

Summaries

UDC 552.161:550.42

Kucherenko I.V.
**MINERALOGICAL-PETROCHEMICAL
AND GEOCHEMICAL FEATURES OF ULTRAMETAMORPHIC
PROCESS OF HEART-DOMIC TYPE**

Distribution of petrogenic and ore-genetic (Au, Ag, Hg) chemical elements in the metamorphic zones of the Kedrovskoye heart-domic construction of the North Transbaikalia has been shown and discussed. The conclusion on the absence of sufficient migration of the substance in the process of local heart-domic ultrametamorphism is made.

UDC 553.311

Voroshilov V.G.
**GEOCHEMICAL ZONALITY OF SKARN-GOLD
DEPOSITS OF THE WESTERN SIBERIA. PART II.**

Geochemical zonality of skarn-gold deposits in the Western Siberia has been studied. Concentric zone construction of anomalous structures of geochemical fields accompanying the investigated deposits is revealed. The groups of concentrating and deconcentrating (relatively to golden-ore bodies) elements are determined. The close spatial relation between gold and complex of chalcophile satellite elements is stated. Their composition can change depending on the evolution degree of hydrothermal system. In general, the complex of deconcentrating elements accumulated at the periphery of ore bodies is standard and includes Ni, Co, Cr, V, Ba, Mn. The genetic aspects of the investigated geochemical zonality have been discussed.

UDC 553.311

Voroshilov V.G., Timkin T.V.
**QUANTITATIVE ESTIMATION OF ANOMALOUS
GEOCHEMICAL FIELD PARAMETERS
AND GOLD MINERALIZATION PREDICTION**

The construction of anomalous geochemical fields accompanying gold mineralization has been studied; the criteria of its quantitative estimation have been developed. The techniques of ordering geochemical field anomalous structures and hydrothermal process intensity are suggested. The relation between quantitative parameters of these structures and the scale of gold mineralization is stated. The possibility of estimating deposit erosive section and ore deposits by the parameter values of anomalous geochemical fields is shown.

UDC552.5:550.832:553.982(571/16)

Perevertaylo T.G.
**LITHOLOGIC AND ELECTROMETRIC CHARACTERISTICS
OF PRODUCTIVE STRATA OF LOWER CRETACEOUS
DEPOSITS OF THE GURARIN-SOBOLE OIL DEPOSIT**

Based on the data of development survey, detailed study of the core material and lithological-petrographic analysis the description of lithologic composition of rocks of the Lower Cretaceous deposits is presented, electrometric characteristic of sand strata is given, and the regularities of their distribution as well as changes in the thickness are pointed out.

UDC 551.31

Koshovkin I.N., Belozerov V.B.
**MAPPING THE HETEROGENEITIES OF TERRIGENOUS
RESERVOIRS IN CONSTRUCTION OF GEOLOGICAL
OIL DEPOSIT MODELS**

The questions of mapping formalization of reservoir lithofacies characteristics in construction of geological models of oil and oil-and-gas deposits have been considered. The process formalization permits us to build a more adequate digital model of geological object. In its turn, it allows formalization of the geologic model adaptation process as the data are accumulated in the process of deposit use and optimization of hydrocarbon production applying new techniques.

UDC 551.242

Astafurov S.V., Shilko E.V., Psakhie S.G.
**INVESTIGATION OF INITIATION CONDITIONS OF RELATIVE
DISPLACEMENTS OF THE FAULT-BLOCK MEDIA UNITS
AT VIBRATION LOADING**

Computer-aided investigation of initiation conditions of relative displacements along the interfaces of the complex stressed geological media blocks under vibration loading has been carried out. The movable cellular automaton method was used for computer-aided simulation. The results of the simulations show that frequency of vibration loading or, in other words, time of the one impulse energy releasing, and relative value of shear stresses are the determining factors for the initiation of unstable displacements along the interfaces of the geological media blocks. Analysis of simulation results also show, that long-continued loading with low power impulses are more effective for initiation of displacements in respect to power inputs.

