

CONTENTS

Underground mining

- Dolzhikov P.N., Shubin A.A.** ANALYSIS OF CAUSES OF INRUSHES AND ROCK FALLS IN MINES OF EAST DONBASS 5
The basic stages of forming of failure of the water-saturated rock are rotined.
Key words: rock, inrush, mine roadway.
- Karatygin E.P., Kublanov A.V., Safrygin Yu.S.** SOME ASPECTS OF SALT BRINE EXTRACTION 9
The paper criticizes the so-called Coiled Tubing Technology and justifies the impossibility of its employment at the deposits of natural salts that are being mined by the underground dissolving method using boreholes. The prospects for mining deposits by means of vertical boreholes have been justified.
Key words: underground dissolution of salts, drillholes, salt hydromining.
- Raimzhanov B.R., Lobanov V.S., Mukhitdinov A.T., Vakhitov R.R., Kazakov B.I.** THE BASIC DIRECTIONS OF MODERNISATION OF MINES OF THE REPUBLIC UZBEKISTAN FULFILLING VEINLY DEPOSITS 13
The basic directions of development of a mineral-raw-material base of Republic Uzbekistan are presented, the question of opening and preparation veinly deposits to working off is considered. Research of effective technology of development thin abruptlyfalling veins in conditions of a transitive stage from systems with warehousing ores to systems with use to passly complexes is described. The essence of an offered variant of system of development consists in a rational combination of two most progressive directions, in development of technology of development veinly deposits, uses of monorail complexes for work in vertical developments, and self-propelled machines having an opportunity of independent movement on mountain developments.
Key words: a mineral-raw-material base, physicomechanical properties, veinly deposits, system of development with warehousing ores, a monorail complex, shtrek, rising, the self-propelled equipment, clearing dredging.
- Chernyshov A.V.** COAL MINING METHOD BASED ON USAGE OF ROCK MASS ENERGY 20
The history of development and the basic directions of development of effective ways of a coal mining on the basis of use of energy of a hills are considered.
Key words: energy of a hills, ways разрупрочнения strong coals, translation of coal in mobile with-standing.
- Shurygin S.V., Belousov A.S., Alekseev O.N.** IMPROVEMENT OF COMPLEX-STRUCTURE ORE BODY MINING METHOD IN URANIUM MINES OF "PPGKHO" JSC 22
The authors consider options of cutting down first-entry drivage job content in horizontal slicing with solidifying backfill. The method of mining wing ore bodies in mines of "PPGKhO" JSC is presented. The article describes economic potential of implementing the scheme of mining slice crossdrifts that are driven through two slices on the third slice.
Key words: mineral deposits, mining method, opening-up, first-entry drivage and stoping, mining equipment.
- Shcheptev E.N., Belyaev V.S., Eremenko A.A.** GEOMECHANICAL EVALUATION OF THE GOAF-HOSTING ROCK MASS STATE AT THE SHEREGESH DEPOSIT 26
The geomechanical evaluation of the host rock mass state in the block mining at Podruslovyyi and Novyi Sheregesh areas is given including the compressive and shear stresses in a rock mass in the vicinity of mined out areas. The

electromagnetic emission method was employed to evaluate an amplitude and a category of a rock mass state.

Key words: stress, rocks, amplitudes, category, deposit.

Open-cast

Alenichev M.V. DIRECTIONS DETERMINATION LOSSES WHEN USING PROCESSING..... **30**

The Analysed reasons of the forming the losses of the component on sedimentary deposit and is brought their categorization on geological, is blazed-technological and technical sign. Motivated making the cluster structure to models disposit and are offered analytical dependencies for determination of the losses gild with provision for contents of the clayey material in source song and factor of insufficient division.

Key words: loose fields, classification, technological losses, clay material.

Kosolapov A.I., Cherepanov E.V. TECHNOLOGICAL CAPABILITIES OF STRIPPING WORK CONTROL IN OPEN PIT MINES..... **40**

On open-cast mines having backlog strippings is possible strippings management at the expense of division of temporarily non-working board into two sites. Working sites conduct with different intensity. It allows to create necessary volume of the prepared stocks of a mineral and a working zone of an open-cast mine with design parameters.

Key words: Temporarily non-working board, strippings

Kozyrev A.A., Semenova I.E., Avetisyan I.M. THE FEATURES OF EXTENDED IN PLANE OPEN PIT SLOPES STRESS STRAIN STATE IN THE TECTONICALLY STRESSED ROCK MASS **47**

The results of rock mass stress state modeling in the vicinity of deep, extended in plane open pit using finite-element method have been represented. The areas of potential cracking in vertical ledges have been defined.

Key words: geomechanics, stress state, slope stability, mathematical modeling, surface mining

Malukhin N.G., Mukhin Yu.A., Vilms A.L., Shcherbakov Yu. K. HYDRAULIC BOREHOLE MINING OF MINERAL AMBER-BEARING CLAYS ON A BEACH SITE OF PALMNIKENSKOE DEPOSIT..... **54**

The article proposes a hydraulic borehole mining method including subsequent, inextricably connected in time operations, including hydraulic fragmentation of productive stratum by power liquid, gravity or forced hydro-transport on stope floor toward suction of a hoisting unit (air lift or hydraulic elevator), slurry preparation, suction and further hydraulic hoist of broken rock to the surface by special geotechnological holes.

