Summaries

V.V. Lasukov
RELATIVIST THERMODYNAMICS OF THE EARLY UNIVERSE

The equation of state of gravitation atoms, which could have been the media, which created the content of our Universe or mini-universes was obtained. The gravitation analogue of the first law of thermodynamics was found.

I.V. Kucherenko
**NEAR–ORE METASOMATISM AS
THE CRITERIA OF GENETIC HOMOGENEITY
OF MESATHERMAL GOLD DEPOSITES, FORMED
IN THE BLACK SHALE AND NON–SHALE SUBSTRATE**

The origin of gold deposits in the regions of shale type is the subject for discussion. The results of the study of near-ore changes of carbonaceous shales in the comparative aspect with the near-ore metasomatism in the other substrate, including crystal one, are of special interest for the assessment of the genetic homogeneity or characteristics of the deposits, formed in any media; they might be used as an argument in the proving system of the magmatogene or metamorphogene hydrothermal genesis of ore formation of the "shale" type. In the plan of this task realization the results of the research of the near-ore metasomatism in Kedrovskoe ore field (Severnoe Zabaikalye) are stated and discussed. There, the industrial ores were formed in various shales, including carbonaceous shales of the Proterozoic rocks. It is shown that the structure (the order of the mineral zonality) and mineralogical and petrochemical characteristics of the near-ore metasomatism in all media are similar, and the mantles belong to the beresite metasomatic formation. Together with the other data, this fact is used for making conclusions concerning the magmatogene mesathermal genesis of the ore formation in the ore field.

V.G. Voroshilov, G.Yu. Boyarko
**QUANTITATIVE MODELLING OF THE ABNORMAL
STRUCTURES OF THE GEOCHEMICAL FIELDS OF
GOLD-BEARING FORMATIONS OF THE CENTRAL ALDAN**

The method of quantitative assessment of abnormal structures of geochemical fields is proposed. Based on obtained indexes the typification of abnormal geochemical fields of gold mines of the Central Aldan was carried out. By the example of the objects of ashberry type the assessment possibilities of their industrial value are shown.

**E.D. Polymogina, A.V. Yezhova, N.M. Nedolivko,
T.G. Perevertajlo, V.A. Reznichenko**
**SPECIFIC FEATURES OF THE FORMATION OF THE J_1^3 LAYER IN
THE WESTERN MOISEEVSKI SECTION, DVURECHENSKI FIELD**

A detailed litho-petrographic analysis of the productive sandstone layer J_1^3 was conducted. The granulometric and mineralogic composition, cement content, intergranular contact features and void structure were analyzed.

The positive correlation dependence was found between volume-filtration properties of rocks, maximum and median grain sizes, crystallized kaolinite cement content, sorted clastic material; and the negative correlation dependence between the amount of clastic rocks, hydromica clay and carbonate cement and volume-filtration properties of rocks.

**V.N. Ustinova, S.S. Ziborov, S.I. Gavrilov,
A.A. Gorkaltsev, A.I. Filimonova, O.I. Boilo**
**GEOLOGICAL SURVEY ON DVURECHENSKI FILED, SOLVING
THE TASK OF MAPPING OF SAND FACIES AND DISTIN–
GUISHING OF THE HIGH–CAPACIOUS COLLECTORS ZONES**

The results of the geological and geophysical surveys of upper Jurassic deposits on Dvurechenski filed are stated in this work. Detailed geological and geophysical facial models of the deposits are designed, suppositions about the conditions of productive sandstones formation are made. New approaches towards the analysis of the surface relief according to the reflecting seismic horizons are proposed; they allow to increase the efficiency of seismic-facial and electro-facial prognoses. Scientists draw special attention to the need to attract all the available geological and geophysical information, use both direct and indirect features of facial characteristics while ranging the facies.