UDC 561.735:571.15

Bazhenova Ya.A.
**THE CARBONIFEROUS DEPOSITS
ON THE RUSSIAN PART OF RUDNYI ALTAI**

The paper considers the fact that due to the lack of factual data the coal continental deposits of the Rudnyi Altai were dated to the Middle Carboniferous and confined to the Maloulbinskaya Suite. However, the detailed investigation on the deposits of this suite (connected with the coal prospecting) enabled rather abundant collections of accumulated fossil remains. The latter extended the age range of the Maloulbinskaya Suite to the Early-Late Carboniferous. Against the background of the uniform lithological composition they also made it possible to divide this suite into three separate members characterizing diverse conditions of its formation.

UDC 624.131.1

Boley K., Strokov L.A.
**DETERMINATION OF CREEP CHARACTERISTICS
OF CLAY SOIL**

The results of laboratory research of clay soil creep according to N.N. Maslov's physico-technical theory statements are outlined. The experiments were carried out at constant deformation rate and continuous record of vertical horizontal deformations and strains. The dependence of strength index and creep on duration of compaction was stated.

UDC 519.865

Anikina A.V., Dyomin N.S., Rozhkova S.V.
**APPLICATION OF PROBABILISTIC APPROACH
TO INVESTIGATION OF ONE TYPE OF EXOTIC OPTION
IN FINANCIAL MARKET DIFFUSE MODEL (B,S)**

Solution of problem on optimal hedging for European call and put options of exotic type, when possible option payment are limited by specified value has been presented. The formulas determining option price as well as evolution of portfolios and capitals in time i.e. hedging strategies and the capitals corresponding to them were obtained. Some properties of the solutions were investigated.

UDC 519.865

Dyomin N.S., Trunov A.I.
**RESEARCH OF CALL OPTION IN THE CASE
OF HEDGING WITH SPECIFIED PROBABILITY**

The formulas determining option price as well as evolution of portfolios and capitals in time for European call option in the case of hedging with specified probability (quantile hedging) at continuous time and financial market diffuse model (B, S) were obtained. Some properties of the solutions were investigated.

UDC 539.371

Anfilov A.V.
**THEORIES OF «SLIGHT» AND «LARGE» ROD CROOKING
 FROM ANALYTICAL POINT OF VIEW**

The theories of «slight» и «large» displacements at rod crooking have been analysed with estimation and determination of assumption functions separating them. General mathematical support on the basis of line curvature expressions in the parametric form is developed. Boundary value problem of rod curvature geometry is presented in two problems: «line recovery» by the curvature function and the initial conditions, then «line rectification» i.e. determination of curve arc length by the final conditions.

UDC 621.972

Glazov A.N.
**INFLUENCE OF OPERATIONAL PARAMETERS
 ON CHARACTERISTICS OF PUNCHER**

The paper covers the results of experimental study of influence of temperature and compressed air pressure, pressing force on operational characteristics of puncher. It is shown that increasing the temperature of compressed air the less the initial degree of compression in the back chamber, the more the energy parameters are, but air consumption decreases unequally for different types of puncher. It is stated that increasing the pressing force the air consumption grows up to a definite limit which is the most significant in the case of puncher with spring-loaded valve.

UDC 621.891(048):539.178(048)

Maximenko A.A., Koteneva N.V.
**DYNAMIC MODEL OF ELASTOPLASTIC CONTACT
 INTERACTION OF SMOOTH BODIES**

Dynamic model of introducing rigid smooth sphere into homogeneous elastoplastic hardenable solid body has been considered. On the basis of the model numerical-analytical dependencies describing the behaviour of solid body in elastoplastic region of contact interaction were suggested. The numerical-analytical dependencies allow us to take into consideration additional approach of contacting bodies owing to dynamic loading.

UDC 533.6.011.5:532.582.3

Pakhomov F.M.
**SPATIAL AERODYNAMICS OF BLUNTED CONES
 IN THE PRESENCE OF COMPLICATING FACTORS
 IN APPROACH SUPERSONIC FLOW**

The results of problem solution on blunted cone interaction with spherical heated region in approach at nonzero attack angle supersonic flow in the absence and presence of strong localized blowing from surface as well as from falling at attack angle plane blast wave are presented.

