Summaries

UDC 514.76

Y.T. Ivlev, Y.D. Glazyrina
ON THE CLASSIFICATION OF PLANE DISTRIBUTION IN FOUR-DIMENSIONAL EUCLIDIAN AREA

This article continues the authors' ideas on the distribution of two-dimensional planes in four- dimensional Euclidian area and is devoted to geometrical interpretation of analytical mappings $f_{\alpha a}, \varphi_{\alpha a} : L_2^{\alpha} \to L_2^{b}$ and their evidence.

UDC 530.12.531.51

V.V. Lasukov
QUANTUM COSMOLOGY AND THE PROBLEM OF TIME

This work is devoted to the investigation of the problem of time variable introduction into various cosmological models of the Universe. It is known that due to the scale invariance the cosmological models are regarded as systems having first-type connections, which results into the necessity to introduce time and quantization. It is shown that the account of Logunov's equations of connections stipulates for the difference from Hamiltonian zero, which allows solving the problem of quantum cosmology time outside the framework of traditional approaches to this task.

UDC 53

V.A. Nagorny, A.P. Potylitsyn
ANGULAR CHARACTERISTICS OF COHERENT TRANSIENT RADIATION FROM THE BUNCH OF ULTRARELATIVIST ELECTRONS OF VARIOUS FORMS

The characteristics of coherent transient radiation (CTR), which appears when ultra relativist electrons bunch passes through the medium interfaces, are considered in this work. The comparison between two existing approaches to radiation description is made. It is shown that both approaches produce identical results. The characteristics of CTR excited by electron bunches of various forms (orb, disk, cone) when it passes the sloping medium interface, are examined. The calculations have shown that with some values of bunch parameters the angular characteristics of CTR differ significantly from radiation of one electron. As the calculations have shown, together with maximums of transient radiation "forward" and "backward" (TRF and TRB) in the angular distribution of CTR there may exist also additional maximums at the angles, which significantly exceed γ^{-1} (γ-Lorenz factor of the electron). Existence of additional maximums in the angular distribution may be interpreted as the demonstration quasi-Cherenkov mechanism of CRT. However, intensity of quasi-Cherenkov maximums is much lower than the intensity of TRF (TRB) maximums.

UDC 521.1:629.78:523.31-852; 521.1:629.78:523.4-852

V.G. Spitsyn
MODELS OF IONOSPHERIC PLASMA DISTORTION, CREATED BY SPACECRAFT JET ENGINE

Distortions of ionospheric plasma, created by gas stream of the jet engine of the spacecraft and able to influence the distribution and scattering of radio waves, are examined. Mechanisms of ionospheric plasma distortions formation created by the spacecraft with the working engine are analyzed. The stochastic model of diffusion process of ionospheric plasma ions into gas stream of jet engine of spacecraft is described. The results of calculations of formation of sphere with high concentration of charged particles of ionospheric plasma near the borders of gas stream of spacecraft jet engine are cited. The models of plasma distortions, created by gas stream of spacecraft jet engine in ionosphere are proposed.

UDC 539.3

V.N. Barashkov
MATHEMATICAL SIMULATING OF DEFLECTED MODE OF THROWN FITTINGS

The principles of analysis of durability of thrown fittings are represented here, which allow to model their behavior in intensive loading and somehow to replace expensive experimental research on development of pallets design and thrown elements, material selection, external loads values, etc., by relatively cheap and effective numerical experiment. The task of determining elastic-plastic deflected mode is solved with the help of variation-differented method, which implements variation principle of Lagrange by method of finite difference. Physical correlations are accepted according to the theory of small elasto-plastic deformations, and geometrical correlations are accepted in the form of Koshi equations. Physically nonlinear problem is solved by the method of variable elasticity parameters. The above-mentioned examples confirm the opportunity of quasi-statical approach, known from the design practice, to the assessment of durability of such constructions.