Key words: mineral amber deposit, hydraulic borehole mining, slurry preparation, hydraulic hoist.

Soltabaeva S.T., Baigurin Zh.D., Rysbekov K.B. DEFINITION OF FACTOR OF OPERATION ON THE BASIS OF LAWS OF CHANGE STOCKS READY TO DREDGING..... **58**

In article definition of factor of the operation, considering complexity of deposits is offered at an estimation of stocks ready to dredging on career.

Key words: degree of preparedness, ready-to-use reserves, planning, reliability, mining extraction.

Enrichment of minerals

Azbel Yu.I., Vasilkov V.B., Dmitriev S.V., Mezenin A.O. FEATURES OF DRY MAGNETIC SEPARATION OF FINE-GRAIN OXYGENIZED HEMATITE ORE..... **60**

419

Tests of the pilot magnetic separator for dry separation fine-grained oxidised hematite ores size less than 2 mm are described. Influence of a fluidized bed on technological indicators of magnetic concentration is considered. Two technological flow-sheets of magnetic enrichment hematite ores are investigated.

Key words: magnetic separation, dry separation, hematite ore, "fluidized bed".

Alushkin I.V., Yushina T.I., Rassulov V.A., Voronkin A.V. INVESTIGATION POSSIBILITY USE RADIOMETRIC METHODS OF TECHNOGENIC DUMPS QUARTZ-FELDSPAR MINE HETOLAMBINA

66

The paper describes working principle of radiometric methods for enrichment, hear the results of earlier studies enrichment of quartz-feldspar preparation using radiometric methods not obtaining the application in production. Found and tested, at the factory, an effective method and equipment Division, provides technological and mineralogical characteristics.

Key words: Hetolambina, radiometric separation, photometric, photoluminescence, X-ray luminescent, X-ray radiometric methods.

Karmazin V.V., Izmalkov V.A., Radzhabov M.M. ANALYSIS OF SPLITTING DIFFERENT DENSITY MINERAL PARTICLES IN GRAVITY-SEGREGATION CONCENTRATE.....

73

The article discusses a new gravitational process of vibration-segregation splitting in a thin layer of different density particles. The tests data obtained using artificial mixtures in stable conditions are analyzed.

Key words: heavy concentrate reprocessing, segregation, vibrations, thin-layer segregation concentrator, artificial mixture, vibrational amplitude.

Kozlov V.A. SVOYSTVA'S GOATS OF MAGNETITOVY SUSPENSION, AS DIVIDING ENVIRONMENT FOR COAL ENRICHMENT

79

The properties of magnetitovy suspension influencing technology of enrichment of coal are considered. Ways of improvement of its properties in the course of preparation and dispensing in technological process are described.

Key words: magnetitovy suspension, suspension density, viscosity of suspension

Koshel E.A. MAGNETIC-IMPULSE TREATMENT IN GOLD-SULFIDE CONCENTRATE PROCESSING.....

86

This paper presents the results of using magnetic impulse pre-treatment for the sulfide gold-bearing concentrate processing.

Key words: magnetic impulse treatment, gold, magnitostriksiya, dislocations, extraction

Measurement, control, diagnostics

Afanasyev A.E., Efremov A.S. RELATIONSHIP BETWEEN DENSITY OF PEAT BOUND WATER AND ITS ANOMALOUS PROPERTIES.....

92

Based on the developed method of measuring density of peat bound water on drying colloidal and capillary-cellular bodies, the authors of the paper made an effort to explain its relation with anomalous properties of free and bound water by the proposed engineering model. The model reflects the change in concentration of clusters and non-associated molecules in free and bound water depending on ambient temperature. The paper considers a proposal on controlling the liquid properties through the concentration change of its structural elements. It is found that equal density of free and bound water can occur in different compositions (under different temperature), that is not identical concentration of clusters and non-associated molecules. In this context water density may be rather referred to processing than physicochemistry.