UDC 621.313.12

Nosov G.V.
**ON CALCULATION OF PARAMETERS AND EFFICIENCY
 OF ENERGY TRANSFORMATION WITH RAILGUN**

The calculation formulas of pulse duration and amplitude of growing current at specified values of maximum velocity and weight of accelerated body by railgun have been obtained. To provide minimum values of railgun current and source strength it is necessary to obtain current impulse close to rectangular shape from the source and to have the most railgun inductance. The dependencies defining power conversion factor of railgun including the energy losses in rails possible in electric arch and remaining energy in the railgun magnetic field are presented for current rectangular impulse. It is shown that conversion factor increases with increasing mass of accelerate body and its maximum velocity as well as with decreasing the railgun length at optimal values of accelerated body's cubic density and its initial velocity.

UDC 621.391

**Voskoboinikov Yu.E., Isayev Yu.N.,
 Litasov V.A., Kolchanova V.A., Kuleshova E.O.**
REGULARISING ALGORITHM OF PARAMETER IDENTIFICATION OF ELECTRIC CHARGE EQUIVALENT CIRCUIT. PART II.

A new regularizing algorithm of function calculation of indicial admittance in discharge gap equivalent circuit using stable differentiation and integral equation algorithms which allow for errors of initial data is suggested. Application of the least perfect square method at error modelling for the function parameters of indicial admittance is an additional way of «smoothing» modeling error of regularizing solution.

UDC 541.16:182

Tolbanova L.O., Ilyin A.P.
**FORMATION OF FILAMENTARY CRYSTALS
 IN INTERMEDIATE COMBUSTION PRODUCT OF ALUMINIUM
 NANOPOWDER AND ITS MIXTURES WITH MOLYBDENUM
 AND TUNGSTEN NANOPOWDERS IN AIR**

The characteristics and phase composition of intermediate synthesis products has been studied by burning mixtures of aluminium nanopowders and molybdenum and tungsten. It was stated that under certain conditions two-level filamentary crystals were stabilized in the process of burning, the mechanism of their formation being suggested. The compact samples of composite materials on the basis of nitride-containing ceramic powders reinforced by filamentary crystals and refractory metals were obtained.

UDC 621.316.9

Mozilov A.I., Ivanov G.V., Safroshkina L.D., Demin Yu.V.
**GRAPH-ANALYTIC ENGINEERING METHOD OF CORROSION
 CURRENT CALCULATION IN MULTIELECTRODE SYSTEM**

The calculation methods of corrosion current in multielectrode system have been analysed. The algorithm of graph-analytical engineering method of corrosion current calculation in multielectrode system including the principles of graphic and analytical calculation methods is presented. As an illustrative example the case with three electrodes (copper, iron, and alloy) is considered.

UDC 621.315.592

Parashchuk V.V., Rusakov K.I.
**NONLINEAR-OPTICAL PROPERTIES OF SEMICONDUCTORS
 IN TERMS OF STREAMER DISCHARGE**

Nonlinear optical phenomena at streamer discharge in hexagonal and cubic semiconductors have been simulated. The possibility of light self-trapping in terms of this effect was shown.

UDC 538.97-405+53.072;53:004

Boyko V.I., Daneykin Yu.V., Khadkevich A.V., Yushitsin K.V.
**INFLUENCE OF GENERATION MECHANISMS ON PULSE
 PROFILE OF MECHANICAL STRESS IN METAL TARGET
 UNDER THE ACTION OF POWER ION BEAMS**

The system model «Power ion beam – metal» is suggested. Regularities of impulse formation of mechanical load in the volume of metal target subjected to the action of ion beams of different component composition in the range of power density $10^7 \dots 10^{10}$ W/sm² have been considered. The influence of generation mechanisms on the profile and amplitude-to-time parameters of shock-wave excitation is studied.

UDC 621.039.532.21

**Tsyganov A.A., Khvostov V.I., Komarov E.A.,
 Kotlyarevskiy S.G., Pavlyk A.O., Shamanin I.V., Nesterov V.N.**
**THE PROBLEMS OF UTILIZING GRAPHITE OF STOPPED
 GRAPHITE-URANIUM REACTORS**

A list of radioactive nuclides, the activity of which forms the main part of total activity of graphite stack and graphite elements of the construction of stopped industrial graphite-uranium reactors has be-

en defined. The analysis of activity part contributed by these nuclides at different moments of time after stopping reactor was carried out. A set of construction graphite elements, in which there is a possibility of self-sustaining release of the energy stored (Wigner's energy) was determined. It was stated that the most value of the Wigner's energy is achieved in graphite constructions operated in low-temperature region or at high values of flux densities of damaging neutrons and concurrent gamma radiation.

