematical methods of experiment planning. This simulation is carried out by methods of descriptive geometry, its practical value is a graphical representation of the functional relationships of the quality from factors and parameters that defines a process with number of variables more than three. Definition's algorithms of the optimization based on the Radishchev drawing in the article are given to ensure the visibility of images and solve certain technical problems. The graphical model of the process optimization of joining parts of garments was constructed.

*Keywords: Technological process, Optimization, Modeling, Descriptive geometry, Multidimensional space, Radischev drawing, Hyper plane, Hyper surface, Algorithm, Factors, Parameters.*

Klochkov Y.P. "Organizational and economic foundations of Lean Production implementation in mechanical engineering industry"

In present-day management practice of the competitive industrial enterprise the priority is given to Lean manufacturing tools, which allow improving the quality of products or services without capital expenditures, reduce cost and lead time by eliminating waste in inner processes of the company. This article analyzes the dynamics of the main technical and economic indices of KAMAZ, OJSC. The correlation and regression analysis of dynamic series has been conducted by means of production system KAMAZ development indicators. It has been proved that the suggested methods of Lean manufacturing management contribute to waste reduction, effective resources management and personnel activation.

*Keywords: lean manufacturing, lean production, kaizen.*

Scherban E.M., Goltsov Yu.I., Tkachenko G.A., Stelmakh S.A. "Prescription technology factors and their role in formation of properties of the foam concretes received from mixes, processed by variation electric field"

The analysis of the effectiveness of duration of electric vibration treatment of foam concrete mixture is carried out. The optimum fraction of filler for preparation of foam concrete mixture processed by variable electric field is defined. The influence of a type of cementations matter by means of a comparison of domestic cement and Turkish (CEM I-42,5R) cement is analyzed. It is established that at a short-term electric vibration treatment of foam concrete mixture there is a consolidation of the material of interporous partitions that leads to some increase in strength of foam concrete.

**Keywords:** *Grain-size distribution, interpore partition, electric vibration treatment, ductility of slurry, clear portland cement, synthetic frothier, treatment efficiency.*

Sereda A.Yu., Detyuk K.V. «Glonass-K KA onboard information and navigation complex»

This article consider of the purpose appointment, structure construction and principles functions airborne information-navigation complex (AINC) spacecraft (SC) «Glonass-K».

*Keywords: Airborne information-navigation complex (AINC), SC «Glonass-K», satellite radio navigation system (SRNS) GLONASS, L1SF/L1OF, L2SF/L2OF, L3OC.*

Ryabokon A.S. "Modeling when developing the ultrasonic mobile monitor of speed of a blood-groove»

The simulating applications are considered when mobile bloodflow monitor designing. Doppler techniques simulating, circuitry simulating and insonation object modeling are presented. The results of simulation are approved during experiments, and results of modeling are applied when receiving and transmitting path of mobile bloodflow monitor test and piezotransducer parameters experimental estimating.

*Keywords: Simulating, mobile blood flow monitor, Doppler techniques simulating, circuitry simulating, insonation object model.*

Shegelman I.R. "To creation of methodology of the analysis and synthesis of patentable objects of equipment"

We demonstrate the effectiveness of use for analysis and synthesis techniques of patentable subject-functional process analysis, the recommended sequence of rational analysis to the formation of the final stage of patentable technical solutions.

*Keywords: analysis, invention, synthesis, object techniques, patents.*

Vasilyev A.S. "The Functional and technological analysis of the equipment for a group okorka of wood"

Methodology of functional and technological analysis is supplemented with allowance for patent information concerning barking equipment, innovative modernization matrix of barking equipment designs for timber group processing is described, and guidelines for barking equipment improvements are indicated.

*Keywords: wood, bark, timber, barking, barking drum.*

Vasilyev A.S., Romanov A.V., Schukin P. O. "The perspective directions of creation of ecologically safe transport and packing sets for transportation and storage of the fulfilled nuclear fuel"

Promising directions of making the environmentally sound shipping packages for spent nuclear fuel transportation and storage are considered.

*Keywords: shipping package, spent nuclear fuel, transportation and storage.*

Shegelman I.R., Vasilyev A.S., Schukin P. O. «Specifics of the complex project on creation of hi-tech production within integration of university and machine-building enterprise»

An experience of Petrozavodsk State University's integration with machine building enterprise «Petrozavodskmash» in the frame of complex project «Resource-saving production's establishment of environmentally friendly shipping package for spent nuclear fuel transportation and storage» implementation is analyzed.

*Keywords: high-tech production, innovation, integration, shipping package, spent nuclear fuel.*

Gornostayev V.N. «The short review of researches of transformations in wood sector of Russia»

The study provides an overview of transformations in the forest sector in Russia, performed by scientists at Petrozavodsk State University, discussed their proposed classification of the historical stages of forest transformation and directions for further research.

*Keywords: research, history, classification, forest sector transformation.*

Shegelman I.R., Schukin P. O. «Analysis of the market of consumers of wood fuel»

The importance of domestic competitive machinery market entry is shown in the paper. It is shown that the domestic competitive machinery, which provides complex harvesting of round and fuel wood, market entry is the important direction in solving the problem of wood consumer's market development in the capacity of biological fuel.

*Keywords: wood fuel, preparation, consumers, market.*

Makarov Y.N., Strotsev A.A."Technique of theoretic-game justification of conditions of carrying out competition"

A method of constructing two-level game-theoretic model of the tender. The problem is solved from the viewpoint of the organizers. A comprehensive criterion, including rating and probability of execution of the proposal.

*Keywords: game-theoretical optimization, matrix games, game-theoretic tender's model.*

Gorbulin V.I., Evdokimov R.A., Fadeev A.S."To a question of development and operation of perspective means of removal on the basis of inter orbital transport system in problems of expansion and completion of orbital systems of spacecrafts"

Prospects are discussed of interorbital transportation vehicles based on reusable space tugs with nuclear electric rocket propulsion for spacecraft delivering to the high orbits. The potential advantages of this kind of tugs are demonstrated comparing with the traditional spacecraft launch technologies. The issues of the nuclear interorbital tugs development are examined with the special attention towards the baseline information uncertainty, as well as of the nuclear space tugs ground processing considering requirements of the nuclear and radiation safety.

*Keywords: Geostationary orbit, spacecraft, interorbital space tug, parametric optimization, radiation safety, upper stage, interorbital transportation means, nuclear electric rocket propulsion, power and propulsion system.*

Protalinsky O. M., Azhmukhamedov I.M."The system analysis and modeling of poorly structured and badly formalizable processes in sotsiotekhnicheskyy systems"

The proposed approach to the study of social engineering systems to meet all their basic features. Blurred structure of social engineering system reflects the fuzzy cognitive model; Fuzzy connection effectively evaluated using weights Fishburne; "blur" element values system and its functioning is overcome by introducing linguistic variables and their term-set fuzzy classifiers.

*Keywords: system analysis, poorly structured and poorly formalizable processes, sociotechnical systems, fuzzy cognitive modeling.*

Markina Yu.I."The GPS aerial of circular polarization in a range 1,2 - 1,6 GHz"

The paper presents the results of modeling and measuring the characteristics of a prototype flat spiral antenna designed for reception of signals in the GPS station. The proposed design consists of a combination of Archimedean and logarithmic spirals, and provides working frequencies of 1.2 GHz and 1.6 GHz, and the reception of signals with any kind of linear polarization. The basic characteristics of the antenna, modeled in the microwave CAD

package HFSS v.10, and the characteristics obtained in the measurement of the antenna prototype. Modeling results were confirmed by the measurements of the experimental model of the antenna.

*Keywords: antenna, GPS, GLONASS, spiral antennas, antennas GPS station, antennas of circular polarization.*

Korolev A.N., Pavlov S. V. "The organization of polygon working off of perspective technologies of coordinate and time and navigation providing in the Rostov region"

The article deals with development of augmentations for global navigation space systems within special ground, created in Rostov region. These technologies have been designed by JSC "Russian Space Systems" as part of Russian System for Differential Correction and Monitoring. In the article determined the tasks and considered the scheme of ground development advanced technologies of coordinate, time and navigation support in Rostov region.

*Keywords: global navigation space system, user navigation equipment, ground development, technologies of coordinate, time and navigation support, augmentation system.*

Sinyutin S.A. "The analysis of RR of an interval number of the driver in the conditions of strong hindrances by means of wavelet-transformation»

This article analyzes the condition of the vehicle driven by methods using data RR-interval time series implementing wavelet-transform. The results of the discrete Wavelet-transform with the Daubechies wavelet of the fourth order are considered.

*Keywords: wavelet-transform, RR-interval series, interval diagram.*

Klevtsov S.I. "Modeling of algorithm of short-term forecasting of change of the fast-changing physical size in real time"

The model and the algorithm of short-term forecasting is developed for definition of physical size which characterizes a condition of technical object. The model is based on use of smoothing time numbers. Features of adjustment and model use are defined. The resulted parities and the algorithm of short-term forecasting are focused on data processing in the microcontroller as a part of the microprocessor module. Processing is carried out in real time. Modeling has shown efficiency of the offered approach to forecasting.

*Keywords: forecasting, algorithm, a time number, smoothing.*

Yagudin R. R. "Optimization of configuration of three-dimensional geometrical objects on the basis of a godograf of a vector function of dense placement"

The current work considers the problem of arrangement optimization of non-convex polyhedrons into a minimal height parallelepiped container. The no-fit polyhedron based algorithm is proposed to solve described task. The no-fit polyhedrons are used not only for providing conditions of the polyhedrons mutual non-intersection but also for finding the placement points. The current paper provides the block diagrams and the pseudo code of the algorithm. Some examples and computational results are also given for public input data.