UDC 612.8:519.7

V.A. Kochegurov, L.I. Konstantinova, T.E. Khokhlova
WAVELET TRANSFORMATION OF INDUCED ELECTRIC MUSCLE RESPONSE

To assess the severity of pathological processes and the dynamics of nerve rehabilitation under medical treatment in traumas of neuromuscular system of extremities, the signal characteristics are used. These characteristics are registered when the nerve is stimulated by electric current. Analysis of wavelet coefficients is given for both individual patients and different groups according to the seriousness of their nerve trauma.

UDC 535.416.3

Y.N. Isaev
THE DESIGN OF BIORTHOGONAL WAVELET BASES FOR OPTIMAL SIGNALS NOTATION

The algorithm of synthesis of biorthogonal wavelet bases and their multiscale analysis is described. Examples of signal reconstruction and compression on the basis of designed wavelets are given. Their similarity to Karunen-Loeve basis is described.

UDC (519.718:621.396)535

S.M. Slobodyan
THE INFLUENCE OF FOCUSING ERROR ON ESTIMATION OF IMAGE FRACTAL DIMENSION

This paper examines the interrelation between fractal regularity and degradation (tailing and defocusing) of image space in the sphere of outlet plane of the optical system. The use of differential control of optimal focusing plane positioning allowed avoiding the impact of image illumination instability on the assessment of fractal regularity. The squared relationship of fractal regularity with defocusing was revealed. The algorithmic and hardware methods of defocusing error elimination were proposed. Method and principles described in the work allow to make a straight measurement of fractal and Hausdorff regularity of multi-dimensional object image with the relative surface of the order $2{,}5...3{,}0 \cdot 10^{-2}$ in the real time.

UDC 552.322+553.411.071

I.V. Kucherenko

PETROLOGICAL AND METALLOGENIC EFFECTS OF STUDY OF SMALL INTRUSIONS IN THE MESOTHERMAL GOLD-MINING FIELDS

The data that testify the material and genetic uniformity of gold-mining fields of various ages, formed in carbon-shale and non-shale substance in the oil-mining regions of Siberia (Lensky, Severo-Zabaikalsky, Okino-Kitoisky, Yeniseisky, Martaiginsky regions) are cited and discussed in this paper. The place of small intrusions in the content of ore-producing antidromic granite-doleritic fluido-magmatic complexes of deep rock is shown. The signs of early granitoid and late basaltoid components of each complex being parts of the same petrogenetical process, the repetition of complexes in time and space are the substantion for distinction of granite-doleritic magma formation. According to the preliminary data, the latter is convergent and is formed in the regime of accretion (major curve-continent) and collision. Near-ore metasomatites of ore fields possess the features of mineral-petrochemical and geochemical inheritance of the products of internal dake metasomatism; in combination with structural correlations of late basite dakes and ores, it reflects the genetic bonds of ore-formation with moderate alkaline basaltic magmatism. The obtained conclusions may be used to forecast gold-mines in new areas and ore bodies in familiar areas.

UDC 550.8.013:553.068.27

V.V. Velinsky, G.A. Tretyakov, V.A. Simonov

PHYSICAL-CHEMICAL MODELING OF THE PROCESS SERPENTINIZATION AND THE ROLE OF OCEAN SERPENTINITES IN HYDROTHERMAL ORE-FORMATION

The process of serpentinization of ocean ultramafits in the system gyperbasite-ocean water in the temperatures from 2 up to 400 °C and pressures 0,5...1,0 kbar on the basis of physical-chemical modeling results is being discussed. It is determined that mass serpentinization is carried out within the limits 25...100 °C with the formation of steady paragenesis (serpentine+magnetite+brucite+epidote±chlorite±illite±gypsum±calcite±anhydrite). The content of minerals is determined by temperature and by correlation of water and rock, while pressure does not significantly affect the serpentinization. Balanced concentrations of ore components in the serpentinization solutions are calculated. It is shown that they are too small and comprise, for instance, for $T = 400$ °C – $n \cdot 10^{-4}$ – $n \cdot 10^{-6}$ mole/kg. Taking this into consideration, it can be concluded that they cannot determine the sulfide specialization of hydrothermal systems, referred to ocean serpentinites, for ultramafic rocks of the oceanic crust are only geochemical barriers, where the metamorphism of the deep ore-bearing solutions takes place.