UDC 621.039.51

**Gavrilov P.M., Kokhomskiy A.G.,
Izmestiev K.M., Seelev I.N., Silaev M.E.
GAMMA-SPECTROMETRIC CHECKING METHOD
OF ACTIVITY AND NUCLIDE COMPOSITION
OF LOW-ACTIVE SOLID RADIOACTIVE WASTE**

The gamma-spectrometric control method of low-active solid radioactive waste, based on direct measurement of activity and nuclide composition has been developed. The measurements were carried out in the geometry of standard steel container of 200 l. volume, where low-active wastes were placed. To take into account distribution non-homogeneities of solid waste over the geometry measured a special rotating platform was used, the contained being placed on it. Metrological certification was performed and the main errors of this method for 95 % of confidence probability were determined.

UDC 661.87.519

**Vlasov V.A., Butov V.G., Goldobin D.N.,
Orlov A.A., Timchenko S.N.
SIMULATION OF NON-STATIONARY PROCESSES
IN CENTRIFUGAL CASCADES**

The model of nonstationary hydraulic and dividing processes in rectangular symmetrical counterstream centrifugal cascades is considered. The calculation technique of centrifugal cascade parameters of transition processes has been developed. The results of numerical computation are presented.

UDC 621.389, 519.687.7, 519.684.6, 004.514

**Grenke V.V., Shakirov I.V., Samoylov A.M.
MULTI-CHANNEL HARDWARE AND SOFTWARE COMPLEX
FOR MONITORING AND ANALYSING VIBRO SIGNALS**

The description of complex construction and operation principles for vibrosignal analysis is presented. The distinguishing feature of the complex is application of the wavelet analysis method. Peculiarities of wavelet transformation when solving the problems of mechanical system vibrodiagnostics in comparison with the Fourier analysis are shown. Hardware and software model of measuring complex has been created; its tests have been carried out.

UDC 514.88, 514.112.3, 535.015

**Samoylov A.M., Grenke V.V., Shakirov I.V.
ACCURACY EVALUATION OF OBJECT POSITION DETERMINATION
IN THE WORKING AREA OF STEREO RANGE FINDER**

The problem solution of position determination of moving objects system in operating TV stereo range finder has been shown. The technique of accuracy evaluation in determining their position is described. The results of the method application on the TV stereo range finder model are presented.

UDC 519.688:681.7.067.252.2

**Shakirov I.V., Samoylov A.M., Grenke V.V.
RECONSTRUCTION ALGORITHM OF SPHERICAL IMAGE
OBTAINED AT OPERATING WIDE-ANGLE OPTICS**

Reconstruction problem of spherical image obtained at operation of wide-angle optics is considered. Rapid algorithm of pixel-by-pixel reconstruction is suggested. The relations connecting pixels of spherical and reconstructed images have been obtained. The results of the algorithm operation are presented.

UDC 615.849.19.03:616.1

**Bukaty V.I., Pavlova Ya.V., Sakovich S.I.,
Gaskova O.V., Ustinov G.G.
INTERACTION OF LOW-INTENSITY LASER LIGHT WITH HUMAN BLOOD**

The processes of light attenuation in biological media are considered in details. The techniques of defining attenuation coefficient, plotting scattering indicatrix, calculating erythrocytes, measuring blood temperature under the action of laser radiation are described. The coefficient values depending on the radiation wave length and concentration of scattering centre have been obtained in the experiments. The angular radiation dispersion is plotted, the temperature dynamics is found out. Influence of erythrocytes on laser light attenuation when passing through blood is described. The graphs of attenuation coefficient dependence on the quantity of red cells per 1 mkl of blood for the wavelength of 632 and 890 nm are plotted. Plotting indicatrix and temperature measurement is performed for the wavelength of 632 nm.