G.Yu. Boyarko
BIRIKENSKOYE FIELD OF PHOSPHATES

Exogenous Birikenskoye filed of phosphates in Southern Yakutia is characterized by the formation of meso-neozoic areal residual soil, which is developed along the early proterozoic apatite-carbonate metasomatite of seligdarski type. Useful minerals include detritus apatite and newly formed francolite. Reserves and resources of Birikenskoye filed comprise 64,2 mln. tones of P_2O_5 with the average content of P_2O_5 7,79 % and ore-bearing coefficient 0,777. In the northern part of the field there local block of rich phosphate ores is distinguished with the average content of P_2O_5 19,73 %, which includes 5,5 mln. tones of P_2O_5.

L.D. Pavlova, V.N. Fryanov
**RESEARCH OF INFLUENCE OF MOVING BREAKAGE FACE
ON THE CHARACTER OF HOVERING AND CYCLIC FAILURE
OF UNDERWORKED ROCKS OF COAL SEAM ROOFS**

The paper studies influence of the moving breakage face on the character of concentration coefficient of vertical stresses in front of breakage face, hovering and cyclic failure of underworking rocks of a roof of coal layers which is done with the use of spatial geomechanical model of deformation and destruction of rocks in the zone of influence of the excavation, developed on the basis of the method of final elements.

O.G. Savichev
**ESTIMATION OF WASTEWATER INFLUENCE
ON CHEMICAL COMPOSITION OF TOM RIVER WATERS**

Generalized data on the total content of major ions (C_{ir}) and organic substances (according to carbon content) in the waters of the river Tom during winter mean water and in the sewage flowing into the river are stated in this paper. The basin calculation of the change of C_{ir} and C_{opr} in the river Tom under the influence of its tributaries and the main sewages on the territory from Mezhdurechinsk up to its mouth has been carried out for the first time. It is shown that the considerable influence of the industrial waters on the mineralization and general concentration of organic substances in the river Tom are observed on the territory from 8 to10 kilometres. At the same time the

discrepancy between the estimated and measured values of $C_и$ and C_{opr} has been observed; this fact proves the presence of efficient mechanisms of self-purification of the river waters.

UDC 551.8

Yu.I. Preis, L.V. Karpenko
PECULIARITIES OF STRATIGRAPHY, DYNAMICS, AND GENESIS OF OLIGOTROPHIC GRYADOVO-MOC-HAZHINNY COMPLEX IN THE INTERFLUVE OF OB AND VASUGAN (MEDIUM TAIGA ZONE OF WESTERN SIBERIA)

Comparative analysis of the botanical content data and radiocarbon dating of 34 samples of peat from the complex cross section "Vodorazdelnoe" (Sosnovo-Machninskoe bog, Tomsk region) and of the reconstruction of the Holocene climate has revealed multiple disturbances of the endogenous bog formation process. Cyclic and metachronical characters of the changes of the vegetal communities, water regimes, and the process of peat accumulation, significant differences in the increment of peat formation under the elements of the oligotrophic gryadovo-michazhinny complex have been observed. These phenomena are preconditioned by the differentiation of the micro relief of the mineral bottom and by the creogenous processes.

UDC 537.521.7:621.315.61

O.S. Gefle, E.I. Cherkashina
DIAGNOSTICS OF PRE-BREAKDOWN CONDITION OF POLYMERIC DIELECTRICS BY THERMAL EFFECTS

The thermo-vision and optical methods were used in this study for the diagnostics of pre-breakdown condition of polymeric dielectrics. Step-wise nature of development of the polymeric dielectric failure in a divergent field was found. It is shown that the tree-inception and transition from the previous stage of a dielectric failure to the subsequent one is accompanied by the increase in the temperature difference by a factor of 1,5...2,0 irrespective of a dielectric's type. Empirical relations being offered in this paper allow the tree-inception and the breakdown time of dielectrics to be estimated.