*Keywords: packing, no-fit polyhedron, non-intersection, optimization, arrangement.*



Nalivayko E.V., Bobrikova I.G., Selivanov V. N. "Mathematical model of equilibrium ionic and colloidal structure of ammoniyny electrolit for alloy electro sedimentation zinc-nickel"

Mathematical model is developed, which allows to calculate the equilibrium ionic and colloid composition of ammonium electrolytes for electro deposition of alloy of zinc-nickel and evaluate the impact on the composition of the electrolyte values of pH and total concentrations of the components.

*Keywords: modeling, colloidal particles, electroplating, zinc-nickel alloy.*

Porshnev S. V., Jacob D.A."About a choice of methodology of creation of information models of the check systems used for management of human streams of high intensity»

Management of large flows of people involves the use of automated software and hardware systems. The main aspect of the design of such systems is considered in paper, it also analyzed family of IDEF methodologies as annotation for building models of their functioning. It identified the key disadvantages and further refinement of the model.

*Keywords: access control system, hierarchical model, IDEF, system analysis methodologies.*

Nalivayko E.V., Bobrikova I.G., Selivanov V. N. «An intensification of electro sedimentation of an alloy zinc-nickel from ammoniyny electrolit»

Regularities of electrode position of zinc-nickel alloy in electrolytes containing colloidal particles electro-besieged metals are studied. Developed by the electrolyte, which allows to reduce concentration of the basic components in 2 times and to increase speed of process in 2, 5 times.

*Keywords: zinc-nickel alloy, colloidal particles, speed of electrode position.*

Korniyenko F.V."Increase in efficiency of the isparitelny condenser of kompressionny refrigerators"

The question of increase of efficiency of the cooling process in the compression refrigerating machines and household refrigerating appliances. Describes a new original method of cooling of the condenser vapor-compression refrigeration machines, which is due to wet the surface of the capacitor with its further blow. Shows the complexity of the theoretical analysis of the proposed method of cooling and substantiated the necessity of experimental studies of the process of cooling of the refrigerant in the capacitor.

*Keywords: compression refrigerator, evaporative a capacitor, a new method of cooling refrigerant, energy performance, the efficiency of the cooling.*

Drovnikov A.N., Trifonov A.V."Creation of the static power characteristic of the hydraulic booster with the passer of impact of the streams executed for jet installation"

In this article the method of constructing the static characteristics of the jet set, and built its dependence on the distance from the machined surface to the nozzle, recommendations and conclusions.

*Keywords: Fluid Technology, static characteristics, surface treatment and nozzle – gate.*

Drovnikov A.N., Ostanovsky A.A. "Creation of a grinder of dynamic self-crushing"

This article provides an analysis of the existing grinding equipment, is a diagram of the chopper on the basis of dynamic autogenously use in its construction a closed loop mechanism, which allows to reduce power consumption by using energy circulation, which appears in the kinematic mismatch of the upper and lower branch of the circuit, made a preliminary analysis of test performance of the prototype designed machines.

*Keywords: grinder, dynamic self-crushing, crushing and grinding equipment, specific energy consumption, mechanisms, closed circuit circulation of energy.*

Kolos A.F., Mirsalikhov Z.E. "Research of deformity properties of lessovidny sandy loams at influence of vibrodinamicheskoy loading from a high-speed rolling stock"

The effect of load on vibrodynamic high-speed trains passing on the deformation characteristics of loess-like sandy loam used in the construction of railway track sub grade. The numerical values "of the sensitivity of loess-like sandy loam from a position of influence on the deformation properties at different values"

*Keywords: Loess-like sandy loam, the modulus of deformation, vibrodynamic load triaxial compression method.*

Tulikov A.V., Kuzminov A.S. "Legislation development in the field of information support of actions for energy saving and increase of power efficiency"

Necessity of creation and development of information support mechanisms for improving energy efficiency and energy saving processes at governmental level is proved in the Article. Legislative base defining creation, functioning and funding conditions for a state information system in the field of energy saving and improving energy efficiency has been analyzed in the Article. Main aspects of submitting information for inclusion into the state information system in the field of improving energy efficiency and energy saving have been analyzed. A range of respondents on a federal level, on the level of subordinate entities of the Federation and on municipal level who are to submit such information has been specified. Preconditions for amending legislation towards creating and using state information resources in the field of energy saving have been pointed out.

*Keywords: energy efficiency, energy saving, information system, legislation.*

Niteysky A.S., Panchuk K.L. "Contact of lineychaty being developed surfaces"

Questions contact ruled developable surfaces along their common generator. The properties of such surfaces and their striction for the initial order of contact. The obtained results can be used as a basis for engineering design of complex engineering ruled surfaces, consisting of segments of line, docked on the conditions of contact.

*Keywords: ruled surface, the order of contact, the dual vector differences, ruled strips.*

Kovyazin A.V. "Preconditions to creation of geodetic monitoring of stability of dumps taking into account precalculation of its deformed condition"

The paper proposes a technique for modeling the stress-strain state of dumps for further organization of geodetic monitoring their stability. The comparative analysis of simulation results and instrumental observation is shown.

*Keywords: stress-strain state, geodetic measurements, strains, subsidence, land surface displacement.*

Gdansky N.I., Karpov A.V., Bugayenko A.A. "Algorithm of creation of cubic interpolatsionny splines in problems of management of work of drives with forecasting of dynamics of loading"

When using the prediction in the control of the rotational motion is necessary to construct two smooth trajectories passing through the previously measured its nodal points. As a piecewise polynomial curve that provides the desired smoothness, consider interpolating cubic splines, which are between nodes represent a cubic parabola, continuously connecting the nodes with the smoothness of degree 2. In imposing additional boundary conditions, these splines minimize its total curvature.

*Keywords: Interpolation splines, management tasks, prediction algorithms, kinematic characteristics, Hermit splines.*

Gdansky N.I., Karpov A.V., Bugayenko A.A. "An optimum interpolirovaniye standard the loudspeaker in a problem of management with forecasting"

The article describes the best ways spline interpolation trajectories of angular movement in the key points for solving motion control rd to the prediction of the external load. As benchmarks we examine the accuracy of the approximation of the drive and the complexity of calculation of coefficients of splines.

*Keywords: Trajectory, Lagrange splines, splines Ferguson, interpolation.*

Poleshkin M. S., Sidorenko V. S. "Mathematical modeling of the automated item hydraulic actuator of target mechanisms of cars with a contour of hydraulic management of the increased efficiency"

In this paper the mathematical model of automatic positional hydrodrive of actuators machines with hydraulic control circuit of high efficiency original design. The model is formed with a view of the developed structure of the hydraulic drive and control system comprises three subsystems: a mechanical, hydraulic and control. Using the software package Matlab 2012 investigated position loop is characteristic of the rotary mechanism for the technological equipment according to the criteria of speed and accuracy.

*Keywords: mathematical modeling, position hydrodrive, the control of unit, accuracy, high-speed performance.*

Sizonenko A.B."High-efficiency skhemotekhnicheskoy realization of the cryptographic multihigh-speed generator of scalar work"

The article is devoted to improving the performance of cryptographic transformations performed encoders stream ciphers made on the basis of the inner product generator. Such generators are a variety of clock-controlled shift register that can improve the statistical properties of the resulting sequence. The disadvantage is that to get a one character of sequence to submit several clock. The scheme of the inner product generator, based on the algorithm reimplementing feedback shift register recurrence, which allows for one step to produce a single character of sequence, is constructed and described in this article.

*Keywords: parallel logical computations; cryptographic transformation; Linear Feedback Shift Register; stream ciphers; clock-controlled shift register, inner product generator.*

Odlis D. B. "Some features of processes of disintegration in transformation economy"

We show that the sharp increase in the number of businesses, due to the disintegration processes in transformational economy of Russia, can disrupt their reproduction, which creates conditions for large-scale integration.

*Keywords: disintegration, integration, enterprise transformation, economy.*

Drovnikov A.N., Trifonov A.V. "Pilot studies of a sample of a nozzle for jet processing of objects of housing and communal services"

This paper presents the methodology of experimental studies of the sample jet nozzle for handling of objects of housing - communal, as well as graphs of response surfaces of the objective function, recommendations on the choice of parameters adopted by the factors.

*Keywords: Fluid Technology, jet nozzle, surface treatment and nozzle – gate.*

Tarasov N.A., Edelev D.A. "A clustering of regional economic activity in the conditions of economy globalization"

Modern problems of reproduction processes at regional level taking into account globalization requirements are considered in article. The main attention is given to the analysis of preconditions of cluster development of regional economy which in the conditions of globalization become the major reproduction factor.

*Keywords: regional economics, total regional economics, global economics, basic fund, regional cluster.*

Dzreyan A.Kh. "Institutional development of modern chains of deliveries of the consumer market: logistic aspect"

The article considers the problems of institutionalization of the consumer market of Russia. A scientific assessment by the author of the resulting vector of modern evolution of the institutional structure of supply chains in the consumer market is based on the determination of how much the forming composition of the commodity distribution network meets the rational understanding from the point of view of logistics of optimality arising in this process and institutional isolation of certain groups of operations.

*Keywords: consumer market, commodity distribution network, the supply chain.*

Vorobyev S.P., Horoshko M. B. "Updating of model of vector space for ranging of documents"

Rational organization of information retrieval is quite important scientific, technical and practical problems, which are inextricably linked to the performance and the speed of decision-making, both in management and in other areas of human activity. Fairly widespread vector space model considered in this article.