UDC 544.52

**Surovoi E.P., Sirik S.M., Bugerko L.N.
PHOTOLYSIS OF AZIDE SILVER**

The preliminary irradiation azide silver light ($\lambda=365$ nm, $>1 \cdot 10^{15}$ quanta \cdot cm $^{-2}$ \cdot c $^{-1}$) in vacuum ($P=1 \cdot 10^{-5}$ Pa) alongside with increase in speed photolysis and a photocurrent results in occurrence new long-wave (up to $\lambda=1280$ nm) areas of spectral sensitivity. Constants of speed photolysis azide silver are determined. As a result of measurements of a contact potential difference, volt-ampere of characteristics, a contact photoelectrical moving force, a photocurrent it is established, that at photolysis azide silver microheterogeneous systems $\text{AgN}_3(\text{A}_1) - \text{Ag}$ (a product photolysis) are formed. It is shown, that a limiting stage photolysis azide silver is diffusion of the mobile ion of silver to neutral center (T_{Ag_m}) 0 .

UDC 541.16:182

**Lerner M.I., Shimanskiy V.V., Saveliev G.G.
PASSIVATION OF METAL NANOPOWDERS OBTAINED
BY ELECTRIC EXPLOSION OF CONDUCTORS**

The influence of composition and gas flow rate at passivation on content of unoxidized metal, particle size and temperature on the metal nanopowder layer obtained by the method of conductor electric explosion has been studied. It is shown that the time of forced passivation can be tens times less in comparison with passivation at spontaneous gas diffusion in powder layer.

UDC 543.42

**Petrova E.V., Astashkina A.P., Filonenko D.A.,
Otmakhov V.I., Izaak T.I., Volokitin G.G.
STUDY OF APPLICATION OF HYDROPHOBIC FIBROUS
SORBENT FOR WATER PURIFICATION FROM METAL IONS**

Sorption properties of hydrophobic fibrous sorbents on the basis of polypropylene and polyethylene terephthalate produced from thermoplastic polymer wastes to metal ion series in aqueous media has been studied. Based on the experimental data of extraction degree dependencies on fibre laying density, dispersity, presence of air in sorbent, volume of pass solution the mechanism of metal ion sorption from aqueous media with hydrophobic fibrous materials is suggested.

UDC 628.387

**Ushakov G.V., Solodov G.A.
TECHNOLOGICAL AND HYGIENE-SANITARY ASPECTS
OF USING BIOLOGICALLY PURE PROCESS WASTE WATER
IN THE SYSTEMS OF TECHNICAL WATER SUPPLY**

According to sanitary-toxicological factors biologically purified waste water of chemical enterprise are referred to low-toxic substances, are not allergens, do not possess irritant action on mucous tunics and skin and are suitable for recycling water system makeup. Crucial factors of reusing these waters are their corrosive activity, susceptibility to mineral salt accumulation and bioaccretion.

UDC 628.168.3

Ushakov G.V., Solodov G.A.
**RESULTS OF SERVICE TESTS OF INDUSTRIAL WATER
 CYCLE IN BLOWOFF FREE CONDITIONS USING
 ZINK-BICHRIMATE-PHOSPHATE CORROSION
 INHIBITORS AND HARD SALT ACCUMULATION**

Transformation of water cycle at an industrial enterprise into blowoff-free operation mode permitted dumping recycled water into industrial storm sewage to be excluded and total amount of industrial storm sewage waters to be decreased. Besides, flow of fresh river water for water cycle makeup decreased.

UDC 662.749.33

**Lozbin V.I., Mochalnikov S.V., Solodov G.A.,
 Nevedrov A.V., Papin A.V.**
**MANUFACTURE OF DESIRED END PRODUCTS
 BY MEANS OF FINE TREATMENT OF COAL TAR PITCH**

The possibility of desired end product manufacture from by-product coke industry wastes is shown. A large number of valuable products can be obtained from different fractions of coal tar pitch by their fine treatment. The products obtained in this way find application in medical and chemical industries and etc. Moreover, recycling of by-product coke wastes into end products solves the problem of their utilization.

UDC 66.011

Ivashkina H.N., Yuriev E.M., Kravtsov A.V., Ivanchina E.D.
**IMPROVING THE PROCESS OF HIGHER PARAFFIN
 DEHYDROGENATION PROCESS ON THE BASIS
 OF NONSTATIONARY KINETIC MODEL**

Technological modelling system of the dehydrogenation process of C_{10} - C_{30} n-paraffins, in the basis of which there is a formalized mechanism of hydrocarbons on the Pt-catalyst surface has been developed. According to predictive calculation, application of the developed system allows the prolongation of catalyst life due to optimization of its operation modes as well as simulation of different variants in equipment reconstruction, in particular, at transition to operation of reactors placed in parallel.