UDC 537.534.2

V.P. Narkhinov
OBTAINING AND RESEARCH OF FLAT SYMMETRICAL CONVERGING BEAMS FROM PLASMA OF MODIFIED PENNING DISCHARGE

A penning discharge is used to obtain circular plasma, which is capable of emitting electrons and ions converging radially to the center of a coaxial system. The operation of the device, which can easily be installed in the coaxial system of a gas-discharge electron source, is described. The short-focus radial beams are found to feature a relatively high current uniformity

UDC 681.3.01:528.71

A.A. Mitsel, N.V. Kolodnikova, K.T. Protasov
NONPARAMETRIC ALGORITHM OF TEXTURE ANALYSIS OF AEROCOSMIC IMAGES

New nonparametric algorithm of texture analysis is given in the article. The questions of the slide window size influence on texture analysis results and the questions of choosing the informative texture features subset are considered. The results of considered texture analysis algorithm are given in the article.

UDC 621.378:681.3:535

S.M. Slobodyan
ANALISYS AND OPTIMIZATION OF TELEVISION SCANNING OF SPACE WAVE-FUNCTION PHASE OF OPTICAL TRACKING PHASEMETER: 1. SCANNING TRACKER

Analysis and optimization basics of television three-dimensional scanning of space wave-function phase of optical tracking phasemeter are conducted. The efficiency and speed of scan tracking in field basic algorithm of phasemeter is examined.

UDC 621.373.826.004:662.3

V.V. Medvedev
ON BRIGHTNESS TEMPERATURE OF THE EROSION TORCH UNDER THE INFLUENCE OF LASER PULSE OF MILLISECOND DURATION ON BALLISTITE GUNPOWDER

Brightness temperature Tb of an erosive torch at the distance of 6 mm from the face surface of ballistite fuel is experimentally determined. The torch was exposed to laser radiation (with duration of a pulse 4,5 ms, with length of a wave 1,06 microns and density of energy up to 60 J/sm^2) on nitroglycerine opaque structure such as gunpowder "N". The block diagram of the experiment and a technique for Tb measurement are obtained. The experiments were conducted outdoors at the temperature of 20 °C. Both low-frequency and high-frequency pulsations of brightness temperature in time were observed. The interpretation of experimentally observed phenomena is given.

UDC 614.833:547

A.I. Sechin, A.A. Shatalov
ON THE ISSUE OF PRESSURE LIMITS OF FLAME DISTRIBUTION IN AIR-GAS SYSTEMS

The values of concentration limits of flame distribution of some solvents within the pressure range 0,1...100 kPa in air-gas systems are experimentally studied. Two pressure limits of flame distribution are revealed. It is shown that for every gas mixture there exists a definite "minimum pressure" below which ignition is impossible at any content of the mixture. The obtained results show a known regularity of influence of water vapours on burning limits of gas mediums under normal conditions. The studies have revealed that for vapour-gas model systems the second (pressure) limit is the fundamental property of a gas mixture which manifests itself under critical conditions.

UDC 621.039.54

V.I. Boiko, I.V. Shamanin, T.L. Safaryan
BALANCE OF ACTINOIDS IN THORIUM-PLUTONIUM NUCLEAR FUEL CYCLE BASED ON SERIAL LIGHTWATER REACTOR

The method of constructing the optimal scheme of nuclear fuel movement which allows to organize a very long campaign of the nuclear reactor is presented. The balance of actinoids in the thorium-plutonium fuel cycle formed by 8-year long campaogns of the reactor ВВЭР-1000 with the movement mode from the periphery to the centre of the active zone under partial agitation in azimuth direction is determined. The optimal rearrangement scheme of fuel rod arrays providing the record rate of fuel burning-out equal to 94,4gWt·24 hours/t at the burning-out depth of 239Pu up to 93,3 % is determined.