UDC 553.493.5 (571.15)

A.A. Potseluyev, V.I. Kotegov

MINERALOGICAL AND GEOCHEMICAL FEATURES OF GRAPHITE FROM KALGUTINSK GREISEN DEPOSIT

In the ore veins of Kalgutinsk rare metal greisen deposit graphite has been found in association with quartz and sulfides. The graphite is characterized by disordered, polycrystal structure transient to the holocrystal one. Sizes of the graphite microcrystals vary from 4 to 6 nm. Graphite has light isotope carbon composition. Value $\delta^{13}C$ changes within the range from $-26{,}3 \pm 0{,}4$ ‰ to $-26{,}6 \pm 0{,}3$ ‰. High concentrations of Au, Ag, Hg, Te, Sb, Bi, Cu, Pb, Zn, Fe, and S have been found in the graphite grains. Gradual increase of carbon with depth and spatial correlation to W, Mo, Cu, Au, Pt, Pd and other metals have been noticed. Graphite has been formed together with the main mineral associations during the main ore formation stage; and that corresponds to the investigations results of the gas-liquid inclusions. The results of conducted research make it possible to assign a significant role to carbon in the ore formation process, the reducing character of the ore-bearing fluids, and their abyssal source.

UDC 550.831.05(571.1)

V.N. Ustinova

SEISMIC DATA AT THE STAGE OF OIL AND GAS FIELDS EXPLORATION

At the stage of oil and gas fields exploration, new opportunities of seismic prospecting are revealed concerning morphostructural analysis and development of methods of speed values studying. Improvement of interpretation techniques in geological interpretation of speed parameters and development of structural-geometrical criteria for paleosurface relief analysis make it possible to introduce into the practice of geological and physical investigations new ways to trail tectonic faults, systematize tectonic fracturing, reveal and contour oil- and gas- bearing nests of the collector.

UDC 543.42

V.I. Otmakhov, E.V. Petrova

ATOMIC-EMISSIVE ANALYSIS OF BIOLOGICAL OBJECTS WITH THE PURPOSE OF CONDUCTING ECOMONITORING OF TOMSK OBLAST AND GORNY ALTAY REGIONS

The uniform approach has been devised to the analysis of objects of biological origin by means of the method of atomic-emissive spectroscopy. The following points have been viewed: features of biomaterials preparation with reference to the given method; possibilities of element quantitative analysis; the foundations and mechanism of their influence on the outcomes of quantitative determination of the controlled microelements.

UDC 621.039.524

A.V. Kuzmin

USE OF NOMOGRAMS FOR CALCULATION OF THERMAL REACTOR POISONING BY SAMARIUM

This article concerns calculation features of samarium poisoning of a thermal-neutron reactor in closedown mode. The principles of nomogram composition and usage for reactivity loss estimation have been shown. The new nomograms for starting and closedown modes have been suggested. The comparison with the non-stationary task solved by the graphic-analytical method has been made.

UDC 532.6

V.A. Mamaeva, A.I. Mamaev

MICROPLASMOUS PROCESSES AT LIQUID/LIQUID BOUNDARY IN POTENTIOSTATIC MODE. PART 1

The new phenomenon – occurrence of microplasmous processes at liquid/liquid boundary-has been revealed. The paper deals with theoretical modelling of initial stages of microplasmous processes occurrence due to the changes of reacting substances concentrations and the electrical field voltage close and at the boundary of two liquid phases in potentiostatic mode at high-voltage polarisation of the phases' boundary.