Key words: peat, bound water, anomaly, structure, technology

Vasilev S.B., Demtchenko I.I. OBJECTIVE MARK OF MINING PRODUCTION QUALITY FLUCTUATION.....	102
<i>There is a consideration of mining production mass lots, which give representative tests from quality function and it's fluctuations; the optimal mass lot was founded.</i>	
<i>Key words: Quality function, representative test.</i>	
Demin V.F., Demina T.V. ADAPTATION OF MATHEMATICAL APPARATUS TO PREDICTING EXPECTED STRESSES NEAR AN UNDERGROUND OPENING.....	111
<i>Analysis of stress-strain state of enclosing rocks depending on thickness of readily falling rock layer at different rock anchor length determined behavior of sidewall rocks in weak rock location zones.</i>	
<i>Key words: rock mass, rock anchor, reinforcement, enclosing rocks.</i>	
Demin V.F., Smagulova A.S., Demin V.V. MECHANISMS OF PRINCIPAL STRESS EFFECT ON MINE ROADWAY STABILITY DEPENDING ON MINING TECHNOLOGY PARAMETERS.....	118
<i>With metal frame support, drives in the north-south line are in more favorable conditions than drives perpendicular to this direction (roof-floor convergence is 33% lower, sidewall closure is 36% lower, design section is 30% smaller). With combined support, convergence is almost the same in parallel and perpendicular drives, with 6-7% difference, but decrease in section of parallel workings is higher by 16%. With anchoring, convergence of sidewalls is 33% lower and roof-floor convergence is 17% higher in parallel drives versus perpendicular drives.</i>	
<i>Key words: rock mass, stresses, strains, geomechanical mechanisms, stress-strain state, geological and geotechnical conditions, drivage, types of support.</i>	
Eremenko A.A., Eremenko V.A., Gakhova L.N., Eruslanov A.P., Smelik A.S., Prokhvatilov S.A. GEODYNAMIC ESTIMATION OF ROCKS IN THE COURSE OF PROTECTIVE PILLAR RECOVERY	126
<i>The geodynamic estimate of rocks enclosing a protective pillar under mining showed the possibility to improve safety of stoping with using backfill.</i>	
<i>Key words: rocks, strains, stresses, geodynamic events, technology.</i>	
Eremenko A.A., Eremenko V.A., Doev R.A., Kovrigin O.A. GEOMECHANICAL STATE OF ROCKS DURING COMPLEX ORE EXCAVATION WITH FILLING	132
<i>The research presents the geomechanical assessment of rock mass during pillar mining with and without filling. It is found that size of a goaf affects stress values and inelastic strain distribution in rocks.</i>	
<i>Key words: stresses, strain zones, mining system, ore.</i>	
Kozlov V.V. DESIGN OF THE FLEXIBLE TECHNOLOGICAL SYSTEMS OF UNDERGROUND MINING	142
<i>There have been grounded the necessity the process of formalization for taking decision of technological tasks during modeling of adaptable technological systems for coal excavation.</i>	
<i>Key words: flexible, systems, технологические.Flexible, systems, technological.</i>	
Hachay O.A. RESEARCH AND CONTROL OF ROCK MASSIVE STATE USING THEORY OF OPEN DYNAMICAL SYSTEMS.....	145
<i>It had been provided a comparison between the theoretical results of chaotization sources in nonlinear dissipative dynamical systems and results of processing by phase diagrams of detailed mine seismic catalogue data-seismic response on the explosion influence of rock burst massive. The theoretical and experimental results are identical. For further use of the mathematical results for analyze of practical data we must add our data base by detailed</i>	

deformation monitoring data and induction electromagnetic data. Then we can try to solve the problem of burst prediction using the results of mathematical theory of chaos occurring.

Key words: mine seismicity catalog, open dynamic systems, phase trajectories, rock mass.

The construction of underground constructions and mines

- Kulikova E.Yu.** THE PURPOSES, PROBLEMS AND GEOECOLOGICAL MONITORING STRUCTURE DURING THE DEVELOPMENT OF UNDERGROUND SPACE **152**

The article provides definitions, goals, objectives and structure of geo-environmental monitoring during the development of underground space.

Key words: geoecological monitoring, underground space, forecast, simulation.

- Selin K.V., Shmonin A.B.** MONITORING LINING SURFACE SHIFTS OF THE TCHELYABINSK UNDERGROUND RAILWAY STATION "TRADING CENTRE", BEING CONSTRUCTED BY TRIGONOMETRIC LEVELLING METHOD **158**

The abstract: The methods providing security of civil engineering works at the underground railway station begin constructed by underground works and disposed in broken rock mass are introduced. The basis of the presented methods is operative mining – survey monitoring of roof deformations by trigonometric levelling method with up – to – date tachometers application.

Key words: deformation monitoring, trigonometric leveling, tachometer, controlled section, relative high – altitude position, deformational mark.

Geology

- Golynskaya F.A.** METAMORPHISM INTENSITY AS THE MAIN GENETIC TRAIT OF SELF-COMBUSTION COAL **164**

Article is devoted to spontaneous combustion of coals of varying degrees of metamorphism in the case of known pools. Found that the most prone to spontaneous combustion brown coal, to a lesser extent - the stone, and anthracite is almost no spontaneous combustion, which is associated with changes in the structure of the macromolecule of coal, leading to a decrease in the rate of sorption of oxygen and therefore self-heating and spontaneous combustion of coal.

Key words: metamorphism, self-combustion of coal, critical temperature, air absorption rate, spontaneous fires, coal basins.

The automated and information systems

- Valuev A.M., Pankratov A.S.** CURRENT TECHNOLOGIES OF DATA INTEGRATION FROM INDEPENDENT DATABASES AND THE POTENTIAL OF THEIR APPLICATION IN PLANNING AND CONTROL PROBLEMS. **170**

The problem in question is the simultaneous use of independent databases for planning and control problem solution. Two forms of informational interaction are presented, the first for databases serving for departments of the same organization, the second for business partners' activities coordination under strict conditions of irrelevant information confidentiality.

Key words: control, planning, database, information system, enquiry message, confidentiality.