UDC 66.023.2

I.A. Tikhomirov, D.G. Vidyaev, A.A. Grinyuk
TRANSFER EQUATION OF MASS AND LIGHT COMPONENT ALONG THE COLUMN WITHOUT LOSSES

The paper describes the scheme and the technique of continuous isotope separation by the amalgamate-exchange method in the countercurrent column with the nozzle with Rashig ring. The transfer equation of mass and the light component along the column is derived.

UDC 541.14

E.P. Surovoy, L.N. Bugerko, S.V. Rasmatova
STUDIES OF KINETIC REGULARITIES OF PRODUCTS FORMATION IN THE PROCESS OF LEAD AZIDE PHOTOLYSIS

Using the methods of mass-spectrometry, spectrophotometry and electronic microscopy it is established that preliminary irradiation of lead azide by light (λ=365 nm and intensity of $2\cdot10^{15}$ quanta·cm^{-2}·c^{-1}) in vacuum ($1\cdot10^{-5}$ Pa) alongside with increase in the speed of photolysis and photocurrent results in occurrence of a new long-wave (up to λ=600 nm) area of spectral sensitivity. The speed constants of lead azide photolysis are determined. As a result of measurements of the contact potential difference, volt-ampere characteristics, the contact photoelectrical moving force, and the photocurrent, it is established that at photolysis of lead azide microheterogeneous systems PbN$_6$ (Am)-Pb (photolysis product) are formed. It is shown that diffusion of anion vacancies towards the neutral center of Pb$_n^0$ limits the process of photolytic lead formation.

UDC 541.124-13:533.9

G.G. Savelyev, V.V. Shamansky, M.I. Lerner
KINETICS OF CHEMICAL REACTIONS AT ELECTRICAL EXPLOSION OF METALS IN ACTIVE GASES

The approach to the analysis of kinetics of chemical reactions at electrical explosion of Al conductors in active gases is suggested. The given approach is based on the experimentally determined dependence of reaction output upon initial concentration of the active gas and the dependence of expansion speed of the vapour-drop cloud.

UDC 537.2:533.922

D.V. Ponomarev, A.I. Pushkarev, G.E. Remnev
INVESTIGATION OF MORPHOLOGY AND PHASE COMPOSITION OF NANODISPERSED OXIDES TiO_2 AND $Ti-Si-O_X$ OBTAINED BY NON-EQULLIBRIUM PLASMOCHEMICAL SYNTHESIS METHOD WITH THE APPLICATION OF PULSED ELECTRON BEAM

The investigation results of nanodispersed titanium dioxide and composition nanopowder $x \cdot TiO_2 + y \cdot SiO_2$ are presented in the paper. The powders are synthesized in the non-equilibrium plasmochemical process initiated by the pulsed electron beam. The initial mixture contains oxygen, hydrogen and gas-phase titanium tetrachloride (or the mixture of $SiCl_4 + TiCl_4$). The analysis of particles size is presented. The X-pay phase analysis and roentgen fluorescent analysis are carried out. It is shown that the synthesis process has a volume character. The analysis of energy consumptions of electrophysical installation for powder synthesis is executed.

UDC 542.883

O.V. Liseenko, L.H. Mishenina, L.P. Borilo
PROPERTIES OF THIN FILMS OF $Ta_2O_5-La_2O_3$ SYSTEM PRODUCED BY SOL–GEL METHOD

Thin films of $Ta_2O_5-La_2O_3$ system were obtained with the contents of lanthanum oxide ranging from 0 up to 82 mol. %. The diagrams of structure – property state (parameter of refraction, thickness) are constructed. Optical and electrophysical properties of synthesized films are studied. Morphology of thin films surface of the system $Ta_2O_5-La_2O_3$ is investigated by the method of raster electronic spectroscopy.