UDC 547.495.2:547.539.4

E.A. Mamaeva, A.A. Bakibaev

NEW METHOD OF SYNTHESIS OF METHYLENEBISUREAS WITH THE USE OF [BIS(TRIFLUOROACETOXY)IODO]BENZENE

A new method of synthesis of 1, 7-disubstituted methylenebisureas based on the reaction of 1-monosubstituted ureas with [bis(trifluoroacetoxy)iodo]benzene in methanol solution has been suggested in this paper.

UDC 543.25

A.S. Buinovsky, N.A. Kolpakova, S.A. Bezrukova

THE ION-SELECTIVE ELECTRODE, THE IODIDE-SELECTIVE ELECTRODE, THE METHOD OF THE DOUBLE STANDARD ADDITIONS, THE METHOD OF POTENTIOMETRIC DETERMINATION OF IODIDE-IONS

The results of investigations concerning the influence of biologically active substances (urea, protein, lactic and uric acids) on the outcome of iodide-ions determination by the potentiometric method are presented in this paper. The disturbing influence of organic substances is eliminated when 30% -ethanol solution is added to the analyzed probe. The content of iodide-ions in the probe has been estimated by the method of double standard additions. The method accuracy has been proven on the model solutions.

UDC 541.1:548:532.781

T.D. Malinovskaya, E.P. Naiden, V.I. Sachkov

PHYSICAL-CHEMICHAL REGULARITIES OF ALLOYING OF INDIUM OXIDE OBTAINED BY THE SOL-GEL METHOD

Thermodynamic assessments of nucleation in the process of gel-formation at simultaneous precipitation of indium and tin hydroxides have

been carried out. On the basis of the conducted investigations, the model has been suggested, which explains the values of the obtained concentrations of free charge carriers that are low if compared to theoretically possible ones.

UDC 546.621:541.135.7

E.V. Stepanova, D.E. Sharygin, Y.B. Shvalev
EFFECT OF PRECIPITATION CONDITIONS ON SOME PHYSICAL-CHEMICAL PROPERTIES OF ALUMINIUM HIDROXIDE GEL

The paper deals with the effect of pH precipitation and concentrations of initial reactants on the quantitative contents of cation Al^{3+} and sorption activity of aluminium hydroxide gel. It has been stated that the sample obtained at pH = 6,0, t = 20 °C at the concentration of initial substances equal to 100 g/l of sulfuric aluminum and 200 g/l of sodium carbonate has maximum sorption activity of 1,76 mg/mg of Congo colors.

UDC 541.11–541.128

G.G. Saveliev, A.I. Galanov, N.B. Danilenko, M.I. Lerner, T.A. Yurmasova, S.V. Sizov, F. Tepper, L. Kaledin
ADSORPIVE CAPACITY OF NANOSIZED ALUMINIUM OXIDE

The adsorbed capacity of the oxide-hydroxide samples, obtained by water oxidation of nanosized electroblasting aluminum has been investigated. It has been shown that samples contain nanofibers AlO(OH), and non-fibrous phases of hydroxides and oxides. The specific surface area (400 м²/gr); surface part of both micro-and mesopores (about 90 %); pH of isoionic condition (7,7), which corresponds to the positive potential on the surface; volume capacity for H^+ and OH^-, which is the same for both ions (3,18 millimole/gr), which, in its turn, suits to the occurrence of the whole surface sample in the exchange process, have been measured. Isotherms of the adsorption have been obtained and adsorption dependence on pH for a number of substances containing As^{3+}, As^{5+}, Cr^{6+}, Ni^{2+} has been determined. It has been shown that As^{3+} adsorbs in the form of molecules in the corresponding acid, As^{5+} – $H_2AsO_4^-$, chrome-chromate and biochromate – in the form of ions, nickel – Ni^{2+}. The maximum capacity of anions was about 0,12 milliequivalent/gr, and for Ni^{2+} – 0,24 milliequivalent/gr.

