AN ANALYSIS OF INFLUENCE OF VARIOUS FACTORS ON CHARACTERISTICS OF METHANE EXPLOSION HAZARDS

V.A. Bunev, A.A. Korzhavin, P.K. Senachin

There is carried out an analysis of influences of initial temperature, pressure and concentrations of methane and various additives on characteristics of methane explosion hazard on a base of experimental data and mathematical simulation obtained by authors and literature data.

Keywords: *methane, laminar burning velocity, flammability limits.*

EFFECT OF THE TEMPERATURE GRADIENT ON MOISTURE TRANSFER IN POROUS MATERIALS

M.I. Nizovtsev, A.N. Sterlyagov, V.I. Terekhov

In work results of experimental researches of moisture transfer in porous materials are submitted at various thermal and humidity conditions. The experiments were provided with a traditional method of research of "a cutting column" and the contactless gamma-method. Influence of a temperature gradient in porous a material on intensity of its humidifying is determined.

Keywords: *heat and mass exchange, porous materials, temperature gradient.*

PRE-PROJECT MAKING PARAMETERS IES CAPACITY OF 4800 MW COAL-SHIWEI OVOOSKOGO FIELD OF MONGOLIA

D.V. Krasinski, V.V. Salomatov, H. Enhzhargal

Completed the design rationale parameters projected capacity of 4800 MW of IES on brown coal-Shiwei Ovooskogo deposits of Mongolia. In the quality of the main power equipment for IES proposed 800 MW power with the use of long-term steam generator with vortex combustion of pulverized coal technology. Are presented the main technical and economic indices of the project. As a result of 3-D numerical simulation of aerodynamics and combustion processes in the proposed steam generator with a vortex furnace were obtained by detailed field distributions of velocity, temperature, concentration, heat fluxes, as well as its main thermal and environmental-cal characteristics.

Keywords: *coal, the combustion of solid fuel, unit IES, steam, whirlpool furnace, numerical modeling.*

MATHEMATICAL MODELING OF MICROWAVE HEATING COAL POLUMASSIVA

Vl.V. Salomatov, S.E. Pashchenko,
S.O. Sladkov, Vas.V. Salomatov

Solved analytically interdependent problems in electrodynamics and heat in the coal array luogranichennom applied to microwave heating.

Keywords: *coal, microwave heating, electrodynamics, heat transfer modeling.*

DOSAGE STEAM-AIR AND STEAM-OXYGEN BLOWING IN A DENSE LAYER OF GAS GENERATORS

R.Sh. Zagrutdinov, D.G. Malykhin, P.K. Senachin

The results of studies of gas generators dense layer of pressure type Lurgi at work on the vapor, and steam-oxygen mixed blowing. Results of the study mode of gasification for energy gas with oxygen enriched blast show that the optimum concentration of oxygen is in the range of 63 68%. Stable operation of the gas generators in this mode is evidence of a possible long-term trouble-free operation.

Keywords: *regimes of gasification, gas generators dense layer, steam-air and steam-oxygen blowing, the production of energy gas.*

GREEN ENERGY QUANTITY ESTIMATION FROM BIOMASS COMBUSTION

V.A. Golubev, E.M. Puzyrev, M.E. Puzyrev

Involvement aspects of plant refuse into the fuel balance of enterprises and "green" energy quantity accounting at the co-combustion of biomass and energy-producing fuel, moisture effect and other factors were examined. Biomass quantity estimation is the most important, since it is associated with the purchase. It proposed to determine of "green" energy quantity through the β parameter, on the basis of gas analysis of flue gases.

Keywords: *green energy, biomass, combustion, co-combustion, gas analysis.*

ECOLOGICALLY SAFE TECHNOLOGIES RECEPTIONS OF COAL FUEL

V.I. Kotelnikov, V.J. Fedjanin,
A.V. Barinov, E.A. Ryazanova

Results of researches and tests of small-sized installations for reception of ecologically safe fuel from fossil coal are resulted. Systems of supply by fuel of objects of small power on the basis of selection of optimum weight parities of initial raw materials and coal processing in thermally loaded layer are offered.