- Markaryan L.V.** EVOLUTIONARY SOLUTION CONCORDANCE METHOD APPLICATION IN THE INDUSTRIAL FORESIGHT PROJECTS **175**

In this article, we propose a new method for predicting expert-MES (method of evolutionary coordination of decisions). MES is presented as a way of organizing the collective work of the people to make a single coherent solutions. Showing the

<p><i>rules of interaction and networking computer program to implement the expert method. A model of the application of this method for the Foresight project in the industry.</i></p> <p><i>Key words: industry, Foresight project, the expert method, MES (method of evolutionary coordination of decisions), iteration, expert evaluation, weakly-and unstructured tasks, prediction. expert method, MES (the method of evolutionary agreed solutions), iteration, expert evaluation, and poorly-unstructured tasks, prediction.</i></p>	
<p>Nagovitsyn O.V., Lukichev S.V., Alisov A.Y. DATA OBJECT STRUCTURE OF MINEFRAME SOFTWARE</p> <p><i>The description of object structure of computer aided design and mine planning is given. The examples of the main objects of mining technology, their properties and components are presented.</i></p> <p><i>Key words: modeling, mining, database, software engineering.</i></p>	<p>179</p>
<p>Nagovitsyn O.V., Lukichev S.V. AUTOMATED ENGINEERING TOOLS OF MINEFRAME SOFTWARE.....</p> <p><i>The article deals with the automated tools of MINEFRAME software for solving problems of the mine design and planning. Tools of the wireframe and block modeling, blast design, determining of open-pit limits, planning of open pit and underground mining, driving of underground workings are described/</i></p> <p><i>Key words: mining, CAD, computer-aided planning, database.</i></p>	<p>184</p>
<p>Nazarenko M.V., Khomenko S.A. EXPERIENCE OF K-MINE GEOINFORMATION SYSTEM USE IN INTEGRATED MINE PLANNING.....</p> <p><i>The article considers aspects of using geoinformation systems in integrated mine planning and adduces examples of K-Mine GIS application at various stages of open pit mine planning.</i></p> <p><i>Key words: minerals, computer hardware, topographical map, geoinformation system.</i></p>	<p>193</p>
<p>Mining machinery, equipment and transport</p>	
<p>SVENTA AG THE BEST DRIVE – PROGRESS STEPS</p>	<p>205</p>
<p>Boguslavsky E.I., Smirnova N.N., Egorov S.V. CALCULATION OF THERMAL AND PHYSICAL PARAMETERS FOR A SURFACE GEOTHERMAL UNIT OPERATION IN THE CONDITIONS OF ACTIVE HEAT EXCHANGE WITH SURROUNDING ROCKS.....</p> <p><i>Mathematical model of the nearsurface geothermal facility is discussed. The character of a heat transfer is supposed to be conductive one. The total heat accumulated by the heatcarrier during the finite time interval is calculated. On the basis of this calculation some thermophysical parameters of the facility are discussed.</i></p> <p><i>Key words: nearsurface geothermal systems, conductive heat transfer, heatcarrier waste, heat transfer power, heat transfer power per depth unit.</i></p>	<p>206</p>
<p>Kharionovsky A.A., Gusev N.N. TECHNICAL AND TECHNOLOGICAL EFFECTIVIZATION OF COAL MINE WATER PURIFICATION BY ANTICORROSION PROTECTION OF STRUCTURES AND EQUIPMENT OF SEWAGE DISPOSAL PLANTS</p> <p><i>The article reviews domestic and foreign practice of making structures and equipment of waterworks resistive to corrosion.</i></p> <p><i>Key words: water resources, mining impact, underground water, sewage disposal plants, corrosion.</i></p>	<p>211</p>
<p>Gvozdev A.A., Filkov M.N., Dunaev A.V., Fedotov A.V. RESEARCHES OF SOME NEW TRIBO PREPARATIONS</p> <p><i>Researches of 12 tribo preparations by the car of friction SMT-1 are resulted.</i></p> <p><i>Key words: tribo, preparations, friction factor, mineral.</i></p>	<p>215</p>

- Tret'yak A.Ya., Onofrienko S.A., Burda M.L.** ENERGYTECHNOLOGICAL COMPLEX FOR PRODUCTION OF ELECTRIC, THERMAL ENERGY, MOTOR FUELS AND COMPOUNDS FROM COAL **223**
Technology of underground gasification of coals, allowing to get the different types of energy, is offered, namely electric, thermal, motor fuels and compounds from coal. This energytechnological complex allows to realize higher expounded - by building in the field terms experimentally experimental ground.
Key words: coal, energytechnological complex, fuel, energy, oxidant, underground gasification, compound, steam-turbine, compressor, heat-pump, synthesis-gas.
- Shishkarev M.P.** WORKING CAPACITY RESTORATION SAFETY FRICTIONAL CLUTCHES AFTER OPERATION **232**
Results of research of influence of various types of safety frictional clutches on restoration of their functional capacities after the termination of operation of overloads are reduced. It is displayed that a condition of automatic restoration of working capacity of safety frictional clutches is equality each other magnitudes of a friction torque of sliding of a clutch and the nominal rotating moment of the car.
Key words. A safety frictional clutch, working capacity, a coefficient of friction, an overload, the rotating moment, factor of a store of ganging.
- Blasting operations**
- Volchenko G.N.** EXPERIMENTAL-ANALYTICAL RESEARCH OF HIGH-STRESS ROCK BLASTING METHODS USING RESOURCE-SAVING EXOGENETIC PROCESSES IN THE BROKEN ROCK MASS **239**
The author modeled short-delay blasting pattern with formation of curved free surfaces. It was found that at all stages of blasting, fields of tension originate in rock mass and contribute to reduction of energy consumption by failure process.
Key words: failure modeling, short-delay blasting pattern, stress redistribution.
- Koltishev V.N.** STUDY ON SOURCES OF EXPLOSIONS IN THE LOCATION OF FORMATION OF ZONES WITH DIFFERENT DYNAMIC EFFECTS SEISMIC ENERGY **244**
The process of distribution of aftershocks after a massive explosion and the formation of zones of concentration of dynamic phenomena in rock mass with various power class.
Key words: explosion, shock, seismic energy, mass, dynamic phenomenon.
- Economy, management and planning**
- Basilaya A.G.** WORKING OUT OF ECONOMIC-MATHEMATICAL MODEL OF THE ESTIMATION OF VARIANTS OF CREATION OF METRO STATION BY OPEN WAY **247**
Necessity of application of imitating modeling for the decision of problems by a complex estimation of possible variants of development of the underground is proved. The maintenance of criterion function and restrictions of economic-mathematical model, an estimation of variants of creation of stations of underground is resulted in the open way.
Key words: economic-mathematical model, creation of metro stations by open way.
- Kochura I.V.** ASSESSMENT OF INFLUENCE OF ECONOMIC RISKS ON PRIME PERFORMANCE INDEXES OF COAL MINES IN DONBASS **251**
Stages of management of economic risk have been adapted to the coal mines. As a result of the qualitative analysis of economic risks, the risky situations have been identified. The neural networks model of estimation and forecasting of factors of economic risk on the basic results of the coal mines operation has been developed. The model will allow to reduce uncertainty of influence of internal and external factors.