UDC 666.642.3

Yu.V. Selivanov, V.I. Vereshagin, A.D. Shiltsina
PRODUCING AND PROPERTIES OF POROUS BUILDING CERAMICS

Results of getting development a porous building ceramics by departure raw mixture porisation technologies and following porous structure fastening by firing are stated. The paper cites optimum compositions of mixtures, shows structure and describe properties and phase composition of porous ceramics consisting of them.

UDC 621.762

P.V. Burkov
RADIOGRAPHIC INVESTIGATION OF HARD ALLOYS STRUCTURAL CHANGES TiC-NiTi ON VARIOUS TECHNOLOGICAL STAGES

Investigation results of structural changes in raw products, half-finished products, and sintered hard alloys TiC-NiTi at various technological stages are presented in this paper. The following data on the technological influence on TiC-NiTi alloy structure and properties have been systematized: raw products structure, reduction and carbidization temperature, fracture period and fracture procedure.

UDC 665.64.442

A.V. Kravtsov, E.D. Ivanchina, S.A. Galushin, D.S. Poluboyartsev, E.N. Voropaeva, D.I. Melnik
ESTIMATION OF THE REFORMING REACTOR BLOCK EFFECTIVENESS USING MATHEMATICAL PROCESS MODEL

This paper deals with a problem of mathematical formulation of reactor block development with ways of gas-feed flow in view. Experience of applied use of intellectual computer system has been observed. Influence of the reactor block configuration on a structure of activity of the catalyst and speed of its deactivation has been investigated. It has been shown that diffusion hydrodynamic irregularities of gas-feed flow through catalyst bed result in different intensity of mass exchanged processes in peripheral and central zone of the reactor, thus reducing potential of catalyst activity and process effectiveness.

UDC 662.6: 536.6

A.S. Zavorin, Y.Ya. Rakov
NUMERICAL MODELLING OF COAL BURNING PROCESSES WITH RESPECT TO THEIR MINERAL CONTENT

The models used for numerical research of processes with the occurrence of mineral making firm fuel in technologies of power burning have been considered. The adequate physical and mathematical description is given to reveal separate stages of coal content behavior in boiler units. Increase in the developed fragments of modeling efficiency becomes possible due to elimination of database insufficiency.

UDC 629.1.039

A.I. Azovtsev, V.F. Gamanov, S.V. Luzai
PECULARITIES OF SEA-GOING ECOLOGICAL LANDROVER ON AIR-BEARING TRACKS DEVELOPMENT

A new movement principle that implies the use of air-bearing tracks has been suggested. It guarantees running qualities providing seagoing, land rover and amphibian ability under minor influence on the ground. Seagoing land rovers for complex shelf and shore development have been constructed.

UDK 539.621+674.05

A.A. Kondratyuk, V.K. Shilko
FEATURES OF SHEAR STRESS FORMING IN TRANSMISSION OF SUCCESSFUL MOVE IN CUTTING MECHANISMS OF THE BAND SAW MACHINES

Some conditions of shear stresses appearing in the transmission of flexible coupling "pulley-saw blade" for cutting mechanisms of band saw machines have been considered in this article. Analytical dependences for the analysis of shear stresses in friction couple "pulley-saw blade" and "third body" formed between them have been obtained.

UDC 621.313

R.F. Bekishev, L.N. Semenova, D.Y. Lyapunov
MANUFACTURING CAPACITOR MICROMOTORS

The use of thin-film structures possessing high dielectric properties for manufacturing capacitor micro motors has been described in this article. The design of a capacitor micro motor with a cylindrical rolling rotor has been considered. The research has demonstrated the advantages of such devices (minimal size and immunity to magnetic fields) combined with specific electric properties of active dielectrics. It allows using capacitor micro motors both to transform electric energy into mechanical one and to serve as sensors in control systems of electric drives in medicine, robotics, military and space industry.