Key words: *thermally loaded layer, pyrolysis of fossil coals, maintenance of objects of small power with ecologically pure fuel.*

STUDY OF AGRICULTURAL WASTE BURNING

E.V. Krasutsky, I.D. Fursov, E.B. Zhukov,
I.S. Yakimova, E.M. Puzyrev

The article describes the conditions of use of agricultural wastes as fuel-tion of disposing of such waste. Shows the results of experiments on the incineration of non-traditional fuels, the development of boiler rooms units with swirl combustion chamber and the results of their numerical simulations. Derived coefficients for further calculations.

Keywords: *alternative fuel, waste incineration technology vortex of, numerical simulation, then burning-fuel.*

STUDY TECHNOLOGICAL REGIME AND THE ESTABLISHMENT OF THE AUTOMATIC CONTROL OF BOILERS WITH FLUIDIZED BED FORCED FIREBOX, OPERATING IN THE GASIFICATION

A.M. Sidorov, F.W. Shcherbakov,
A.M. Zavyalov, P.K. Senachin

The paper deals with the problem and implementation experience in commercial and communal-national high-energy organization schemes furnace process in forced low-temperature boiling schem layer with a furnace, operating in the gasification. Examined and described the main principles of creating automatic control boiler. This technology provides a stable first-renie in volume layer and nadsloevom space. It allows you to burn almost any fuel and first-ryuchih waste at relatively low temperatures (800-1000 °C) without sintering layer.

Keywords: *boiler, furnace boil seethe layer, forced fluidized bed, regimes press with partial gasification layer.*

THE STUDY OF THE OPTIMAL DESIGN OF THE BURNER TO ENSURE THE SUSTAINABILITY OF THE AERODYNAMIC STRUCTURE OF THE FLOW TO THE BURNER AND THE INTENSIFICATION OF THE PROCESSES OF MIXING IN THE COMBUSTION ZONE

A.P. Burdukov, M.J. Chernetskiy,
A.A. Dekterev, N.S. Chernetskaya

In this paper the burner device, for use in technology without fuel oil boiler ignition-based mehanoakti-virovannogo mikropomola coal. Performed research on the selection of the design of the burner with respect to PK-40 boiler steam capacity of 320 t / h. With the use of mathematical modeling rd substantiated design 2-stage burner that ensure a high level of temperature pylevoz-air mixture at the outlet of the second stage of the burner.

Keywords: *coal, burner, mechanical activation, microgrinding, modeling.*

STATEMENT MESOSCOPIC VELOCITY BOUNDARY CONDITIONS SLIP ON THE BOUNDARY

M.A. Makarova, I.G. Pyshnogray, G.V. Pyshnogray,
Y.A. Altukhov, I.E. Golovicheva, J.B. Tregubova,
I.V. Tretyakov, G.L. Afonin, H.N.A. Al Joda

The ways to build a method of continuous simulation of wild of the medium in the channels with a given microgeometry surface irregularities of the walls, turn-ing a mesoscopic description of the boundary conditions for the velocity and pressure based on the method of splitting into physical processes itself.

Keywords: *the mesoscopic approach, numerical methods, mechanics of Continuous Media, parallel computing, micro-geometry, roughness.*

THE EXPERIMENTAL STAND AND SOFTWARE PACKAGE OF OPTICAL CONTROL OF FUEL DISPERSION QUALITY WITH HIGH-SPEED VIDEO FILMING USE

A.V. Eskov, A.V. Maetsky

The tool of optical control of fuel dispersion quality by a diesel atomizer in atmospheric conditions is shown. A hardware and program component of control device are described. The experimental results with rape and diesel fuel atomization are presented.