UDC 669.295:539.211

I.A. Kurzina
INVESTIGATION OF THE OXIDATION PROCESS ON THE SURFACE OF Pt_3Ti (510) BY SCANNING TUNNELING MICROSCOPY

The investigation results of elemental composition, structure and morphology of the Pt_3Ti (510) single crystal surface by means of X-ray photoelectron spectroscopy, low energy ion scattering, low energy electron diffraction, scanning tunneling microscopy are presented. The clean Pt_3Ti (510) surface consists of terraces separated by double atomic steps (3,9 Å) having the average width about 20 Å. The first atomic layer of the surface is composed of platinum only. The oxidation process of Pt_3Ti surface at pressure $3 \cdot 10^{-4}$ Pa and temperature 773 K is studied. It is found that at early stages of the oxidation process the islands of TiO are formed at the edges of terraces. Further oxidation leads to the growth of a titanium oxide layer (with a composition close to TiO) and significant change of the surface morphology.

UDC 543.253

Yu.A. Karbainov, G.B. Slepchenko,
E.G. Cherempey, S.N. Karbainova, D.S. Stukalov
EFFECT OF SUBSEGUENT CHEMICAL VOLUME REACTION ON ANALYTICAL SIGNAL IN STRIPPING VOLTAMMETRY

Method for separating analytical signals of reversibly and irreversibly oxidizing metals having similar values of their limiting currents potentials at mercury film electrode has been proposed.

UDC 666.1.022.4:66.093.2

N.S. Krashennikova, O.V. Kazmina, I.V. Frolova
TECHNOLOGICAL PECULIARITIES OF USING NEPHELINE SODA FOR MANUFACTURING ELECTROVACUUM GLASS

The results of the integral analysis of properties of soda ash and nepheline soda are presented; the technological peculiarities of manufacturing glass mixture with the use of nepheline soda are considered. It is found that the use of compacted raw concentrated products is an efficient way to add nepheline soda to glass mixture in order to increase its quality.

UDC 631.893.002.237:553.973

S.A. Babenko, O.K. Semakina, K.P. Bokutsova, O.V. Likhanova
DEVELOPMENT OF GRANULATION TECHNOLOGIES OF ORGANIC–MINERAL FERTILIZERS ON THE BASIS OF LAKE SAPRPOPELS

The granulation technology of organic-mineral fertilizers with long-term effect on the basis of lake sapropels of Tomsk oblast is developed. Fertilizers granulation is performed by nodulizing on the plate granulator, tableting and extrusion. Obtained granules are firm enough to be mechanically applied to soil, and they do not get compressed during the process of storage.

UDC 547.539.04

V.K. Chaikovsky, A.N. Novikov
INTERACTION OF NAPHTHALENE WITH IODINE WITH THE PRESENCE OF SULPHURIC AND NITRIC ACIDS ADMIXTURE

Systematic investigation of the interaction of naphthalene with iodine with the presence of sulphuric and nitric acids admixture in the acetic acid is presented in the paper. Individual iodine-bearing substances are selected and identified. It is shown that the addition time of sulphuric and nitrogen mixture, its amount and temperature of the whole process influence the content of the reaction product.

UDC 541.128;66.097;66.012.46

S.I. Galanov, A.I. Galanov, M.Yu. Smirnov,
O.I. Sidorova, L.N. Kurina
OXIDATIVE DIMERIZATION OF METHANE INTO ETHYLENE USING OXIDE MANGANESE–BEARING SYSTEMS

Catalyst systems based on manganese oxide promoted with the compound of alkali metals are investigated in the reaction of oxidative dimerization of methane into ethylene under the conditions of continuous and repeating modes. The maximum ethylene output is obtained using catalysts that contain optimum relationship of manganese oxide and spinel phases $LiMn_2O_4$.

UDC 621.83(04)

E.A. Ephremenkov
DEVELOPMENT AND DESIGN OF TRANSMISSIONS WITH INTERMEDIATE ROLLING ELEMENTS OF THE NEW KIND

Transmissions with intermediate rolling elements are analyzed, the transmission with unloaded separator is proposed, and recommendations on mechanism design and selection of optimum initial parameters of transmission are given.