*Keywords: vector space model, model search, information retrieval.*

Frolova E.G. "Problem aspects and ways of development of the Russian ports of the Black Sea and Azov pool"

The article considers the basic problems of modern development of Russian ports in the Black sea-Azov sea basin, there are substantiated directions and ways of increasing the effectiveness of their work in the conditions of active development of the Sea main routes of International transport corridor TRACECA. As an important factor of modernization of existing and construction of new port capacities of Russia in the Black sea-Azov sea it is marked an index of predictability of dynamics of growth of the domestic economy and the prospects for the further increase of transit of hydrocarbon stock from minefields of the Caspian sea and the Caspian sea countries through the North Caucasus and South regions.

*Keywords: Black sea-Azov sea basin, Russian ports, modernization, capacity, competitiveness.*

Lyashkov A.A. "Formoobrazovaniye of a screw surface of a detail angular mill"

The article contains geometric and computer simulation of helical surface corner cutter. When the geometric modeling shows how to get the analytical dependences for determination of envelope surface collection features both display the hyper surface in the hyper plane. Shows the polygonal model envelope and one of the sections of hyper surface. Computer solid modeling process forming opportunity of obtaining models srezhaemyh layers and their quality characteristics.

*Keywords: Computer modeling, shaping, angular milling, helical surface.*

Demakov D. V. "Short analysis of researches of problems of development of regional mechanical engineering"

A brief analysis of development problems of the regional engineering. The basis adopted engineering complex of Karelia. A relationship between the state and federal aspects of engineering.

*Keywords: analysis, engineering, development, regional.*

Rakhimov K.R. "Optimum control of empty cars of various forms of ownership»

Semicars, as is known, are a universal rolling stock. For today in RZD and in transport HIGH SCHOOLS of the country works of research character on regulation and operation optimization by a universal rolling stock are actively conducted. In article a task in view on optimum control empty cars of various patterns of ownership with use of a transport problem.

*Keywords: Park of semicars, cars own involved (BCII), empty a traffic volume, the First cargo company (ИГК), the Second cargo company (БГК), and the basic plan.*

Kadyrov R. R., Lyapin A.A. « Features of dynamic excitement of layered environments internal sources of fluctuations»

The features of the construction of effective solutions to the problems of excitation of multi-media internal sources of oscillations. Examples of numerical calculations of the displacements and strains in the environment depending on the position of the source and observation point.

*Keywords: many layers of base, internal source, harmonic oscillations.*

Timoshenkov S. P., Tikhonov K.S., A.Yu.Titov, Petrov V. S. "Development of technologies of internal installation of beskorpusny crystals on flexible switching payments"

This article discusses the technology developed in Russia, internal mounting elements (crystal chip) on the printed circuit board (PCB). Due to a number of advantages, in many cases, the internal assembly is able to replace the classical surface-mount technology. authors also provides the development for implementation of considered technology on flexible printed circuit boards.

*Keywords: internal installation; conformal boards; polyimide; frameless crystals; printed circuit board.*

Butakova M. D., Zyryanov F.A. "Research of properties of concrete mixes and concrete on the basis of a fine-grained mineral waste of mining"

The results of screenings' modifying made by fractionating and improving of the grains' form are given. The comparison of the main properties of sand, ordinary, fractionated and modified fractionated screenings are presented. The influence of different types of fine aggregate on mobility and keeping of concrete mixes, durability of a concrete at early and branded age is defined.

*Keywords: screenings, modifying, fractionated, hollowness, water requirement, concrete mixes, mobility, keeping, concrete, strength, density.*

Krupko A.M. "Researches of the directions of increase of efficiency of motor transport of the wood"

The model of optimization of a cargo transportation of production of the timber industry enterprise which describes process of transportation of wood from wood-procuring enterprises to wood-processing enterprises is offered in this article. Search of an optimum multiple contour of a transport network is considered in model.

*Keywords: mathematical model, optimization of a cargo transportation, automobile forest transport, multigrocery transport problem.*

Mirsalikhov Z.E. "Features of distribution of fluctuations in a road bed of the railway way constructed from lessovidny soil in the Republic of Uzbekistan in the conditions of high-speed movement of trains»

To assess the strength and deformability of the railway road bed must have analytical expressions for calculating the oscillation amplitudes at any point in the road bed and beyond. The results of experimental determination of the amplitudes of the oscillations in the sub grade of sandy loess sin the Republic of Uzbekistan. Shows plots of the decay amplitudes of the oscillations in the sub grade and beyond by passing high-speed trains. The analytical dependence of the calculation of the amplitudes of the oscillations.

*Keywords: Embankment, roadbed, the amplitude oscillation damping, vibrodinamika, loess-like sandy loam.*

Butenko D.V. «Use of an inversion multidimensional classification in conceptual design»

The article is devoted to the methodology of construction of fields of knowledge through the use of procedures inversion, allowing to most fully present the essence of the studied

object, its inner content, expressed as a unity of diversity contradictory properties ensuring its integrity required for the generation of new knowledge as an increase to the number of criteria for the classification and, accordingly, the space of the classification.

*Keywords: conceptual design, fields of knowledge, classification, inversion.*

Tursunov H.I. «Investigation of the oscillatory process in the railroad ballast, clogged sand dunes»

A special place to identify the characteristics of the oscillatory process of the ballast material, you need to take, first of all, the nature of the process fluctuations. Its identification contributes to the elucidation of their causes, it is important to assess the impact of fluctuations on the properties and condition of the ballast. Knowledge of the nature of the oscillatory process can continue to simulate it in the laboratory to determine the degree of reduction of the strength properties of the ballast material, clogged sand under the influence of vibrodynamic load, with the passage of rolling stock.

*Keywords: Track bed, crushed granite, amplitude, oscillation, damping of oscillation, vibrodynamics.*

Grishina T.G. «Modeling and optimization of cycles of development of decisions at management of the automated production»

Optimization of cycles of development of decisions at management of the automated production is considered. Dependence of validity on option of the organization of process of development of the decision is considered. Statements of optimizing tasks for definition of distribution of time of obtaining the decision for various contours of management are given.

*Keywords: optimization, management cycle, model, process of development of decisions.*

Schukin P. O., Demchuk A.V., Budnik P. V. «Improving the efficiency of processing of secondary waste logging on the fuel chips»

Two basic problems of using secondary waste logging are considered in the paper. It is secondary waste logging are contaminated mineral impurities and high cost of its collection. New technology of processing of secondary waste logging is described in the paper. The technology allows these problems.

*Keywords: secondary waste logging, logging, processing, mineral impurities, chipper, fuel chips.*

Manzhula V. G., Krutchinsky S.G., Savenko A.V., Voronin V. V. «The interferometric system interface definition of the relative coordinates of radio-emitting objects»

The paper contains a mathematical formulation of the problem of synthesis interferometric determination of the relative coordinates of the radio-emitting objects. Option structural implementation of the interface for it to work in real-time microcomputer-based system of passive location proposed. Version of the algorithm operation interface includes a primary carrier detect and calculate the phase difference between the received signals was proposed. Hardware requirements are formulated its implementation.

*Keywords: interface structure, the coordinate, algorithm, the interferometer, radio-emitting objects.*

Vasiliev A.S. «On the theorization of group wood barking»

Mathematical models describing the process of group wood barking in the barking drums are suggested.

*Keywords: group barking, mathematical model, barking drum.*

Manzhula V. G., Pugachev I.B., Prokopenko N. N. «Synthesis of variability of the operational amplifier circuit with low input offset voltage»

The paper discusses options for the synthesis of op-amp circuits, with the effect of their own compensation to the systematic component of the voltage offset and drift in temperature and radiation effects. In the analyzed operational amplifier without a significant increase in the number of elements significantly improved the accuracy of the static and the voltage gain in comparison with the basic scheme. The results of computer simulations have confirmed the qualitative analysis of the considered circuit design. The proposed options for the implementation of operational amplifiers based on different types of voltage-current converters allow the designer to synthesize electronic devices with desired accuracy and dynamic characteristics of the light conditions.

*Keywords: operational amplifier, the synthesis, the offset voltage, the simulation, the inverter, the compensation.*

Vasiliev A.S., Shegelman I.R., Romanov A.V. «Some ways of damping devices for large-size containers modernization»

Work results of technical decisions concerning improvement of damping devices for large-size containers in order to protect their contents from damage research are provided.

*Keywords: container, damping device, shipping package.*

Krutchinsky S.G., Zhebrun E.A., Shakursky M.V., Prokopenko N. N. «Two-channel precision converter voltage-to-pulse»

In this paper for the solution of the transformation "voltage-to-pulse" is proposed implemented in CMOS basis (technical process SGB25VD) structure based on high-frequency converter and comparator multiplexer with symmetrical hysteresis. Increasing the accuracy of the transformation achieved by the proposed method switching input voltages, excluding the through-analog switches. The results of computer simulation confirmed the effectiveness of the developed structure. Practical implementation of an analog-to-digital converter has shown that the proposed method of construction reduces the technological requirements for the components of the system-on-chip and increase its productivity.

*Keywords: system-on-chip, analog-to-digital converter, structure, multiplexer, switching, measurement error, comparator, integrator.*



Ilchenko D.P. «Introduction of optimization performance evaluation of investment in modernization of enterprises including energy»

In this paper the results of introduction of energy-saving technologies as part of enterprise modernization are elaborated using statistical modeling with specific index of investments referred to the cost of annual electricity of the facility, the profit factor and the absolute profitability indicator from the technology introduced. The graphical mapping technique of cost-effectiveness of modernization projects for various companies is reviewed.