Key words: economic risk, coal mines, assessment, forecasting, neuron network model

Latypov D.V. INTRODUCTION IN MANAGEMENT PRACTICE BY ENTERPRISES OF STONEPROCESSING PRODUCTION OF BUSINESS CASES AND METHODS **255**

Operating efficiency of stone working plants pretty much depends on economic management methods, models and technologies, as well as on the associated economic management system organization. Implementation of the economic management principles dictates updating management technologies (data acquisition and processing procedure, decision-making, account and analysis of execution of the decisions), using innovative techniques (advanced computer technologies, databases etc.) and, foremost, changing mentality and qualifications of management personnel.

Key words: updating of management technologies, prime constituents (factors) of economic mechanism, short cycle problems, long cycle problems.

Maslov M.V., Sekistova N.A. TO A QUESTION OF PERFECTION OF PAYMENTS FOR BOWELS FOR THE COAL-MINING ENTERPRISES **259**

The regulation scheme bowels use the coal industry is considered. Ecological factors are defined influencing size of the tax to mineral extraction. The system of payments and taxes for bowels use is offered.

Key words: coal industry, subsoil use, ecological factors, mineral exploitation.

Trushnikov V.E. FEASIBILITY STUDY OF ECONOMIC INDICATORS RECYCLING INDUSTRIAL WASTEMAGNESIUM-PHOSPHATE RAW IN LAND MANAGEMENT **264**

Proposed environmental and economic assessment of the use of industrial waste magnesium and phosphate raw materials with the stability of prices and production in market conditions and the nature of development when the economic environment for savings and investment.

Key words: man-made resources, phosphates, fertilizers, environment, economic background.

Chaadaev A.S., Zyryanov I.V., Pitenko E.V. INTRODUCTION EXPERIENCE AND DEVELOPMENT PROSPECTS OF QUALITY MANAGEMENT SYSTEM IN THE YAKUTNIPROALMAZ INSTITUTE..... **270**

On the basis of the studied experience of the domestic enterprises various ways of realisation of the process approach, the reason of low efficiency from introduction QMS are presented and ways of the decision of a problem at the expense of correct distribution responsibility and powers are offered. The basic development cycles, activity on documenting and structure of management of quality management system at institute are described.

Key words: quality management system, measures of efficiency, efficiency criteria, quality policy, process-based approach, monitoring, quality day, audit, certification.

Ecology

Batugina I.M., Yu Lijiang, Batugin A.S. IMPACT OF MINING ON GEOECOLOGICAL SITUATION AND INTEGRATED CONTROL IN CASE MINE HUAFENG IN CHINA **281**

In this article is viewed a geoecological situation which takes place in the mine Huafeng, one of the deepest and the most dangerous mines in China in terms of rock bursts. It is shown, that settling of the earth's surface, the formation of deep cracks, mining and mining-technical attacks, geological structure and geodynamic condition are closely related, which opens the way to the integrated management of the protection of the environment.

Key words: geoecology, crack, subsidence, environment, geodynamic zoning.