Keywords*: quality of fuel dispersion, optical heterogeneity, optical method, image processing.*

THE CORROSION RESISTANCE OF «TI - TA» LAYERS, FORMED BY NON-VACUUM ELECTRON BEAM CLADDING OF POWDERED MIXTURE ON THE PLATES OF COMMERCIALLY PURE TITANIUM

T.V. Zhuravina, I.A. Bataev, M.G. Golkovski,
A.A. Ruktuev, V.V. Samoilenko

The paper evaluated the corrosion resistance in boiling hydrochloric acid coating system "titanium-tantalum" obtained by non-vacuum electron beam cladding. It was shown that alloying of titanium 3.9% (by weight) tantalum leads to the corrosion damage mainly to the boundaries of β-phase. Increasing of tantalum concentration improves the corrosion resistance of coatings "titanium-tantalum" system.

Keywords: *corrosion resistance, non-vacuum electron beam cladding, titanium, tantalum.*

X-RAY DIFFRACTION ANALYSIS OF THE TITANIUM SURFACE LAYERS ALLOYING BY TANTALUM

M.G. Golkovski, S.V. Veselov, I.A. Bataev,
A.A. Bataev, T.V. Zhuravina, A.A. Ruktuev

Alloys produced by non-vacuum electron beam cladding tantalum on the specimens of commercially pure titanium was investigated by X-ray analysis. It was found that alloys with 3,9-22,4 % Ta (wt) having the hcp and bcc lattices contains α-and β-phase, respectively. The formation of β-phase in low alloying materials is explained by chemical heterogeneity of material, which is a consequence of the high-speed heating and rapid cooling of materials. The parameters of α-titanium crystal lattice with 22,4 % (by weight) of tantalum: a=0,295 nm, c=0,470 nm was determined. The parameter of a in β-titanium lattice is 0,328 nm.

Keywords: *X-Ray diffraction analysis, non-vacuum electron beam cladding, α-and β-phase titanium, tantalum.*

THE ANALYSIS OF THE THERMAL EFFECTS, OCCURRING UNDER HEATING TO A TEMPERATURE OF LIQUID-PHASE SINTERING IN TUNGSTEN-COBALT POWDER MIXTURE

D. Terentyev, V. Burov,
A. Razumakov, E. Golovin

The results obtained in the study of the thermal effects occurring in heated up to 1200 °C tungsten-cobalt powder mixtures «94 % WC – 6 % Co», «85 % WC – 15 % Co» and the composition «94 % WC; 6 % Co – 85 % WC; 15 % Co» by thermogravimetric analysis are presented.

***Keywords**: tungsten-cobalt hardmetal, powder metallurgy, gradient microstructure.*

THE STUDY OF PHYSICAL AND CHEMICAL INTERACTION PROCEEDS IN TUNGSTEN-COBALT POWDER MIXTURE DURING LIQUID-PHASE SINTERING

A. Tyurin, S. Veselov,
A. Losinskaya, P. Popelyuh

X-ray diffraction the change in the phase composition of powder mixtures «94 % WC – 6 % Co» and «85 % WC – 15 % Co» when heated from 20 to 1200 °C of studied.

***Keywords:** tungsten-cobalt hardmetal, powder metallurgy, gradient microstructure.*

EVALUATION PROCESS MERGERS AND ACQUISITIONS OF INDUSTRIAL ENTERPRISES

M.Y. Voronina, Z.P. Savosina

In this paper, a merger seen as an effective form of state management of individual enterprises and the entire company. The efficacy of mergers and acquisitions by different methodological approaches.

***Keywords:** mergers and acquisitions, efficiency.*

STUDY OF THE ENGINE TO MICROHETEROGENEITY WATER FUEL EMULSION

S.P. Andryushchenko, V.V. Popkov,
S.V. Titov, G.S. Ure

The results of experimental studies of diesel H 10,5 / 12 at work on diesel fuel, crude and microheterogeneous water fuel emulsion on load characteristics.

***Keywords:** diesel, water fuel emulsion, experimental studies, load characteristics.*

WORKFLOW ANALYSIS VIHREKAMERNYH ENGINES

S.V. Titov, G.S. Ure

The analysis shows that one of the phenomena of multiple-maker leading reduce emissions of particulate matter larger than 0,002 mm, contained in the exhaust gases of diesel engine with swirl chamber are gas-dynamic oscillations excited in the process of combustion of pulverized fuel.