*Keywords: energy resources, statistical modeling, investment, modernization, profit margins, energy-saving measures.*

Krutchinsky S.G., Prokopenko N. N., Sukhinin B. M. , Budyakov P. S. «High-frequency SiGe-selective amplifiers with low bandwidth»

Represented in the block diagram of the election based amplifier and current amplifier input converter "voltage-current" allows you to control the central processing element pole frequency and quality factor, as in diagnostic mode parameters of analog devices, and in the mode signal processing. A variant of its circuitry implementation bipolar transistors for microelectronic performance. The results of computer simulation in Agilent ADS confirmed that on the basis of simple current amplifier in the traditional process, due to the structural features of the active elements of ongoing basic level of order can be implemented relatively high-Q units of the second order, which are easily integrated into multi-tier band filters.

*Keywords: system-on-chip, band pass filter, quality, current amplifier, the sensitivity, measurement error.*

Shakhmurzov A.M. «Increase of competitiveness of the Russian regions as strategic factor of social and economic development»

Features of regional development of subjects of the Russian Federation are considered in article. Extent of differentiation of development of the Russian regions on the main socio-economic indexes is opened. Need of increase of a functional role of competitiveness of regions for overcoming of existing gaps locates in levels of development.

*Keywords: regional economy, differentiation of social and economic development, uniform economic space, competitiveness.*

Zhebrun E.A., Milyaeva S. I., Prokopenko N. N. «High-frequency selective amplifier and band-pass filters in CMOS transistor SiGe process technology»

The paper offers a solution to the general problem of circuit synthesis for n-MOS transistor level band pass filter based on current amplifier with a limited transmission coefficient. The possibility of optimal choice of the parametric compromise. The results of modeling circuit in Cadence Virtuoso environment component-based workflow SGB25VD.

*Keywords: CMOS transistor, a band pass filter, a selective amplifier, system on chip, gain, voltage-to-current.*

Tarasov N.A. «Branch features of processes of a clustering of regional economy»

Article is devoted to definition of the basic principles of modernization of regional reproduction – to search of preconditions of increase of effect from cluster development. Thus the main attention is given to the analysis of features of processes of a clustering in a branch cut at regional level. Expediency of definition of specific goals of regional economic policy on this basis locates.

**Keywords:** regional economy, gross regional product, factors of linear correlation, branch priorities.

Krutchinsky S.G., Ustinova E.S., Budyakov P. S. Prokopenko N. N. «High-frequency bandpass RC filter on current repeaters»

This paper presents a generalized framework level band pass filter used in the construction of broadband active RC filters. The conditions that determine the potential stability of the broadband link and its parameters. A variant of circuit implementation, in which low parametric sensitivity of Q to passive circuit elements is achieved on the basis of its own compensate small-signal parameters of bipolar transistors parameters amplification. The results of computer simulations have confirmed that the principle of self compensate coupling semiconductor can significantly reduce the sensitivity of the parametric parts of the second-order band-pass filters based on existing low technologies.

*Keywords: system-on-chip, band pass filter, quality, current amplifier, the sensitivity, bipolar transistor.*

Zemlyakov V.L., Klyuchnikov S. N. «Simplified determination of parameters piezomaterial on samples of elements in the form of a disk»

The approximate formulas for determination of planar electromechanical force factor and piezomodule in the disk-form samples without Poisson coefficient evaluation of the smallest (first) frequency equation root are derived. It simplifies procedure of measurements because measurement of frequency of the first overtone isn't required.

*Keywords: piezomaterial, disk, planar electromechanical force factor, piezomodule, Poisson coefficient.*

Titov A.E., Svizev G. A., Yudin A.G., Prokopenko N. N. «Private and mutual compensation circuits in symmetric stages CMOS operational amplifiers»

The paper discusses the features of their own circuits and mutual compensation circuitry in a differential stage in CMOS transistors. It is shown that their composition can significantly increase the differential gain in symmetric cascades with a dynamic load, significantly reduce common mode gain and extend the range of operating frequencies. As an example, the evolution of the basic concept of a symmetric stage and the results of its simulation in Cadence Virtuoso.

*Keywords: micro circuitry, structural synthesis, complex-function blocks, a differential stage, a CMOS transistor, system-on-chip.*

Ivanova M. I., Bugayan I.F., Moshchenko I.N. «The analysis of a cognitive component of the student group installation to a political order at the end of 2011 in Rostov-on-Don»

The paper presents an analysis of the data obtained as a result of questioning students RGSU in late 2011. The purpose of this study is to measure the level of political tension among the

youth after the events of December 2011. 168 young people taken part in this research (men - 53% women - 47%). Age of the respondents - 17 to 19 years. The questionnaire included a subjective assessment of the following levels: participation in the political process, emotional involvement in these processes; comments of these processes, and economic prosperity, social security, life prospects. Revealed a low level of involvement of young people to the political process - 1.40 on average value. The level of emotional involvement in the political process - 2.15. The stable level of comments political processes in the family - 2.17. Received, the average level of economic prosperity and level of social security of students: 2.44 and 2.24. Assessment of life prospects is at a high level - 3.03. It is revealed, values of average all studied parameters at women are higher, than at men. Least a difference in an assessment of level of participation in political processes – 0, 1. More differs the assessment of level of social security, the difference makes – 0, 69. Thus, level of a relative deprivation among studied audience is low, and if will tension arise in student's group, first of all among men.

*Keywords: a political tension, deprivation, group installation in relation to a political order, cognitive component, questionnaire, the descriptive statistics.*

Nesterov A.A., Panich A.A., Svirskaya S.N., Malykhin A.Yu., Skrylyov A.V., Panich E.A. «Methods of the porous piezoelectric ceramics frames microstructure construction»

Influence of a method of manufacture of porous ceramic frames on the basis of system Lead zirconate titanate (PZT) on their microstructure is set. It is shown that when using a method of formation of the frame based on deleting a porophore, the microstructure of a target product depends as by nature a steam generator, and the sizes of particles of a porophore and piezo-phase. Frames with preferentially open nature of porosity create porophore systems decaying or being sublimed in case of temperature increase. If the porophore to its thermal destruction or evaporation melts, the ceramic frame will have, preferentially, closed nature of porosity. Within the second of probed methods of porous frames creation based on expansion of an amorphous phase, synthesized within a method volume «chemical construction», samples with diameter of pores from 70-90 nanometers to 450-500 nanometers and the mixed nature of porosity are received.

*Keywords: ceramic frames, piezoelectric phases lead zirconate-titanate (PZT), piezoelectric composites with connection 3 - 3 and 3 – 0.*

Prokopenko N. N., Budyakov A.S., Budyakov P. S. «Own compensation of noise of voltage reference in continuous compensatory stabilizers»

The paper discusses architecture of stabilizers, which realize the effect of own noise compensation of reference voltage. Circuits with own compensation of noise allow to reduce the noise in comparison with the classical circuits at a small values of the correction capacitor. A mathematical analysis of the proposed circuit is given. The results are confirmed by computer simulation in Cadence using transistors model of 0.6 um BiCMOS process technology.

*Keywords: voltage stabilizer, noise, system on chip, BiCMOS technology, computer modeling, proper compensation.*

Nesterov A.A., Panich A.A., Skrylyov A.V., Malykhin A.Yu. «Control methods of microstructure construction process of piezoelectric ceramics based on doped titanate lead and its electrophysical properties»

The article describes methods allows to control the degree of anisotropy piezoelectric ceramics based on doped phase  $\text{PbTiO}_3$ . As a model of the object has been selected phase of  $\text{Pb}_0,76\text{Ca}_0,24\text{Ti}_0,94(\text{Cd}_0,5\text{W}_0,5)_0,06\text{O}_3$ . The model phase was obtained by the following methods: by solid state reaction method and the chemical construction. For comparison phases obtained by these methods were used modern analytical research methods (DTA, TGA, XRF, XRD, power and tunneling microscopy, computer-program research results). Piezoceramic samples were obtained from the synthesized phases and electrical parameters were measured. Were revealed that the samples, obtained from the charge, synthesized by chemical construction had values of piezoelectric constants  $d_{31}$  and  $d_{33}$  much more than samples obtained by the method of solid state reaction.

*Keywords: piezoelectric ceramics, anisotropy, ultrasonic issue systems.*

Debiyev M. V., Arsayev S. A.-Ya., Hamsurkayev H.I., Abaykhanova L.A., Ivanova M.I., Moshchenko I.N. «The cognitive component of the perception the political order of student's group in Grozny in 2012»

The research presents an analysis of the data obtained as a result of questioning students RGSU in Grozny in 2012. In the pilot study involved 320 respondents. (men - 70% women - 30%). The questionnaire included a subjective assessment of the following levels: participation in the political process, emotional involvement in these processes; comments of these processes, and economic prosperity, social security, life prospects. Research showed the stable average level of involvement of the young population to people processes in the Republic – 2, 04 on a total average value. Level of emotional involvement in the political process – 2, 60. Level of comments political processes in the family – 2,30. Received, the average level of economic prosperity and level of social security of students. Assessment of life prospects is at a high level - 3.40. Female audience respondents give higher ratings than men, but the differences are insignificant. Observed lowering of assessments compared with studies of past years, but all parameters cognitive component relations of students to the political order are normal middle and high level. In general it shows a low level of deprivation investigated audience.