UDC 621.312

S.I. Kachin, Y.S. Borovikov, M.A. Nechaev
PROGRAMMED AND HARDWARE CONTROLLED SYSTEM FOR MECHANICAL STATE EVALUATIONS OF THE COMMUTATOR MACHINES SLIDING CONTACT OF THE ELECTRIC DRIVES

Development issues of the programmed and hardware controlled system for mechanical state evaluations of the commutator machines sliding contact of the electric drives have been considered. It has been shown that the measuring process automation and the application of digital information processing methods allow increasing the accuracy of measurement by eliminating the systematic inaccuracy of the measuring process.

UDC 681.32

A.V. Dimaki, A.A. Svetlakov
HARDWARE-SOFTWARE GENERATOR OF RANDOM NUMBERS, INTERFACED WITH IBM PC-COMPATIBLE COMPUTER

The basic methods of random numbers generation, which are presently used, have been examined in this paper. Their advantages and disadvantages have been shown. Authors propose their own way of resolving the task of random numbers obtaining. It is the use of hardware-software generator. The use of unpredictable physical process – heat noise of *p-n*

junction of stabilitron as a source of random numbers is based on this device. Developed generator of random numbers is a peripheral device of an IBM-compatible computer, working under control of specific software. This way allows avoiding such disadvantages as predictability and periodicity of generated sequences. The use of computer allows obtaining sequences with different statistical laws, as well as it makes the study of generated random numbers characteristics easier.

UDC 553.98

G.Yu. Boyarko, V.Yu. Khatkov
NIOBIUM PRODUCTION IN RUSSIA

In Russia niobium is extracted at Lovosersk deposit (Murmansk oblast) in form of loparite concentrate and at Tatarsk deposit (Krasnoyarsk oblast) in form of pyrochlore concentrate. These concentrates are processed at Solikamsk magnesium (Perm oblast) and Kluchevsk ferroalloy (Sverdlovsk oblast) plants. As a result of vertical integration of Russian consumers of niobium into mining industry dependence on niobium product import has been overcome. It is possible to start the production at the rich Tomtor rare-earth niobium deposit (the Republic of Sakha Yakutia) and to renew extraction at Yetykinsk tantalum-niobium deposit (Chita oblast). Taking into account the natural world monopoly of Brazil producers of niobium, Russian enterprises should be oriented towards markets of Russia, Ukraine, Kazakhstan and China.

UDC 1 (075)

O.A. Nikiforov
ENTREPRENEURS IN REGIONAL ELECTION CAMPAIGN (1990–1998)

A new well-off social sub-group that was developed in the Russian society made the business people take an active part in political struggle in Russia including their immediate environment. This trend was also stimulated by the social and political crisis of mid-90s caused by groundless reforms. The article analyses the aims and results of entrepreneurs' participation in the election of legislative and executive regional and municipal bodies in Western Siberia in 1990-s. A short overview of their results and causes has been done, and some recommendations have been proposed in the article.

UDC 9(73):1(091)

G.K. Goolbin
PHILOSOPHY OF AMERICAN NEW SOCIAL HISTORY AND PROBLEMS OF ITS KNOWLEDGE

The creative ideas of the representatives of the American new social history are shown in the present work. Some features of philosophy of history and concrete historical practice are shown. The publication can be used as an educational material for the students studying world outlook and historiography issues of the modern historical science of the United States.

UDC 37.01(082)

S.P. Khatkevich
PHILOSOPHICAL UNDERSTANDING OF APPROACHES AND PRINCIPLES OF MODERN MANAGEMENT OF EDUCATION DEVELOPMENT

New approaches and principles of modern management of education development from the point of view of their philosophical understanding are considered in the article.

UDC 17

I.B. Ardashkin
"PROBLEMATISATION" AS THE BASIS OF FUNCTIONING OF KNOWLEDGE AND MODERN EPISTEMOLOGY

The modern understanding of the status of knowledge and the role of problem setting in its existence is considered in this article. It is concluded, that "problematisation" (problem setting) is a constant condition of knowledge therefore determining pluralism of the cognition practices.