UDC 539.621+674.053

A.A. Kondratyuk, Yu.V. Grinayev, V.K. Shilko
NEW APPROACH TO INTENSE STATE OF BAND SAWS REDUCTION

Intense state of a band saw in the cutting area is considered in this paper. Processes based on the conceptual model of bandsawing machine are discussed. Kinematical method of intense state level reduction is suggested due to the implementation of the lay-out diagram of a cutting mechanism with a slack band saw.

UDC 66.796.2

V.V. Evstigneev, A.L. Novoselov,
V.I. Prolubnikov, N.P. Tubalov
MODELLING OF WASTE GASES OF CHEMICAL PRODUCTION AND DIESEL EQUIPMENT ABRADING PROCESSES FROM SOLID PARTICLES USING SHS FILTERS

Mathematical model of filtration and burn-off soot, waste diesel gases through porous surface of SHS materials obtained on the basis of ferric and aluminum oxides is considered in this paper.

UDC 621.181

A.S. Zavorin, Yu.Ya. Rakov
PHENOMENOLOGICAL MODELS OF WATER–COOLED DEPOSITION IN BOILERS

Some ideas necessary for the formation of physical processes and vindication of full-scale and laboratory experiments in correspondence to the existing classification of the external surface contamination of boiler heating are systematized. The role of thermophysical properties and thermal conductivity in particular, in the evolution of layered structure is specified. Basic physical and chemical factors determining deposition development are shown.

UDC 621.396.6

G.V. Kuznetsov, A.V. Belosertsev
NUMERICAL SIMULATION OF POWER TRANSISTORS TEMPERATURE FIELDS SUBJECT TO TRANSPORT COEFFICIENT BREAKDOWN

Two-dimensional task on non-stationary temperature field in power bipolar transistor case with eight heat generation sources of 60 W in total is numerically solved. Grid parameters influence on the accuracy of temperature computation is investigated. It is stated that at definite grid parameters high accuracy of computation is possible to be obtained.

UDC 621.791.2

O.G. Brunov
MODEL OF DROP TRANSMISSION INTO THE MOLTEN POOL

A model responding to desired conditions of drop transmission is created to consider separation and spill over conditions of electrode metal drop into the molten pool as well as to calculate effective forces. This allows to define streaming process of a glycerin drop into the molten pool at pulse drop motion and at its continuous acceleration. Kinogramme of processes and calculation formulas are enclosed.

UDC 548.4.001:621.791.052.08:620.179.16

A.M. Apasov, A.A. Apasov
INITIATION MECHANISM, FORMATION AND DIAGNOSTICS OF FAULTY FUSION DURING WELDING. PART 1

Results of model and experimental investigations of the initiation process, formation and development of faulty fusion during welding are discussed in this paper. The given models allow to simultaneously carry out registration of faulty fusions in real time and form controlled signals to correct welding parameters.

UDC 621.315.687.3:519.863

G.M. Lebedev, D.M. Meshkov, E.M. Meshkov
DEFINITION OF OPTIMUM SIZES OF CABLE SEALING ALIGNING CONE

Issues of modeling of an electric field in three-dimensional space for three-core cables with metal sheath with the voltage of 10 kV are considered. Aligning cone is suggested in order to decrease the maximum electric field strength in cable sealing. Methods of optimum planning of the experiment and non-linear programming are used for size optimization of the leveling cone.

UDC 621.375.026

A.A. Titov, M.A. Titova
OUTPUT STAGE IMPEDANCE BUFFER SYNTHESIS OF BROADCASTING AND RADIO COMMUNICATION TRANSMITTERS

Method of normalized value synthesis of values of the impedance buffer in the form of band-pass filters is suggested. This method allows to minimize transformation ratio deviation from the desired value in the operating frequencies of a buffer. Tables of normalized element values of two buffer types as well as the examples of their calculation and usage in power amplifiers are shown. Advantages of the considered buffers in comparison with traditional transformers in the form of low pass filters are described.