*Keywords: a political tension, deprivation, group installation in relation to a political order, cognitive component, questionnaire, the descriptive statistics.*

Krutchinsky S.G., Isanin A.S., Prokopenko N. N., Manzhula V. G. «Radiation-resistant measuring amplifier based multidifferential input stages»

The paper presents a functional diagram multidifferential operational amplifier, which in contrast to conventional operational amplifiers, has some inverting and non-inverting inputs, and provides a relatively high input voltage limit. Application of basic common-mode feedback signal allowed increasing CMRR voltage on both channels. The use of additional passive components in the emitter circuit of the multidifferential cascade possible to increase the voltage limit of the operational amplifier, the rate of increase of its output voltage to provide high accuracy ratio of the transmission channel and to improve the stability of the corresponding parameters of measuring devices based on multidifferential operational amplifier.

*Keywords: system-on-chip, input stage, radiation, amplifier, analog-to-digital converter, bipolar transistor, field transistor.*

Zotova E.V., Panasyuk L.N. «Numerical modeling of dynamic systems with a large number of degrees of freedom on pulse influences»

In this paper consider the problem of numerical simulation of dynamic systems with many degrees of freedom under pulse exposure. Addresses the issues of relevance and importance of numerical modeling to date, taking into account the magnitude of the current objectives of the study.

*Keywords: numerical modeling, dynamical systems, pulsed load.*

Ivakin E.K., Vagin A.V. "Classification of objects of low construction"

Now the close attention is paid to a subject of low construction. It is caused by that this category of housing is the perspective direction of development of housing stock of the Russian Federation as corresponds to such criteria as availability, convenience, speed of construction and environmental friendliness. On the basis of the analysis of classification signs author's classification of objects of low construction depending on a site, level the income is given, to periodicity of accommodation, existence of the land lot, quantity of floors, constructive decisions, qualities of furnish, a view of the uninhabited square, existence of additional structures, safety, such as the settlement, quality of architectural study. Questions of town-planning regulation and stages of preparation of territories of low construction are mentioned.

*Keywords: affordable housing, low construction, innovative programs, classification signs.*

Ivakin E.K., Vagin A.V. «The analysis of dynamics of housing construction in the Rostov region»

In article authors carry out the analysis of volumes of construction and housing input in the Russian Federation, on regions of the Russian Federation and the Rostov region in particular, security of the population with housing counting on one inhabitant, dynamics of input of individual housing, dynamics of the prices.

*Keywords: housing construction, analysis of dynamics of construction, individual housing.*

Ishchenko A.V. "The complex analysis of the built-up territories as means of effective town-planning planning in landslide hazard zones (on an example of Rostov-on-Don)"

In the territory of Rostov-on-Don active development is conducted by negative engineering and geological processes (landslides), as owing to natural course of processes and active technogenic influence. Creation of geoinformation system (GIS) of geological environment of the city allows solving not only a problem of reduction of volume of prospecting works under construction, but also a problem of regulation of effective planning of reconstruction of city building.

*Keywords: city-planning, level of underground waters, landslides, imitating modeling, planning the construction and reconstruction of the city.*

Kadomtsev M. I. "Research of deformation of partially zaglublenny base at harmonious influence with use of a method of boundary elements and a method of final elements"

The algorithm of calculation of embedded foundation with combined use of a method of boundary elements and method of finite elements is considered. The calculation example of embedded foundation lying on a layered half space is resulted. Distributions of displacements

under the base depending on frequency of influence and a combination of physical parameters of elastic layers and elastic half space are analyzed.

*Keywords: dynamic, vibration, frequency, ceiling, half-space.*

Kadomtsev M. I., Lyapin A.A., Shatilov Yu.Yu. « Vibrodiagnostics of construction designs»

Requirements for methods of diagnosing design increases - they should make it possible to fully assess the performance of buildings, as well as being simple and mobile, to be used during the construction, operation, maintenance and reconstruction. This work is devoted to the realization of experimental and theoretical methods for vibration monitoring of structures and the analysis of the results. The objects of study are the reinforced concrete beams and slabs, and the subject of the study - the methods of vibration diagnostics, the principle of which is to detect changes in the construction of the main dynamic characteristics. Research has shown that damage to the structure can be detected by the methods considered, using a relatively small number of monitoring points and subject to change only the fundamental mode of vibration.

*Keywords: Vibrodiagnostics, flaw detection, diagnostics, construction, beam, plate, defect, damage, vibration.*

Sheyina S.G., Kartamysheva A.V. «Model of effective management of fire safety of territories taking into account an actual state of housing stock»

The model of areas fire safety effective management taking into account real condition of the housing fund is develop dint his article by its authors. This model allows evaluation of the urban a reconstruction objects fire safety on the basis of the index method. The developed methodology makes the housing fund objects technical condition analyzing and their classifying according to the fire safety index possible; moreover it helps to emphasize the areas on the territory of municipality. The model includes a number of recommendations and fire prevention measures aim edatin creasing the level of fire safety inurbane areas.

*Keywords: urban areas, housing fund, methodology, fire safety, technical condition.*

Kostylenko K.I. "An assessment of influence of a condition of water on properties of cement and sand shliker"

Due to the increasing requirements of modern building materials increased interest in energy-efficient building materials. The dependence of the viscoplastic properties of slurries for foam concrete production on the composition and properties of the components of mix. To determine the regulatory properties of cement-sand slurries should consider the state of the water in a dispersed system.

*Keywords: Foam concrete water content, water forms of communication, water retention of cement and sand, formation of foam membrane.*

Kotlyar V. D., Ustinov A.V."Caking of a clay molding by production of a ceramic brick"

In article are offered results of research of sinter ability clayey silica clay. It is shown that the ceramic shard based on the silica clay have a low average density, increased firing shrinkage,

porosity and water absorption. Increasing the firing temperature to a large extent determines the increase in shrinkage and reduced water absorption. At least increase the density. The data presented in the paper can be a useful technology of brick factories, employees testing laboratories and design companies, geologists studying nonmetallic raw materials, as well as undergraduate and graduate students specializing in this field.

*Keywords: Silica clay, sinter ability, average density, water absorption, temperature, raw material.*

Kotlyar V. D. «Compressibility of powdery masses on the basis silica clay»

The paper presents the results of a study of powdered ceramic materials based on silica clay the production of bricks method of compression molding. It is shown that the press powders based on silica clay pressed in a wide range of moisture content, the maximum compatibility in terms of the solid phase is achieved at a certain humidity in the range of 15–30 MPa compaction pressure (depending on the type of molding boxes and humidity), the density of compacts in terms of solid phase begins to exceed the average density of the material (density in the piece), for pressing molding powders with a moisture content below the optimum, almost regardless of the specific pressure extrusion, different-density compaction can reach 4–6%.

*Keywords: Silica clay, compressibility, moisture, pressure, density, press powders.*

Kotlyar V.D., Lapunova K.A., Terekhina Yu.V. «Prospects for production of ceramic bricks figure based on the silica clay»

In article are offered the main problems arising at release of a figured brick are shown and versions of their decision. Prospects of production of a figured ceramic brick on the basis of siliceous breeds – silica clay the description of technological decisions is given by production of products by way of compression formation. Offered classification of a figured brick by a form and appointment, and also design of the most demanded forms of an obverse brick is given.

*Keywords: Figured brick, silica clay, form, pressed brick, production process, design.*

Kulinich I.I., Yazyev S. B., Yazyeva S. B. "To a question of definition of relaxation constants of the equation of communication Maxwell for rigid polymers in problems of stability"

The article shows that the viscoelastic behavior of polymers is well described by a nonlinear generalized Maxwell equation, generalized Russian scientists GI Gurevich In this paper, based on the results of experimental studies of the isothermal relaxation of thermal stresses presented a method to determine the relaxation parameters of the equation. The experiment was carried out on thin-walled tubes, with rigidly clamped ends. Heating or cooling from initial temperature to a final temperature (the temperature relaxation time) was carried out at a constant rate of heating (cooling) in a linear fashion. This work shows that the linearized theory does not give correct results.

*Keywords: Thermal stresses, the Maxwell equations relating the parameters, isothermal relaxation.*

Kulinich I.I., Litvinov V.V., Yazyev S. B. «Investigation of the stability of heterogeneous polymer rods in thermoviscoelasticity»

Solving the problem is a strong dependence of physical and mechanical properties of the polymer and the relaxation of the temperature. Significantly affect the time within which the rod is able to maintain a stable position. For example, the rod loaded with only 57% of the Euler force, loses stability at a temperature of 40°C is about 15 times faster than at 20°C. Thus, to fully exploit the potential of polymeric material to protect it from the effects of temperature.

*Keywords: thermal loading, stability, algorithm, approximation.*

Kulinich I.I., Yazyeva S. B. «Influence of a mode of stratification of a film on properties of a composite material in paper restoration»

Given technological regime layering film coating on the paper. A significant change in the properties of the composite material at deviations in the mode of layers of film. The data testifies to the fact that a change in the regime of film layers, causing a deep penetration of the polymer in the paper and a violation can nolitnosti-coating reduces the strength of the resulting complex.

*Keywords: film stratification on paper, durability on a break, composition paper basis, temperature, time.*

Litvinov V.V., Kulinich I.I. «Between the components of the surface load in the shells of revolution under moment less their condition»

Based on equilibrium equations of a shell element for the membrane theory and continuity equations of its middle surface to derive relationships between the components of the surface load in the shells of revolution. These relations are convenient to go to special cases of shells of revolution in their original ax symmetric subcritical state.

*Keywords: rotation cover, bezmomentny condition, components of superficial loading.*

Litvinov S. V., Kozelsky Yu.F., Yazyev B. M. «Calculation of cylindrical bodies at impact of thermal and radiating loadings»

Given the task of calculating the stresses in the radiation-thermal plant screen. This design, also known as «dry protection» is intended to reduce the effects of radiation and heat, generated in the reactor. A significant redistribution of stresses due to changes in elastic modulus due to the above effects.