***Keywords:** engine, workflow, diesel engine with swirl chamber, gas-dynamic oscillations.*

TEST RESULTS DIESEL ON RAPESEED OIL WITH GAS PUMPS COMMON RAIL

A.E. Svistula, M.I. Mysnik

The results of experimental research of workflow engine running on rape oil using a split fuel equipment and apparatus type Common Rail were shown. The comparative analysis of indicators of workflow parameters of heat, exhaust and emission efficiency indicator was set. The perspective of the sample portion of the fuel equipment such as Common Rail is shown.

***Keywords:** fuel equipment Common Rail, colza oil, sample portion, the efficiency indicator, coefficients of non-heat, fuel soot.*

INCREASE OF EFFICIENCY AND DECREASE IN HARMFUL EMISSIONS OF THE DIESEL ENGINE IN CONSTANT CAPACITY MODES

A.E. Svistula, G.D. Matievsky

The choice of updating directions of dependence of optimum crankshaft rotation frequency with engine power is introduced. Optimization performance singularities of a diesel engine for problem-solving of reduction of fuel rate and harmful emissions in modes of constant capacity are shown. Engine power level dependence of relative optimum rotation frequency and potential reduction of the fuel effective rate is found. The analysis of exhaust toxicity reduction at operation under optimization performance is given.

***Keywords:** diesel, the constant power engine, the optimization speed performance, fuel effective rate, harmful emissions of the engine.*

RESEARCH OF WORKING PROCESS OF THE DIESEL ENGINE WITH SYSTEM FUEL DELIVERY SYSTEM OF THE ELEVATED PRESSURE ON THE BASIS OF GIVEN THE OPTICAL METHOD OF RESEARCH OF THE FUEL STREAM AND MOTOR TESTS

S.V. Jakovlev

In work results of pilot studies of the sprayed fuel stream and working process of the diesel engine with fuel delivery system equipment of an elevated pressure of "Common Rail" are presented. Features

of work of a diesel engine with storage system fuel delivery system are studied.

Keywords: *diesel engine, working process, storage system of injection, display efficiency, harmful emissions.*

SOME DYNAMIC SIMULATION ENGINE COMBUSTION

G.N/ Leonov, A.V. Frolov, I.S. Shustov

In article some features of thermal model of dynamics of the engine are considered. The basic provisions of the general approach to modeling of dynamics of the engine and its efficiency are cited. Dependence of quantity indicators of efficiency of dynamics with character of power allocation in the combustion chamber is established.

Keywords: *engine, dynamics, dynamics of energy.*

SYSTEM INTAKE AND EXHAUST ROTARY INTERNAL COMBUSTION ENGINE TURBO-TYPE

A.N. Tokarev, M.Yu. Tokarev

The problems of design and calculation of inlet and outlet of the motor rotary internal combustion turbo type, developed in the Altai State Technical University. Currently, the engine located at the manufacturing stage of the working layout.

Keywords: *internal combustion engine, the rotary engine, intake and exhaust systems.*

DEVELOPMENT CONTROL ALGORITHM GAS ENGINES TO INDIVIDUAL INJECTOR

S.P. Kulmanakov, M.E. Bryakotin,
S.S. Kulmanakov

In this paper the possibility of energy efficiency gas engines on partial mode by turning off part of the cylinders and change the air-fuel ratio. This capability is achieved by equipping the engine individually to the gas injectors controlled by an electron. Described theoretically possible to achieve the task. Results of calculation of power and fuel consumption in the Off-chennyh cylinders at partial power modes. The object of the study of the gas piston acts V twin engine 1G12 production of HC "Barnaultransmash."

Keywords: *engine, gas engines, control algorithm, individual injectors.*

SIMULATION OF TOXIC SUBSTANCES SPARK IGNITION ENGINES

A.P. Senachin

A mathematical model of the working process of the gas piston internal combustion engine with spark-ignition Vym, taking into account the propagation of the turbulent flame front in the combustion chamber volume of the real geometry. A mathematical model of toxic substances pu-order calculation of the equilibrium composition of the products of combustion including 15 gas components. Numerical simulation of the dynamics of the working process with the formation of toxic substances in the combustion engine of the car «Renault Logan» type «K7J710» dimension 4CH 7.95 / 7.