Galanina T.V., Baumgarten M.I. ECOLOGICAL CONSEQUENCES OF TECHNOGENIC ACTION AT CARRYING OUT OF MOUNTAIN OPERATIONS.....	288
<i>Ecological consequences of technogenic action of the mountain enterprises on a surrounding medium are viewed. Classification of these consequences is given at carrying out of mountain operations.</i>	
<i>Key words: ecological consequences, technogenic action, surrounding medium.</i>	
Gontar M.A. STATUS ANALYSIS AND DEVELOPMENT TRENDS OF EUROCEMENT GROUP	293
<i>The crisis effects have intensified the competition between the russian enterprises and have brought the prices down to the level of survival of the cement industry. However, EUROCEMENT Group has managed to act more effectively and, despite the negative influences, the Holding's plants have been able to preserve their production capacity, hard-working staff and stable quality of released products.</i>	
<i>Key words: EUROCEMENT group, cement, cement industry, cement production branch, quality, concrete, plant, technical upgrading.</i>	
Konorev M.M., Laptev Yu.V., Titov R.S., Shemenev V.G. HANDLING ECOLOGICAL PROBLEMS IN MINING MAGNESIUM ORE (MAGNESITE AND ASBESTOS)	300
<i>Results of researches to the decision of environmental problems Are presented at working out of deposits of magnesian ores (magnesite and asbestos), the estimation of losses магнезильного raw materials and formation of a waste of enrichment is presented, and also the technological scheme of processing not the balance magnesites ores is considered.</i>	
<i>Key words: magnesite, hrizotil-asbestos, manufacture without waste, enrichment, losses, chemical reaction, dolomite, not balance ores.</i>	
Lipin J.I. GEOMECHANIC ASPECTS OF PROVIDING SAFETY MINING LARGE BLIND DEPOSITS WITH OVERLYING ROCKS CAVING	307
<i>Complex geomechanic investigations, that is, measuring rock mass natural stress; seismic methods of determination rock mass mechanical properties and its structure; revealing the regularities of changing secondary stress field, mining blind ore deposits, make it possible to tackle problems of overlying rocks natural controlled self-caving on a well-founded basis. The given method's application allowed conducting successful deposit stripping with the chamber having 110x100 clearance dimensions.</i>	
<i>Key words: self-caving of overlying rocks, rock mass structure, seismic methods, stressed state.</i>	
Lukyanova N.V., Myaskov A.V. EXPLANATION OF NECESSITY OF TAKING INTO ACCOUNT LANDSCAPE CHARACTERISTICS BY NATURAL ECOSYSTEMS REHABILITATION IN MINING REGIONS	312
<i>Mining enterprises significantly disturb natural ecosystems. Nature-conservative measures direct towards revegetation only, without taking into account necessity of natural ecosystem restoration. There is suggested to carry out measures for natural ecosystem functions restoration and habitat creation along with land reclamation in this article.</i>	
<i>Key words: biodiversity, natural ecosystems, rehabilitation, ecological restoration, habitat creation.</i>	
Pashkevich M.A., Gvozdetskaya M.V. ECOLOGICAL HAZARD MONITORING METHODOLOGY FOR DRILLING RETURNS	317
<i>The technique of monitoring of a condition of waste products of drilling is developed by a complex of modern analytical methods: x-ray spectrometry method of the analysis, powder x-ray diffractometry, optical and electronic microscopy.</i>	

Key words: the waste products of drilling, the ecological danger, the modern analytical methods.

- Shibunya V.S., Sarukhanova L.E.** USE OF ACOUSTIC OSCILLATIONS IN THE WATER DISINFECTION BY CHLORINATION..... **322**
A study conducted for the disinfection of water during its processing of chlorination and acoustic vibra.

Key words: escherichia coli, total microbe number, acoustic fluctuations, chlorine gactions.

Mathematical modelling

- Sansiev V.G.** MODELING OF THE PROCESS TO CLASSIFICATIONS AND DEHYDRATIONS COAL SLIME ON SCREEN..... **325**
It Is Offered mathematical model of the process to classifications coal slime on screen , as process of the current slime on permeable surfaces. Solution of the equations Navier-Stokes with obtained in view of change of viscosity of suspension along a direction of driving.

Key words: slurry coal, classification, dewatering, slotted screen, velocity, pressure, Navier–Stokes equation, boundary conditions, free surface, extraction, adversity, bubble regime.

- Tsvetkov A.B., Frjanov V.N.** NUMERICAL MODELING OF INTERGROWTH ORIGINATED ON CONTACT OF STRATUMS OF FRACTURE BY MEANS OF THE VARIATION OF FUNCTION PARAMETERS OF MATING..... **336**

In paper in a seam roof outcomes of research of process of intergrowth of the originated fracture are presented to neighborhoods of a development by means of the complex of job oriented programs built on the concept of synthesis of a mathematical model of a piecewise-homogeneous rock massif from units.

Key words: Mathematical model, rock massif, structural block, contact, fracture, coal stratum, deads, adjacent strata, geologic fault, finite difference method, theory of elasticity selvage problem, synthesis, gravitation.

- Tsvetkov A.B., Frjanov V.N.** NUMERICAL MODELLING OF INFLUENCE ON THE DEVELOPMENT OF THE SITE OF THE GEOLOGIC FAULT..... **342**

In paper outcomes of operation of a complex of the job oriented programs built on the concept of synthesis of a mathematical model of piecewise-homogeneous hills from units are presented, in correspondence to each of which the boundary value problem of theory of elasticity is put. By means of mathematical modeling research of agency on a development of a site of a geologic fracture is conducted.

Key words: Mathematical model, rock massif, structural block, coal stratum, deads, adjacent strata, geologic fault, finite difference method, theory of elasticity selvage problem, synthesis, gravitation.

Oil and gas

- Antoniadi D.G., Savenok O.V., Arutyunyan A.S.** THE ANALYSIS DIFFERENT CATEGORIZATION OIL LAYER ON PRODUCTIVITY. THE SIGNS OF HARD EXTRACTION OIL STOCKS..... **348**

Categorization oil layer is considered In article on average factor of productivity of the bore holes, providing eight classes, as from hyper productive before layer with ultra low by productivity. Considered signs of hard extraction oil stocks.