*Keywords: thermal loading, loading of radiation, the calculation of protection for accident-mode for trouble.*

Morgun V.N., Pushenko O.V. «About the structure of the fiberfoamconcrete»

Petro graphic analysis of the structure of foam concrete, reinforced with glass dispersion and synthetic fibers showed that the real nature of the fiber controls the parameters of their structure and strength.

*Keywords: fiberfoamconcrete, structure, form pores, fiber, strength.*

Morgun L.V., Smirnova P.V., Morgun V. N. «Modern approach to fire safety of wall materials»



In article negative influence of polymeric construction materials on a human body and surrounding his environment is shown, and also results of earlier carried out tests are given. The construction material – fiberfoamconcrete, which proved as a material possessing low heat conductivity, at the expense of strong porous structure of mezhporovy partitions is revealed modern constructional and heatinsulating.

*Keywords: fiberfoamconcrete, polymers, heat insulating materials, fire safety, construction materials.*

Murzin A. D. «The principles of decision-making modeling by management social-ecological-economic risks of the development of urban areas»

Article is devoted to studying of principles of modeling of administrative decisions directed on decrease negative influence of risk-forming factors in the course of formation of the strategic directions of the development of urban areas. Principles of sustainable social-ecological-economic development of territorial systems which are a fundamental basis of economic tools of development of economic planning of control action on the risk forming factors are examined. The economic-mathematical mechanism of selection and adoption of the most effective decisions on risk management of development of urban areas on the basis of the models "expenses benefit", "risks benefit" to "efficiency of expenses" is suggested.

*Keywords: modeling principles, risk management, sustainable development, urban areas.*

Murzin A.D., Kilafyan E.A., Chayan E.A. «The mechanism of development of city territorial systems management on the basis of a social-ecologic-economic risk management conception»

Article is devoted to transformation of the concept of a risk management to the tasks of management by development of city territorial systems. The generalized schematic structure of risk management of development of the urbanized territories is considered. Need of the accounting of economic, ecological and social consequences of administrative decisions in the course of realization of strategy of development of territorial systems is substantiated. The mechanism and algorithm of formation of predictive integrated estimate of quality social-ecological-economic system as a result of realization of strategy of the development is offered, allowing essentially to reduce quantity of analyzed options of operating influence.

*Keywords: development management, territorial systems, risk concept, risk management, integrated estimate.*

Mukhanov A.V., Mukhanov V. V., Strakhova N.A. "Installation for research of radial fans"

The results of experimental studies of a radial fan, built a complete characterization on the basis of the data listed in the table confirm the theoretical concepts and calculations. Goal is to determine the total pressure created by the fan, its supply and power consumption for each test mode. Designed and built the experimental setup, the department "Electrical Engineering and Automation" RGSU, which is designed for aerodynamic testing of the fan,

*Keywords: centrifugal fan, a complete characterization of the fan, flow, pressure, section, area, speed, power.*

Naumov A.A., Yundin A.N. «Frost resistant ceramic brick of semidry pressing from clay raw materials of Shakhtinsky factory»

Results of researches on an assessment of suitability of atyukhtinsky clay raw material for production of a ceramic brick by way of semidry pressing is shown. It is defined that for receiving the ceramic brick, to GOST meeting requirements, it is necessary to enter into the mass of the mineral calcium additive. Produced a pilot batch of the facial frost-resistant ceramic bricks on Shakhtinskiy factory.

*Keywords: ceramic brick, semidry pressing, mineral additive, frost resistance, pilot-industrial testing.*

Novgorodski E.E., Trubnikov A.A. «Analysis of approaches to assessing the effectiveness of trapping hazards and prediction of air pollution work areas»

The results of the analysis of existing approaches to the determination of the efficiency of trapping pollutants at their sources of isolation, as well as the prediction of residual contamination of the air of working areas. The classification of methods for determining the effectiveness of local suction ventilation systems. Given the technological distinction between the concepts (factor "technology capture") and sanitary (factor "technological breakthrough"), the efficiency of local suction. The tasks of improving the mathematical description of both types of efficiencies.

*Keywords: pollutant, a local suction, efficiency, carbon capture, source separation, capture, simulation.*

Pobegailov O.A. «Calculation of number of shots of the construction organization»

Methods of personnel number planning are united into 3 groups in service and manufacture companies. Program complex for determination of necessary personnel number is researched. It consists of 3 parts.

*Keywords: Methods, program complex, standard, planned, number, uncertainty, workers, specialists.*

Pobegaylov O.A., Shemchuk A.V. «Formationing of the system organisation in the building and construction»

The system organization assumes formation of the scientific construction complex providing builder's competitiveness. Sated network models are perspective.

*Keywords: System organization, information, model, investments, market, management.*

Pobegaylov O.A., Pogorelov V.A. «Factors of the agglomeration of the building industry»

This article is about the influence of positive, manage mental, and negative indexes on the agglomeration in building and construction in terms of recommended mathematical model of the break-even calculation. Resulting from analysis based on the mathematical model of the break-even calculation and good examples the author showed the criteria of advisability in the agglomeration of construction organizations in terms of covered amount of working.

*Keywords: break-even point, break-even calculation in the agglomeration, agglomeration in building and construction.*

Pobegaylov O.A., Konchakovsky S.N. «Investment of capital in situations of indefinite»

Uncertainty is in the basis of economic events. Risk influences on the development of any management decision. The using of probability methods demands accurate understanding of admissible risk level.

*Keywords: Investments, resources, projects, deviation, risk, uncertainty, estimation, discounting.*

Strahova N. A., Mukhanov A. V., Mukhanov V. V. «The method of continuous monitoring of airflow in ventilation systems»

The article presents a method for the continuous monitoring of airflow in the ventilation system, that the department "Electrical Engineering and Automation" RGSU developed a method based on changes in the frequency and amplitude of the vibrations when the duct airflow. Designed and produced by the device based on piezo transducer prestressing. The principle of the device is based on the use of the frequency and amplitude of the vibrations of the air change rate of air flow. This method of continuous monitoring of air velocity in the duct registers change speed automatically and allows you to monitor the work of ventilation systems.

*Keywords: microprocessor, continuous monitoring, automatic control, speed, air flow.*

Timoshenko M. S. "Ecologic-noneconomic aspects of city building taking into account factors of ecological risk"

Analysis and evaluation of geological and hydro geological risks is a special kind of design and survey activities aimed to provide public safety, economy facilities and the environment within the areas exposed to dangerous geological and engineering-geological processes. The article deals with reduce environmental risks measures in case of dangerous geological processes. A variant of engineering-geological zoning of the urban area, depending on the state and properties of the geological environment.

*Keywords: ecology, geology, risk.*

Trubnikov A.A., Strahova N.A. «The algorithm of the model prediction of air pollution working areas»

The results of the analysis of existing approaches to solving the problem of propagation of impurities in the air and the prediction of residual contamination of the air of working areas. Presented by the rationale for selecting the method of "coarse particles" for the numerical experiment. We describe the nature and advantages of the method as applied to the calculation of the spread of contaminants. An algorithm for prediction of sanitary efficiency of the trapping of pollutants.

*Keywords: pollutant, efficiency, simulation, large particles, the Euler's equations, Lagrange's equations, numerical experiment.*

Yavruyan K.S., Filonov I.A. «Mechanical activation of a portlandcement in the device of a vortical layer»

In paper results of researches on activation of water-cement suspensions by manufacture of foam concretes nonautoclaving solidification and to increase of activity of cement by machining in electromagnetic apparatuses of a vortex band are presented.

*Keywords: machining on cement suspension, increase of durability of a cement stone, processing time of cement, re-crushing of cement, activity of cement, activation, apparatuses of a vortex band.*

Chulkova E.V. «Informational and analytical support for the program of energy efficiency in housing stock in Rostov-on-Don»

The introduction of information-analytical system "Energy efficiency" is designed to provide effective information support of management decisions in the energy efficiency of housing stock, the system is a software tool for addressing the state level in the field of energy saving in the housing stock of the Rostov region. The introduction of IAS makes a real contribution to the implementation of the program on energy saving. Development of information-analytical system "Energy efficiency" makes it possible to give complete information of the energy characteristics of the housing stock and to calculate the energy parameters for each of the buildings, simplifies the data acquisition of the energy savings potential and valuation of energy saving activities. Using the work of modern technology allows making informed decisions to adjust the strategy of energy conservation and monitoring the program of energy conservation.

*Keywords: Energy-saving, information-analytical system, the strategy of energy saving, energy performance, monitoring.*

Sheina S. G., Fedyaeva P.V. «Efficiency of energy-saving methods in high story residential buildings. »

The research contains the analysis of the main methods and ways to increase efficiency in housing stock. There is given justification of necessity of energy economy and system of the indicators that influence on a choice of energy saving decisions for residential buildings of buildings of different number of storeys. The research contains the assessment of potential of energy saving for housing stock of the city is executed, development of a classification of housing, taking into account the main energy characteristics of buildings, analysis of the effectiveness of energy-saving measures for different types of residential buildings.

*Keywords: Energy saving activities, residential buildings, techniques of a complex assessment, number of storey's of buildings.*

Yundin A.N., Kuchuyev E.V."Influence foaming agent of the various chemical nature on kinetics of hydration of the magnezialny knitting"

This article provides an analysis of the effect of different chemical nature foam on setting time caustic magnesite, as well as qualitative and quantitative composition in samples of tumors after 28 days of hydration. Shown that integrated foam Penostrom has significant slowing effect on the hydration of magnesia binders, which may adversely affect the quality of the resulting foam concrete.