UDC 621.313

A.B. Shipitsin, A.N. Moiseichenkov
MATHEMATICAL MODEL FOR THE EVALUATION OF INSTANTANEOUS SPEED SENSOR OF COMBINED MULTIFUNCTIONAL BRUSHLESS EXCITER

Mathematical model to calculate EMF of the measuring coil induced by tooth harmonic of composite field in the operating air gap of the combined multifunctional brushless exciter subject to variations in the exciter speed and armature reaction is suggested in this paper.

UDC 621.313.333

O.O. Muravleva, E.V. Vekhter, T.V. Zharikova
ENERGY CHARACTERISTICS OF THE INDUCTION MOTOR INFLUENCE ON PUMPING UNIT ENERGY SAVING

Calculation method of energy saving when applying variable-frequency electric drive in pumping and central heat supply stations is considered. Influence of the induction motor energy characteristics on energy saving is evaluated.

UDC 338

O.V. Popov, N.N. Tsukublina
INNOVATIVE STRATEGIES AS THE ELEMENT OF STRATEGIC PLAN OF TERRITORY DEVELOPMENT. PROBLEMS AND OBJECTIVES OF STRATEGIC DEVELOPMENT PROGRAMMES OF INNOVATION POTENTIAL ON THE TERRITORY

Stable territory development is the subject of inquiry of the given paper. Formation and development of innovation potential of the territory are considered. Problems, objectives, and methods of solution by various powerful structures on the territory are discussed.

UDC 911.3(470)(075.8)

A.V. Andreyev, E.V. Pluchevskaya
ON REFORMATION OF THE ADMINISTRATIVE AND TERRITORIAL DIVISION OF THE RUSSIAN FEDERATION

On reformation of the administrative and territorial division of the RussThe problem of reformation of the administrative and territorial division of the Russian Federation as well as the extension of subjects of the federation is considered to be an objective and necessary process. The paper reveals the fact that uniting processes are being continuously improving since the beginning of the 90s. It also states that such processes are based on horizontal and vertical integration and contribute to complete satisfaction of the country's needs and development of the regions.

UDC 330.5

A.A. Belousov
NATIONAL SECURITY AND CHOICE OF THE EFFECTIVE CONTROL SYSTEM OF SOCIAL AND ECONOMIC DEVELOPMENT OF RUSSIA

National security of Russia and choice of the effective control system of its social and economic development, the methodology of bipolar control system formation as natural and necessary condition of the effective development and functioning of country's economy is considered.

UDC 111.1.1:159.953

E.A. Tsibulevskaya, K.A. Ankudinova
POWER LEGITIMACY NATURE IN THE DISCOURSE OF TRANSITIONAL TYPE OF SOCIALITY

The power legitimacy nature in the discourse of transitional type of sociality is considered; social institutions specificity and the transit time values are revealed. The problem of social stability maintenance is also considered.

UDC 947.8

S.A. Velichko
RUSSIAN AND WESTERN HISTORIOGRAPHY OF PERESTROIKA IN THE USSR (1985–1991)

The period of Perestroika in the USSR (1985–1991) was one of the most important events in the history of our country. At present, main con-

cepts and methods of this period assessment are being created in historical sciences. The aim of the paper is to show the processes of establishment and development of both Russian and Western perestroika historiography. The article deals with the reasons, essences and consequences of Gorbachev's reforms. The author emphasizes and analyzes historical literature, which is devoted to social-political movement of 1985–1991.

UDC 101.1:316

I.V. Kokareva
INTEGRATIVE PROCESSES IN THE EUROPEAN UNIVERSITY EDUCATION: TENDENCIES AND TRENDS

The historical stages of education internalization are considered. Various interpretations of the term "high school internalization" are proposed. The idea of the main vision of internalization processes of university education is presented.