Key words: categorization oil layer, factor to productivity, hard extraction oil stocks, lateral heterogeneity of reservoir, stratified heterogeneity of reservoir, initial oil saturation of layers, high viscous oil.

Works of young scientists

- Agafonov V.V.** FUZZY COGNITIVE MODEL OF A COAL MINE..... **353**
The methods of generation and selection of alternatives in the problem of synthesis of the technological scheme of a coal mine, which is based on the construction of fuzzy cognitive maps and processing of the results of its static and dynamic analysis. Considered architecture and functional characteristics of a multi-user system of support of decision-making, implementing this method.
Key words: fuzzy cognitive map, system performance, alternative
- Agafonov V.V.** A NEW FUZZY COGNITIVE MODELING APPROACH TO SYNTHESIZING TECHNOLOGICAL SYSTEMS IN COAL MINES **362**
The article describes the cognitive approach to the simulation and synthesis of technological the circuit of the mine. As such a model is cognitive map, representing a multitude of describing its concepts (factors), which are given a set of cause-and-effect relationships, and relationships.
Key words: fuzzy cognitive map, cognitive matrix concept.
- Aleksandrov A.N.** DEVELOPMENT OF SPECIFIC PROCESS FLOWSHEETS TO MINE SEPARATE ORE LOCI AT THE IRON ORE DEPOSIT IN THE GORNAYA SHORIYA..... **371**
The flowsheets for the long-term mining of the Tashtagol deposit are developed. The additional ore reserves are explored at new areas of the mine filed and the mineral ore grade is evaluated. A number of mining flowsheets are elaborated and proposed with the provision for 1.5-2.0 times increase in the mine performance.
Key words: deposit, ore, flowsheet, shaft.
- Bazikina L.R.** TRANSFORMATION OF RASTER IMAGES OF MINING GRAPHIC DOCUMENTATION..... **376**
Theoretical analysis of different types of transformation of raster images is given. Distinctive characteristics of each types of raster images transformation are revealed. Analysis of accuracy of basic types of raster images transformation in specialized graphics software is given. Conclusions about application domain of basic types of raster images transformation are given.
Key words: raster images distortions, types of transformations, matrixes of distortions.
- Korchevenkov S.A.** FINE PLATINUM RECOVERY FROM PLACER SANDS BY GRAVITY PROCESSES **380**
Year after year geological and mining conditions of placer exploitation worsen; mining operations involve low-grade sands containing fine gold and platinum group metals (PGM). This article discusses research data on applicability of screw separation and jigging as the basic process of PGM fines concentration from commercial size grade of the Kondyor placer.
Key words: placers, platinum group metals, screw separation, jigging, Kondyor deposit.
- Nesterenko E.A.** OPTIMIZATION OF LASER SCANNING SURVEY PROCESS AT THE COST OF SCAN-POSITIONS NUMBER MINIMISATION **383**
The article analyzes optimization of laser scanning process by minimizing scanning positions. The amount of scanning stations is to be enough to seize the entire scanned subject but minimum in order to shorten the scanning time and reduce the subject measurement information. The implemented study yielded relationships between the scanned subject dimensions, the scan and subject spacing and the number of the scanning stations.
Key words: scanning positions, scanning stations, laser scanner.

Oblicov A.Yu. SOME ASPECTS OF UTILIZATION OF HIGH-CLAY ENRICHMENT WASTE..... **390**

In given article problem questions, which decision allows eliminating technical complexities connected with utilization of enrichment waste containing clay minerals, are stated on an example of Lomonosov diamond deposit, Archangelsk region, Russia. At present time the work at Lomonosov deposit is complicated by a number of reasons one of which is a necessity of utilization of great volume of enrichment tailings.

Key words: utilization, clay, enrichment waste, tailings.

Osipov Yu.V., Koshelev A.E. BUILDING PASSPORTS STRENGTH OF ROCK SALT WITH A GRAPHICAL ENVIRONMENT COREL DRAW **393**

The paper used software package Corel Draw, based on vector graphics, determined strength parameters of rock salt, built passport strength and determined grip and angle of internal friction.

Key words: rock salt, passport strength, main stresses.

Patutin A.V. DETERMINATION OF INITIAL CONDITIONS FOR ROCK MASS MODELING **397**

The paper presents the main features of FLAC 6.0 software designed for geomechanical problems solving. Horizontal stress in each layer was calculated to determine initial conditions for rock mass modeling.

Key words: modeling, coal measure rocks, initial conditions.

Cheremhina A.P. STUDY OF CONSOLIDATION ALLUVIAL ROCKS AT THE STAGE OF CONSERVATION HYDRAULIC FILL "BEKOVSKY" IN KUZBASS **402**

Results of natural observations, feature of change of pore pressure and deformations in the sloping side a hydraulic fill «Bekovsky», characterizing conditions of consolidation precoat rock period of preservation and stage of exploitation the installations. These changes are physical and mechanical properties of alluvial clay soil for a ten years. Key words: hydraulic fill, interstitial pressure, consolidation.