*Keywords: Caustic magnesite, foamer, setting time, the quantitative and qualitative composition of the tumors, slow the hydration of caustic magnesite.*

Yazyeva S. B."Natural and synthetic polymers in restoration"

A brief review of the polymer used in the restoration of both of synthetic and natural. The advantages and disadvantages of the polymer used.

*Keywords: restoration, synthetic polymers, natural polymers, painting.*

Butko D. A., Lisov V. A., Kuryanov S. A., Krivosheev B.A «Analysis of operation of fast filters of the Aleksandrovsky water supply system of Rostov-on-Don»

The results of the study ambulances unpressurized water filter Alexander Rostov-on-Don. Studied the results of operation of rapid filters in the application of organic and mineral coagulant flocculent and exceeding design capacity of more than 1.5 times. The measures to restore the characteristics of the filter load.

*Keywords: rapid filters, filter loading, washing, residual contamination.*

Vasilenko J. A. «System reliability evaluation criteria housing administration»

Currently, the Russian Federation remains unresolved topical issue - the reliability of the system of housing construction, which provides all the optimization processes for all participants, subject to certain conditions. The formation of the basic criteria of economic efficiency of interaction of the participants life-cycle of construction of residential property, will improve the reliability of the system of housing construction in a competitive environment.

*Keywords: housing, governance, safety.*

Vasilenko J. A. «Ordering the economic evaluation criteria reliability of the housing construction»

The article describes the systematic and factors affecting the social and economic processes and influencing the economic criteria for evaluating the reliability of the control system housing. It should be noted that these groups of factors affect the reliability of the system of economic management housing complex, in relation to each other, so the proposed grouping aims to emphasis, not on the principal division of the studied factors.

*Keywords: housing, public policy, investment, evaluation, and reliability.*

Vinogradova E.V. «Problems of quality control of concrete works»

The quality of construction and installation works and applied materials, products and structures when erecting tall buildings are crucial in ensuring the reliability and durability of constructions and building comprehensive security as a whole. Buying a home and other structures in our country sometimes resembles a lottery: quality, regardless of the value of the object is not guaranteed. Moreover, the fact of putting the new State does not guarantee the quality of this object. Quality can be guaranteed only through incoming control processes at each stage of construction. Total quality control techniques can help in measuring, describing, analyzing, interpreting and modeling volatility of indicators of the quality of products, even with relatively limited amounts of data.

*Keywords: quality control, strength, concrete, non-destructive method, analysis, durability.*

Guzenko O.I. «Evaluation of the conditions of formation of the integrated structures in construction»

The article reviews the prerequisites for the formation of the integrated structures in construction. The evaluation of the conditions and factors of development of building cluster in the region's economy.

*Keywords: integration, cluster, region, clustering, building, competitiveness, integrated structure.*

Dyakova O. V. «Algorithm for management decision-making to the evaluation of business management»

In the article the basic management decisions that are needed to improve management of the organization and eliminate possible causes of its low level. An algorithm for management decision-making based on evaluation of enterprise management using the technique developed earlier by the author.

*Keywords: management activity, effective management, strategic management, organizational structure, management, management decisions.*

Ivanova D.G. «Mortgage crediting as a tool of ensuring economic growth»

The paper deals with the analysis of mortgage crediting investment aspect. The economic essence of mortgage investment as a category is disclosed and its distinctive features is revealed. The structure of mortgage crediting investment mechanism is examined and its basic blocks are distinguished. The mortgage crediting impact on the economy of the country is identified and special attention is paid to the methods of functions of the state in the process of formation of the mortgage crediting market system.

*Keywords: mortgage crediting, mortgage investment, investment mechanism, economic growth, national project, government control.*

Kostuchenko V.V., Kudinov D.O. «Information support of management of construction systems»

Improvement of management by an investment cycle in construction on the basis of application of new information technologies. The model of the technological system intensifying control of flows of information is offered.

*Keywords: information, model, system, technology, development, management, construction, documentation.*

Kostuchenko V.V., Kudinov D.O. «Organizational and technical modeling of design and construction systems»

This article is devoted to research of organizational and technical modeling design and building systems in a modern building. In this article the basic typological scheme for information management showing the main elements of the organizational model construction.

*Keywords: construction, organization, modeling, streams, information, reliability, quality.*

Kudinova T.A. «Substandard language in the texts of the modern Russian writers»

The article is devoted to the contextual usage of substandard language units. The author advocates substandard words reflect language and culture of a certain historical period. The problem of the writer's tactfulness while using indecent words is in focus. It is also noted

ironical sound of colloquial lexical units is used as a special stylistic device that creates and plays with modern realities.

*Keywords: substandard units, jargon words, slang, dialect and colloquial words.*

Nebritov B.N. «Modeling of organizational and technological processes using search construction and expert systems»

The approach to the organizational and technological modeling using the principles of design search and expert systems. The basis of the solution of the formation and calculation of the organizational and technological models are software modules that interact with each other, with a user base of knowledge and other external data sources.

*Keywords: organizational and technological models, software modules, knowledge base, Tiny Fragments model.*

Polkhovskaya T. Yu. «Economic priorities of the implementation of sustainable development projects: the experience of China»

Sustainable development is a priority for China, and the government intends to meet this challenge by encouragement of urbanization, energy efficiency increase, development of “green” industries, modernization and restructuring of the economy, environmental pollution reduction. Of particular importance are the “green” and brown field development projects of urban development.

*Keywords: sustainable development, soft and hard infrastructure, real-estate industry, housing financing, development projects, real estate financing, urban-development, brown field.*

Polkhovskaya T.Yu., Boyang Y., Chengzhi Wu «Specifics of real estate market development in China»

The economic growth of China is inseparably linked with urbanization. The real estate market has expanded and became a major driver of economic growth. The central government reforms the system of land distribution with transformation of the socialist plan-centralized model to a market economy system. The development of China's real estate market occurs due to the improvement of institutional and operational factors. The real estate development in China is affected by foreign direct investment. Financing is one of the most important elements of a successful real estate development.

*Keywords: urban growth, real estate market, real estate transfer, grant of the land-use right, real estate development, real estate businesses, state-owned land, real estate financing.*

Vasilenko J. A., Ponomareva E.A. «Analysis and systematization of management method of commercial real estate»

The proposed systematization management of commercial real estate will create uniform criteria of management efficiency and to adapt them to the situation on the real estate market.

*Keywords: management, commercial real estate, property, methods, functions*

Riltseva J. A., Lisov V. A. «Improvement of methods of calculation of processes of dehydration of a precipitation of natural waters on predrying platforms»

The model of a platform of a predrying of the precipitation which is forming at stations of purification of natural waters of superficial sources, with data presentation of the comparative characteristic of its work is described. The specified methodology of calculation of a platform of a predrying of a deposit taking into account factors of an intensification of process is offered by engineering and technological means.

*Keywords: water deposit, predrying platform, evaporation, filtration, capillary phenomenon.*

Sheina S.G., Ryazantseva T.V. «The main factors affecting to the development of agglomerations»

At the moment because of the long chaotic development of urban systems, in Russia a great number of large urban areas appeared with various stages of development. Because of the complexity of these systems, and the specific nature of the variety of processes occurring in them, there are no unambiguous models for their regulation, and can't exist of all. There is a difficult task to systematize the factors determining the degree of development, allowing developing optimal management models territory.

*Keywords: agglomeration, Satellite town, accessibility, urban areas, development management area.*

Selyaeva Yu.S. «Forming of urban agglomerations as an instrument rapid socio and economic development»

The paper analyzes the main trends in the of urban agglomerations in Russia and the prospects for their expansion and consolidation. Carried out a comparative analysis of the factors of development for the largest agglomerations in Russia, revealed the positive effect of agglomeration effects on the regional economy.

*Keywords: urban agglomeration, agglomeration effect, rate of agglomeration's development, territory development.*

Semenov M.E. «Post-crisis housing market: origins and prospects»

The global financial crisis has demonstrated that the housing market is mainly speculative. This tendency is problematic for policymakers and businessmen because by its very nature, no one knows the understanding and the logic of housing speculative investments, how large they are and how to predict the long-term cycles. The paper gives an overview of the causes, major threats and dangers of speculative investments in real estate. It provides a number of strategic measures to promote post-crisis perspectives of the housing industry.

*Keywords: crisis, housing market, speculative investment, mediation nets, collapse investing, post-crisis perspectives.*

Simionova N.E. «Integration Projects Performance Evaluation»

The article reviewed approaches, methods and indexes of valuing companies' integration effectiveness. The process of integration is regarded as a project. The author also considers possible methods of measuring system-based synergy by means of business market value index.



*Keywords: integration, integration project, system-based synergy, synergies evaluation, business market value, cut-off rate.*

Simionova N.E. «Incomplete Construction Project Valuation Issues»

Incomplete construction project as a commodity has its specific features, which should be taken into account when appraising market value of the object. The existing methods of valuation do not fully reflect these features, in particular determination of depreciation, business profit assessment and risk allowance.

*Keywords: incomplete construction projects, classification, depreciation, valuation, market value, cost approach, income approach.*

Simionova N. E. «Loss-making Companies Valuation Methods»

The article considers approaches and methods of loss-making business, as well as low-profit companies. The author proposes a number of tools for income flow normalization of the object and methods of adequate discount rate selection and inflation accounting.

*Keywords: loss-making companies, problem typology, valuation, profit normalization, discount rate.*

Smirnov D.V. «Effects of leasing for small and medium-sized businesses in the region»

The article deals with leasing as an instrument of investment support for small and medium-sized businesses, its comparison with the credit. Characterized by regional leasing and ways of its development. Consider some types of leasing: Innovation and IT leasing. The characteristics and classification of the factors in the development of innovative leasing. Based on the research the author suggests to develop public policies for regional leasing.