UDC 37.01:100.1:316

L.I. Ivankina
CULTURAL CONTEXT OF THE INFORMATIONAL PARADIGM OF MODERN EDUCATION

Due to the factor that the science is singled out into a direct productive power, which has become a determinative factor for both self-preservation and the society development, the information is acquiring a specific meaning that is reflected in the theoretical concepts of new informational society. Intensive and wide use of information intellectualizes the environment and transforms it into the information realm or a specific intellectual realm. The possibilities of using the scientific discoveries both for the people's welfare and to harm them leads to the ambiguous attitude to the science right up to its accusation in the odium and appealing to "a crusade" against it. The way out is not in the return to the traditional society but in the educational information paradigm the aim of which is to make culture development more human and to find the answer to the challenges of the time. Education is becoming a "starting algorithm" of social changes.

UDC 17

I.B. Ardashkin
THE ONTOLOGY OF A PROBLEM: EPISTEMOLOGIC APPROACH

The opportunity of turning the ontology of the problem into a special life measurement is onsidered. The author claims that the genesis of this ontology can be found out when we apply to the philosophical understanding of sphere "Ego" and sphere "Other".

UDC 122/129

S.P. Myakinnikov
THE BASIS OF THE VISION OF ECOCENTRISM AND ECOTHINKING

The comparative analysis of ecocentric ideas in modern science is carried out. The ecocentric definition as a new ecological vision is determined. The basic visions of ecocentrism are developed and they are considered to be the alternative ones for anthropocentrism and natural centrism. The formation of the ecocentric gnoseological aims is considered by the example of ecological thinking, i.e. the thinking where logic and feelings are dialectically synthesized in the course of studying the relationships between the society and nature.

UDC 37.01+159.9

G.I. Egorova
INTELLECTUAL TRAINING OF THE STUDENTS OF TECHNICAL UNIVERSITY AS AN ESSENTIAL CONDITION OF THE EDUCATION QUALITY INCREASE

How is it possible to increase the quality of chemists training in technical university under the modern conditions? The author of the article links the answer to these and other questions with improvement and development of the forms, methods, means of intellectual training of students, development of their intellectual features during the whole process of studying at higher educational institutions. Intellectual abilities play the leading role among the intellectual features. Therefore, psychological and pedagogical analysis of this phenomenon is carried out in the article, a specific variety is given. Well-defined means, forms, methods of improving the intellectual abilities, which play the leading role in the enhancement of the quality of specialists' training are shown.

UDC 512.64:372.851

A.A. Yeltsov, G.A. Yeltsova, L.I. Magazinnikov
ON ORGANIZING ROLE OF LINEAR ALGEBRA WITHIN THE MATHEMATICS COURSE AT A HIGHER TECHNICAL EDUCATIONAL INSTITUTION

The organizing role of linear algebra in designing and studying the course of higher mathematics at a higher educational institution is shown. The approach is suggested which has been successfully implemented at Tomsk State University of Control Systems and Radioelectronics.

UDC 55(09)

A.G. Bakirov
MY WAY TO GEOLOGY

The first periods of life of the oldest professor of IGOGI (Institute Geology of Oil&Gas Industry) Alexander Grigorievich Bakirov are described in the paper. His 90th anniversary is celebrated on the February 7, 2005.

UDC 553(09)

M.P. Kropanina , Yu.N. Popov
ORGANIZER IS A VERY IMPORTANT PERSON (DEVOTED TO THE 65th ANNIVERSARY OF PETER IVANOVICH SHERIN)

December 7th, 2004 is the 65th anniversary of Pyotr Ivanovich Sherin. He was the one who organized and ran publishing and printing house of Tomsk Polytechnic University. Everyone remembers him as an extraordinary, hearty, active and interesting person.

UDC 549.1(09)

A.Ya. Pshenichnikov
MINERALS NAMED AFTER GEOLOGISTS FROM TPU OR DISCOVERED BY THEM

Information on minerals called in honor of geologists from TPU and minerals discovered by TPU graduators is presented in the paper.