UDC 622.276.7

**Prozorova I.V., Serebrennikova O.V., Loskutova Yu.V.,
 Yudina N.V., Stakhina L.D., Nikolaeva T.L.**
**PECULIARITIES OF SLUDGE FORMATION
 AND COMPOSITION OF PARAFFIN CARBOHYDRATES
 IN THE UPPER-SALAT DEPOSIT**

Oil examination of two wells of the Upper-Salat deposit in Tomsk region has been carried out. The oils are sufficiently different in their composition. This fact determines the peculiarities of sludge formation in them. Oil paraffin hydrocarbons are presented by homologous series of normal alkanes with the number of carbon atoms C_9 - C_{30} . For the oil of 122 well with high content of solid paraffins, but distinguished by high concentration of resinous components, the process of sludge formation begins at $T=+50$ °C. In the oil of 188 well the sludge formation occurs at $T=+70$ °C.

UDC 662.73.012

Ivanov A.A., Yudina N.V., Maltseva E.V., Lomovskiy O.I.
**INFLUENCE OF REDOX CONDITIONS AND MECHANICAL
 ACTION ON CHANGE IN PEAT HUMIC ACID COMPOSITION**

Mechanical action on humic acids is shown to result in change of their composition accompanying decrease in aromaticity degree and increase in oxygen-containing fragments. Mechanical treatment of peat in oxidizing conditions increases the efficiency of extracting water-soluble components and humic acids to the maximum. Structural

parameters and functional composition of humic acid molecules change at peat treatment in the redox conditions depending on the conditions.

UDC 631.41:631.417

Gostishcheva M.V.
**COMPARATIVE CHARACTERISTIC OF HUMIC ACIDS
 OF PEATS SERIES IN TOMSK REGION**

On the basis of comparative analysis of element composition, infrared spectra and spectra of electron paramagnetic resonance as well as biological activity (according to indicators of reversible erythrocyte aggregation) it is shown that humic acids of different types of peat in Tomsk region differ in biological properties depending on the characteristic of their chemical composition. Humic acids of transitive sedge peat type have a higher biological activity in comparison with other peats, which is explained, first of all, by high content of aromatic polyconjugation system, nitrogen and active acid groups.

UDC 620.9:662.6

Ilyina M.N.
**REQUIREMENTS FOR PREPARATION OF ACCOMPANYING
 OIL GAS FOR SMALL POWER ENGINEERING**

The possibility of using accompanying oil gas directly at the place of production and conditions meeting the corresponding requirements on fuel quality are grounded.

UDC 532.522:531.746.2

Kozlobrodov A.N.
**NUMERICAL INVESTIGATION OF CYLINDRICAL
 PRESS-MOULD FILLING PROCESS WITH POLYMER MASS
 BY THE MOLDING METHOD UNDER PRESSURE**

On the basis of numerical solution of the problem on flow of non-linear visco-plastic liquid with free surface the process of cylindrical press-mould filling has been studied. Mathematical statement of the problem is presented and the factors influencing the formation process are analysed. Numerical experiments carried out in the wide range of problem input parameters reveal the characteristics of hydrodynamic behaviour of free surface form of flowing polymer mass and demonstrate the influence of the main problem parameters on the basic characteristics of the process.

UDC 621.313.333:658.562

Muravleva O.O., Tyuteva P.V.
**INDUCTION MOTORS IMPROVEMENT
 FOR A VARIABLE SPEED DRIVE**

New improvement way of induction motors for a variable speed drive when changing mass dimension indices has been proposed. It allows to improve energy indices and to reduce running costs. The analysis of simulation results has been carried out and calculation results of economic efficiency of the achieved methods of approach to energy effective induction motors design have been suggested.

UDC 002.53:004.89

Tuzovskiy A.F.
**DEVELOPMENT OF KNOWLEDGE CONTROL SYSTEMS ON
 THE BASIS OF UNIFIED ONTOLOGICAL KNOWLEDGE BASE**

Creation of knowledge control system on the basis of a united model of knowledge organisation described in the form of the system of ontologies supplement each other is suggested. The base organization ontology and a set of ontologies of knowledge fields are included in the system. The construction variant of such model is described and structure of knowledge control system on its basis is suggested.