Cheremhina A.P. ENIGINEERING GEOLOGICAL RESEARCH FOR THE PURPOSE OF PROOF OF SAFE CONDITIONS OF REMOVING OF OVERBURDEN HYDRAULIC FILLS FROM LONG-TERM STORAGE **406**

Features of engineering geological conditions of hydraulic fills in Kuzbass with durable period of exploitation and mothballing, necessary to consider during the working out the program of investigations for justification of project of removing the constructions from long-term storage are observed. The results of engineering geological research of Krasnobrodskiy open pit on river Pryamoi Uskat in Kuzbass are represented.

Key words: hydraulic fill, removing from storage, engineering geological research.

Preprints

Sukhomlinov D.V., Kuskov V.B., Kuskova Y.V. MANUFACTURING TECHNOLOGIES OF FUEL BRIQUETS WITH LOW IGNITION TEMPERATURE FROM COAL **151**

Two technologies are proposed for recycling of black coal siftings and slimes from the Pechora coal basin. Moreover, for briquetting of fine slurries the foreground technology is based on extrusion. The technology, based on the use of stamp press, utilizes coal siftings as a raw material.

Key words: briquetting, binder, briquette strength, coal slime, fuel briquette coal riddling, extrusion, pressing.

- Zatulovskiy K.A., Firsov A.Yu.** MODELING AND MANAGEMENT OF CONDENSATION PROCESS **169**
The present paper is devoted to development of CFD thickener model which describes behavior of flocculated suspension in all volume of the unit. The present paper is devoted to development of thickener control system via GE Proficy Troubleshooter software. Neuro-fuzzy model which automatically generates in the GE Proficy Troubleshooter based on historian process data is used for the control.
Key words: thickener, CFD modelling, hindering settling factor, compressive yields stress, control system, GE Proficy Troubleshooter.
- Krivitskiy V.O.** EFFECTIVENESS OF RUSSIAN ECONOMIC SUPPORT TO SOUTH OSSETIA..... **231**
After the recognition of the independence of South Ossetia, Russia has a major economic support to the republic, directing substantial financial resources for economic recovery and infrastructure. The purpose of this article is to analyze the effectiveness of economic support Russian republic of South Ossetia in 2008-2012.
Key words: Economic cooperation, foreign economic activity, economic support, development assistance.
- Kuzmin I.V.** TECHNOLOGICAL EVALUATION OF ROLLER-PRESS APPLICATION IN COMMINUTION FLOW SHEETS OF OXIDIZED FERRUGINOUS QUARTZITES **263**
Crushability and grindability of oxidized iron ore sample were studied using standard crushers and roller-press LABWAL 250X100 produced by Thyssen Krupp Polysius. Noted data illustrate that during grinding of products from crushing step, roller-press shows absolute value decreasing of useful energy specific cost comprises of 3,9 kWh/t with feed dimension of ball mill -5+0 mm and 3,3 kWh/t with feed dimension of ball mill -10+0 mm (80% -6 mm, open-cycle processing of roller-press). Crushed products specific surface of oxidized ferruginous ore has been determined after treatment by crusher of standard construction and roller press of laboratory scale
Key words: oxidized ferruginous quartzite, roller-press, specific surface.
- Tseytlin E.M.** OPTIMIZATION OF THE NEGATIVE IMPACT OF MINING PRODUCTION WITH THE HELP OF INTEGRAL CRITERIA OF ASSESSMENT OF ENVIRONMENTAL HAZARD **306**
In the current context of limited material resources is an objective and sufficiently rapid assessment environmental hazard of a technological or organizational solutions, the enterprise as a whole, is an absolute must. This article describes a new approach to the evaluation of environmental hazards of mining, which allows to optimize its negative impact on the environment.
Key words: ecological hazard, ecological safety, negative impact on the environment, assessment of environmental hazard, integral criterion.
- Savenok O.V.** THE ANALYSIS BASE RESEARCH AND SCIENTIFICALLY-METHODICAL DECISIONS APPLICABLE IN COMPLICATED CONDITION OF THE PRODUCTION. SYSTEM DEVELOPMENT TO CATEGORIZATIONS OF THE METHODS AND TECHNOLOGY **361**
In article is organized analysis base research and scientifically-methodical decisions applicable in complicated condition of the production. It is shown that physicochemical methods present itself efficient instrument of increasing oil recovery when hard extraction oil stocks production, as well as at construction of the bore holes in complex is blurred-geological condition and at exploitation of the bore holes in complicated condition. Introduces that potential physicochemical methods far from exhausted, but opposite, has a good outlook for expansion and qualitative renovation. The main trend of the development physicochemical methods consists in more deep study of the application do-

main – a composition and characteristic to oils, features argillaceous deposits and etc., and in creation corresponding to methods and technology with use physicochemical approach in combination with the other methods.

Key words: complicated conditions of the production, methods of the increase oil recovery, hard extraction oil stocks, oil recovery factor, categorization physico-chemical methods, methods of the address influence, complex and scientifically-methodical decisions.

Хелай

396

Deposited manuscripts

Annenkov S.A. THE STATE COMMERCIAL ENTERPRISE AS THE MAIN SUBJECT OF THE ECONOMIC RELATIONS IN THE MINERAL AND RAW COMPLEX OF RUSSIA	110
Voloshinovskiy K.I. MAINTENANCE FOR BOOK "INTRODUCTION TO CURRENTS & ELECTRONIC MODELS"	131
Voloshinovskiy K.I. MAINTENANCE FOR BOOK "SCHEMES AFTERWARDS CURRENTS & RADIO"	141