*Keywords: investment support, regional leasing, regional innovation policy, innovation leasing, IT leasing.*

Sytnik S. V. «Regional investment risks in the system of territorial development of the Rostov region»

The paper presents a methodical approach to the formation of regional integration risks of investing in the strategies of territorial development. On the example of the Rostov region assess regional investment risks on the most important indicators. We give a comparison of the results of expert analysis and quantitative assessment of investment risks in the region.

*Keywords: region, investment risks, territorial development, risk assessment methods, the gross regional product.*

Torgayan E. E. «Modeling agencies reproduction housing»

The article discusses the housing construction policy of the state, the main problems and the effectiveness indexes of the national project “Affordable lodging” realization. The article suggests the mechanism of decision-making on forming housing construction capacity according to plan index of the lodging afford, the inhabitants income, the real estate market prices that can approach the national project “Affordable lodging” realization as much as possible.

*Keywords: housing, reproduction, modeling, affordable housing, the structure.*

Yavruyan K.S., Filonov I.A., Fesenko D.A. «To a question of application nanotechnologies in manufacture of building materials»

In article the analysis of a condition of production of cement concretes with use nanotechnologies is carried out. A production technique of cement concretes with introduction nanoparticles and simultaneous levigating of a cementing agent is offered.

*Keywords: nanodispersible modifiers, nanotechnology, re-crushing portland cement parts, a strength improvement of cement concretes, vortex band apparatuses, activity of cement, activation, apparatuses of a vortex band.*

Chudnovskaya N.S. «Features of assessment and monitoring of borrowers' creditworthiness of the construction sector (based on the South-West Bank of Sberbank of Russia) »

The article includes the theoretical aspects of the creditworthiness of construction organizations, a system of indicators to measure the creditworthiness of the construction sector (based on example of borrowers of the South-Western Bank of Sberbank of Russia), and the analysis of construction lending in Russia and in the Southern Federal District (based on materials of the South-Western Bank of Sberbank of Russia). The results of the analysis showed the overdue need to improve methods and procedures for evaluating the creditworthiness of borrowers in building, that's why the author of the article has developed Model of Risk, which allows to overcome the problems of information asymmetry between banks and borrowers, and to lend institutions provide additional benefits in the credit rating and a selection of construction companies.

*Keywords: creditworthiness, the assessment, the borrower of the construction sector, the bank.*

Shevchenko A. A., Polhovskaya T. Yu. «Classification of project financing risks and strategies of their minimization»

This paper studies the approaches to categorizing real estate development risks, presents the detailed classification of project financing risks by the chronology of their occurrence in the economic life of the project, describes the effects of risks on realization of project initiatives, and presents the main strategies to minimize them.

*Keywords: real estate development, project finance, risk classification, risk management, project financing risks, project initiative, project life cycle.*

Girya L.V., Sheina S.G. «Bases of the urban planning based on the monitoring of parameters of inhabitancy»

In article is devoted to the scientific concept of system engineering of maintenance and management of urbanized system of objects of urban development, basing on monitoring of parameters of an inhabitancy is resulted.

*Keywords: Reconstruction of urban development, geological and environmental risk during reconstruction.*

Sheina S.G., Matveyko R. B. "Conceptual model of an assessment of level of social and economic development of territories and formation of strategy of development of investment policy"

The increased need for scientifically reasonable activity of governing bodies demands development of a uniform methodological approach, introductions of information technologies, improvement of the mechanism of management by territorial development in system of public administration actually are absent Today instruments of coordinated use of key resources of territories. The value of the territory influencing a choice of the investor develops of two components: current social and economic a condition of the territory and prospects of its development the next years. Authors offered a comprehensive methodical approach to an assessment and planning of development of the territory of the subject of the Russian Federation, applied to the analysis of the territory of the Rostov region.

*Keywords: Complex assessment of the territory, management of territorial development, functional use, investment platforms, modeling of scenarios of development of the territory, point of growth, optimization of placement of investment platforms.*

Shumilina V. E. «Methodical-theoretic approach to the segment-based and activity-based accounting»

The methods of management accounts on application of segments and kinds of economic activity were worked out. They are based on structured working card of accounts. The model of management accounts on application of segments and kinds of economic activity is formed by using external and internal segments, segments of strategically activities, kinds of economic activity. It is aimed for creation an effective system of accounting and analysis of resources using kinds of economic activity.

*Keywords: segment; kind of economic activity; the methods of management accounts on application of segments and kinds of economic activity; cost; profits and losses.*

Ganicheva L.Z., Lisutina L.A. «Human impact on biotic communities of the Republic of Kalmykia. »

In article are considered particularities of the aspectual composition of flora and faunas of the republic Kalmykiya, their differences in territorial spreading. It is given analysis антропогенному influence on vegetable and animal world, the Revealed reasons деградации biological potential. Accent is made on condition of the populations of the antelope of the saiga. The Installed factor, influencing upon decision of the problem guard and reproduction охотничье-commercial fauna, danger is shown for vegetable and animal of the world fire.

*Keywords: vegetation, animal world, anthropogenic influence, population, industrial production, steep fires, ecological situation, antelope-saiga.*

Karmazin S.A., Strahova N.A. «Classification and identification of risks for the environment engineering»

In the article are covered methodical basics and assessment principles of environment impact. Was carried the analysis of approaches of research of risk-systems. Quality and quantitative assessment approaches of the risk applied in the sphere of environmental

management was given. Were provided the practical methods of control agrarian resources on the foundation of a functional approach the qualitative and quantitative phytosanitary risks appraisal.

*Keywords: risk assessment, ecology, expert judgment, nature management, impact.*

Lisutina L.A., Ganichev L.Z., Pavlova A.V. «Assessment of the Eastern Donbass natural objects»

The article discusses the state of natural objects of the Eastern Donbass after the restructuring of the coal industry. The analysis of the state of water bodies, surface deformation, through the process of gassing mine gas with dangerous concentrations of methane, carbon dioxide, "dead air." The problem of burning waste dumps. Are technical measures for containment of hazardous gas emission and methods of control of migration of highly mineralized mine water in order to develop measures to reduce the negative impact of the processes on the environment.

*Keywords: East Donbass coal mines, waste dumps, mine water, gas emission, mining and environmental monitoring.*

Ovchinnikova N.G., Alieva N.V. «Territorial conditions of the organization of use Ground resources»

In clause by the author it is proved, that in an agriculture transition to intensive forms of reproduction means improvement of use of the ground as main means of production at maintenance of increase of feedback of a fixed capital, power capacities, labor and material resources, therefore the priority in intensity of use of the grounds consists in the maximal increase of economic fertility and productivity of each hectare on the basis of various improvements.

*Keywords: ground resources, rational use of the ground, a qualitative condition, increase of fertility of ground.*

Strakhova N.A., Lebedinskiy P.A. «Analysis of the energy efficiency of the Russian economy »

The authors Strakhova N.A. and Lebedinsky P.A. investigated the relevance of energy efficiency and energy conservation. On the basis of these data, the authors analyzed the efficiency of modern Russian law, examines the barriers to the implementation of measures, and it is suggested applicability of the measures regulated by the results of environmental audits.

*Keywords: energy efficiency, energy conservation, international experience, regulatory and legislative framework, energy, environment.*

Debiev M.V., Arsayev S. A.-Ya., Hamsurkaev H.I., Ivanova M.I., Mochtchenko I.N. «Monitoring and modeling of group political perceptions of young people of Grozny (according to data early 2012)»

The paper presents the results of research level of perception a political order among students of Grozny (GGNI) at the beginning of 2012. The questioning method was used. In total 320 respondents were interviewed, and captured the age group from 17 years to 20 years. On national structure the group was almost uniform (95,9% - Chechens). The main purpose of

questioning - the definition of the emotional component of the group political installation on the classical method of semantic differential Charles Osgood. A comparative analysis was carried out of the averaged semantic level of emotional portraits and making real political order. It is revealed, the image of an order is in the Republic 45% closer to positive "ideal" construct in comparison with image of an order in Russia as a whole. It is received, by the beginning of 2012 perception level considerably decreased to normal value (in comparison with "incredibly positive" 2011). Thus small excess of perception of a political order in the Republic remained.

*Keywords: a political order, a political tensions, semantic differential, factor analysis, the affective component, questioning.*

Mochtchenko I.N., Bugayan I.F., Ivanova M.I., Djikaev D.A. «Level of a group political tension in the student's environment of Rostov-on-Don for 2011»

Results of the flight research spent in student's RBSU environment in December, 2011 are presented. The method of semantic differential is put in a basis of questioning. Respondents were offered to estimate four types of a political order by using of 20 double modal seven-ball scales. Two "ideal" orders are as much as possible attractive order and as much as possible unattractive one. And two real orders are the political order existing in Rostov region and a political order in Russia as a whole. The estimation was spent in linear approach, and also in frameworks the early developed phenomenological model considering typical nonlinearity, which is probable for a considered case. It is received, that in the end of 2011 students were characterized by negative perception as political order in area (with level -0.7, a level was normalized from +1 to -1), so an order in Russia in whole (with level -0.77). Surfaces of the stationary states, allowing to detail dynamics of change of perception level are calculated. Comparative dynamics of behaviour of emotional perception level of real political orders from the end 2009 on the end 2011 is presented.

*Keywords: questioning, semantic differential, political order, emotional perception level, typical dependence, nonlinear approach, catastrophe theory, dynamics of change of perception.*