UDC 002.53:004.89

Tuzovskiy A.F.
**CREATION AND APPLICATION OF KNOWLEDGE BASE
 OF SPECIALISTS' COMPETENCE PROFILES
 IN AN ORGANIZATION**

An approach to specialists' model construction and its usage in the knowledge management system with application of ontological organisation model is proposed. The problems on knowledge management that can be solved on the basis of the model proposed are considered.

UDC 681.52

Taskaev D.M., Avramchuk V.S.
**ADAPTIVE SYSTEM WITH FREQUENCY CONTROL
 CHANNEL DIVISION AND BOOTSTRAPPING**

Construction of adaptive control system on the basis of the principle of frequency-dependable feedback and with application of multifrequency identification action has been shown. The adaptation algorithm possesses relative simplicity, accuracy suitable for most of the industrial enterprises, does not require large calculating resources and is capable of operating in the real time mode.

UDC 658.52

Grigoriev V.P., Kiselev K.A.
**ROUTING OF RETAIL PRODUCT DELIVERY IN CITY'S ROAD
 NETWORK ON THE BASIS OF GENETIC ALGORITHM**

A model simulating dynamic processes in a city's road network has been developed. On the basis of genetic search the methods of service route construction was created. System of automated transport routing delivering different goods was designed.

UDC 62.505

Imanaliyev Z.K., Barakova Zh.T.
**ESTIMATION OF ECONOMIC OPTIMAL DEVELOPMENT
 ON THE BASIS OF OPTIMIZATION MODEL**

The problem of optimal management for one-product economic model is investigated. A new approach based on simple properties of decay function in closed space is suggested.

UDC 502:101.1:316(075.8)

Rubanova E.V.
ECOLOGICAL PARADIGM

One of the possible variants of the problem solution on ecological paradigm is proposed. From the author's point of view, ecological paradigm is a specific form of social paradigm. It is formed at definite stages of ecological consciousness development. Globalisation processes taking place in the world implies moral filling of human activity, the attitude to the nature, in particular. Philosophic comprehension of «Nature – Society» system is connected with perception of social thinking dichotomy which is the base for existence of several forms of ecological paradigm. Complexity and contradiction of ecological problem perception has acquired a planetary character in the modern world.

UDC 130.2:7

Maslova S.V.
**FUNCTIONING OF MYTH IN THE MODERN CULTURE:
 THE CONTEXT OF TRANSITION FROM RATIONALITY
 TO POST-MODERN**

The paper is devoted to the problems of culture in the modern society. Mass consciousness formed in the industrial society possesses mythicity to a high degree, which allows many scientists to state the phenomenon of re-mythologization in the modern culture. At the same time there appears an opposite trend – to destroy a myth. The existence of these two types of rationality is explained by appearance of a new type of rationality – post-modern rationality with its plurality and relativity. Rejection of strict regulating mechanisms in the consciousness results in compensatory strengthening of myth in the mass culture and destruction of myth in the elite culture. Similar interpreta-

tion of the cultural processes can be useful for understanding cultural phenomena typical for the industrial and post-industrial society.

UDC 1:008

Ivanova H.M.
**«CULTURAL TRANSITION» AS AN ONTOLOGICAL
 PROBLEM OF INFORMATION SOCIETY**

The problem of investigating transitional state of the modern culture appeared in terms of replacement of industrial – post-industrial (information society) is considered. «Cultural transition» as a transformation state of the modern social ontology constitutes new cultural paradigms. In order to understand modern culture in multicultural topochrone one requires reinterpreting the current concepts of dialogicity and trying to put forward a new model of cultural polylogue, which is the most essential in the modern society.

UDC 37.011:101.1:316

Ivankina L.I., Syssoeva L.S.
**TRANSITIVE POTENTIAL OF EDUCATION ON THE CONTEXT
 OF MODERN CIVILIZATION PARADIGM**

New aspects of education, the interpretation of which have become possible due to the change of social-cultural context of the modern world is pointed out. They expand significantly phenomenology and condition the necessity of revealing a more universal base of education. As a system component the authors propose civilization base, synthesizing socio-cultural, evolutionary, anthropological, humanitarian, innovation, information, synergetic and other approaches, putting forward the problem of education transitivity. Based on the fact that human essence opens, develops in the creative process of self-actualizing person, development of new qualities in a man and, hence, education is capable of clearing out comprehension of the modern civilization context.