UDC 008.001.14

M.N. Kokarevich
TYPOLOGY OF CONCEPTUAL MODELS IN THE PHILOSOPHY OF CULTURE

In the contextual aspect typology implies the design of ideal model of features. We may talk here about finished types, represented by separate notions and concepts. Typology, as the ordering procedure means mainly designing of unfinished types, represented by a number of features. The most significant features form some kind of invariant "atom", while insignificant ones form the "shell" of features that vary in some definite limits permitted by the "atom". For example, the significant cultural feature will be the qualitative originality of its value proposed by some conceptual models of O. Shpengler, A. Kreber, P. Sorokin and others. Dying, or the end of culture is regarded as insignificant features, because the inevitability of dying, or termination of any culture, proclaimed by O. Shpengler, does not become explicit in all cultures.

UDC 2

V.I. Legostaeva, A.V. Noskov
INTERPRETATION OF PROGRESS IN RUSSIAN PHILOSOPHY

This article is about two different interpretations of the Progress, which are peculiar to the Russian philosophy. The first interpretation is peculiar to the Russian religious philosophy, including the literature of the 19th century (L.N. Tolstoi, F.M. Dostoevsky, N.V. Gogol) with the Orthodoxy being its core. Such progress is called Transfiguration Progress and presumes a change of a person and the world, which surrounds him or her. People are changed not with the help of the material progress, but by means of worshipping (deification) of an individual becoming similar to God, uniting with Him, thus following absolute moral principles.

The other interpretation of the Progress was peculiar to the democratic tradition. For its sources it has the Enlightenment, and if to be precise – the idea of immutability of the human nature, the idea of possibility of its correlation with natural law by means of changing social institutes. Such progress is called Revolutionary Progress and it does not admit the absolute value of the human personality. Through this denial of freedom, the good itself (the purpose of the Progress) can appear as a compulsion, because of "the goal justifies the means" principle.

Two interpretations of the Progress, mentioned in the article, appear as a human choice (which is timeless in general, but always happens at the particular time) between the good and the evil, between Christ and Antichrist.

UDC 681.324:371.694

V.A. Vlasov, A.N. Shubin, S.V. Filimonov, A.A. Orlov, G.N. Kolpakov, D.N. Goldobin, S.N. Timchenko, S.N. Babushkin
COMPUTER SIMULATOR FOR OPERATIVE TECHNOLOGICAL STAFF OF URANIUM ISOTOPE DIVISION BY CENTRIFUGAL TECHNIQUE

This paper deals with some aspects of computer simulator development aimed at increasing the level of personnel training at the centrifugal production factory for Uranium isotope division during optimum condition of equipment and alert conditions.

UDC 541.1

N.P. Kurin, G.G. Andreev
ORGANISATION OF SPECIALIST TRAINING FOR TECHNOLOGY OF RARE AND RADIOACTIVE ELEMENTS IN TPU

The stages of formation and development of faculty of applied physics of Tomsk Polytechnic Institute (University), and namely the chair "Chemical technology of rare and radioactive elements" are considered in this article.

UDC 530.10+530.077

V.V. Larionov
BASIC LAWS OF PROJECT-ORIENTED TRAINING IN PHYSICS AT THE TECHNICAL UNIVERSITY

The main principles of the organization of project-oriented training in universities are offered in the article. Some teaching materials for seminars and laboratory classes in physics for engineering students have been viewed.

UDC 51(09)

V.N. Belomestnykh, L.A. Belomestnykh
PROFESSORS OF TOMSK TECHNOLOGICAL INSTITUTE – THE NEKRASOVS

This article is devoted to the biography of two professors of Tomsk Technological Institute: Vladimir Leonidovich Nekrasov, who enjoyed the reputation as one of the organizers of mathematical education and mathematical science in Siberia, and Nikolai Vissarionovich Nekrasov, an outstanding political figure of Russia.