UDC 115. 4

Kiriyanova L.G.
**«GLOBAL/LOCAL» DICHOTOMY: ON STATEMENT
 OF THE PROBLEM**

This article is devoted to the analysis of the context and causes of «global/local» dichotomy forming as a basic category of concept «globalization». The process of transformation in our experience of space and time relations is examined; this transformation has also caused the transformation of people's relations, territory of their physical living and their social practice. The process of transformation is considered through historical analysis; socio-philosophical analysis of the essence of spatial-temporal compression and its consequences is given.

UDC 159.901

Shabanov L.V.
METAPHORICAL MODELING OF SENSE AND HIM ADIAPHORICAL REFLECTION

The metaphor frequently becomes the reason of communicative barriers inside the humanitarian area of a science; we have faced the problem of human activity quality in the conditions of an escaping sociality, alienation when metaphors turn adiphora's game by words.

UDC 17

Chmyhalo A.
**RECURRENCES OF DISCOVERIES IN THE CONTEXT
 OF IDEAS HISTORICAL EPISTEMOLOGY**

The examples of scientific discovery recurrence at the different historical periods of scientific knowledge development in the context of historical epistemology are analysed. It is concluded that during the scientific development the conditions of scientific discovery recurrence have also been changed. Historically caused washing out of criteria of scientific character, transformation of the social organization of scientific community, change of role of government in the development of science promoted the situation when the modern science finds to itself the justification by means of authority more often,

through authority, and authority justifies science before a society and dominates over it by means of appeal to science.

UDC 821-31:821.161.1-31

Matveenko I.A.
E. BULWER-LYTTON'S NEWGATE NOVELS RECEPTION
IN RUSSIA OF THE 1830-1860's

The article is devoted to consideration of the genre peculiarities of E. Bulwer-Lytton's Newgate novel, and, in this connection, the causes of interest formed to this genre in Russia of the first half of the XIX century. Reconstruction of this genre reception picture in Russia helps to clarify both the features of the genre modification in the process of its evolution in the English literature and its connection with other genre varieties of novel in the Russian literature.

UDC 811.51

Fomin E.V.
SCIENTIFIC UNDERSTANDING OF THE CHUVASH LITERARY
LANGUAGE AT THE END OF THE XIX – BEGINNING OF THE
XX CENTURIES

Scientific substantiation of the Chuvash literary language, the fifth in population of Russia has been considered. The Chuvash language was already considered to be one of the fundamentally studied languages before the Revolution. At the beginning of the XX century stable literary norms corresponding to the nature of the Chuvash language were formed.

UDC 531/534+530.1(076)

Postnikova E.I., Larionov V.V.
LECTURES ON PHYSICS IN TERMS OF EDUCATION
INFORMATIZATION IN HIGHER SCHOOL

Different means of presentation of demonstration experiment at the physics lectures have been considered. On the basis of students'

questionnaire the results of investigating influence of different techniques of lecture presentation with application of technical means on students' perception are shown.

UDC 37.018.46:371.311

Starodubtsev V.A., Ogoltsova N.N.
MULTIMEDIA PROJECTS IN HIGH AND SECONDARY
SCHOOLS FOR TEACHERS' REFRESHER COURSES

The solution of the complex problem of refresher courses for higher and secondary school teachers on multimedia technical means and in the sphere of using the non-verbal communicative means was carried out with application of the team project methods.

UDC 375.5

Minin M.G., Soloviev A.N.
COMPETENCE APPROACH IN EVALUATION OF TECHNICAL
STUDENTS' LEARNING ACHIEVEMENTS

The two measurement systems of educational quality evaluation are discussed. By means of one of them the influence of entrants' initial training on graduates' competence is described. Experience permitting an increase in initial qualification of higher school entrants is considered.

UDC 621.039(09)

Krivobokov V.P., Kolpakov G.N., Shamanin I.V.
MIKHAIL NIKOLAYEVICH KURIN IS 75-YEARS OLD

The role of the first head of Physico-technical Department of TPU in the history of the Department, Mikhail Nikolayevich Kurin is shown. The specific features of the Department development which occurred under his direction are represented. The main events kept in the memory of many Department graduates are pointed out.