Keywords: *spark ignition engine, workflow, the mathematical model, the flame front, the formation of toxic, the equilibrium composition of the products of combustion, numerical modeling.*

INFLUENCE OF TEMPERATURE OF THE FULFILLED GASES OF THE DIESEL ENGINE ON QUALITY OF THEIR CLEANING OF HARMFUL SUBSTANCES

G.V. Medvedev, A.L. Novoselov,
T.V. Novoselova, A.A. Melbert

Influence of temperature of the fulfilled gases of a diesel engine on quality of cleaning of oxides of nitrogen, oxide of carbon, hydrocarbons in the porous materials received by high-temperature synthesis is defined. Ranges of temperatures for highly effective purification of gases are established.

Keywords: *the temperature, the fulfilled gases, a diesel engine, quality, cleaning, ranges, nitrogen oxides, hydrocarbons, carbon oxide.*

CLEANING THE EXHAUST GASES OF THE DIESEL ENGINE ON CATALYSTS BASED ON IRON ORES OF ZEOLITES

A.A. Novoselov, A.A. Melbert,
V.A. Sinicin, E.V. Titova

Suggested the use of zeolites in the ore blend to get the catalytic converter diesel exhaust blocks high-temperature synthesis. Analytical dependences of linking the effectiveness of cleaning of gases from nitrogen oxides, hydrocarbons, carbon monoxide and particulate matter from the contents of zeolites in charge.

Keywords: *ore, burden, high temperature, synthesis, catalytic, catalyst, diesel, cleaning of exhaust gases, zeolites.*

CLEANING THE EXHAUST GASES OF THE DIESEL ENGINE ON CATALYSTS BASED ON IRON ORE MONACITA

D.S. Pechennikova, A.E. Baklanov, T.V. Novoselova

Suggested the use of monacita ore consisting of blend to get the catalytic converter diesel exhaust blocks high-temperature synthesis. Analytical dependences of linking the effectiveness of cleaning of gases from nitrogen oxides, hydrocarbons, carbon monoxide and particulates from the content monacita in charge.

Keywords: *ore, burden, high temperature, synthesis, catalytic, catalyst, diesel, cleaning of exhaust gases, monazite.*

THE USE OF ORE LOPARITA CATALYTIC PURIFICATION SYSTEMS THE EXHAUST GASES OF DIESEL ENGINES

G.V. Medvedev, N.P. Tubalov, N.N. Gorlova

Suggested the use of loparita ore consisting of blend to get the catalytic converter diesel exhaust blocks high-temperature synthesis. Analytical dependences of linking the effectiveness of cleaning of gases from nitrogen oxides, hydrocarbons, carbon monoxide and particulates from the content loparita in charge.

Keywords: *ore, burden, high temperature, synthesis, catalytic, catalyst, diesel, cleaning of exhaust gases, loparit.*

APPLICATION OF BASTNÄSITE CRYSTAL ORE IN CATALYTIC MATERIALS FOR CLEANING EXHAUST EMISSIONS OF DIESEL ENGINES

D.N. Titov, A.L. Novoselov, D.S. Pechennikova

Invited to use the blend bastnäsite Crystal ore to get the catalytic converter diesel exhaust blocks high-temperature synthesis. Analytical dependences of linking the effectiveness of cleaning of gases from nitrogen oxides, hydrocarbons, carbon monoxide and particulates from bastnäsite Crystal in charge.

Keywords: *ore, burden, high temperature, synthesis, catalytic, catalyst, diesel, cleaning of exhaust gases, and bastnäsite.*

NOISE REDUCTION OF DIESEL OF TRACKED VEHICLES

V.A. Sinicin, A.A. Novoselov,
S.V. Safronov, G.V. Medvedev

The results of works on sound power reduction of exhaust systems conversion tracked vehicles with different types of diesel engines equipped with alternately silencers, catalytic converters, converters with active noise suppression.

Keywords: *reduction, noise, emission, diesel muffler, converter, active suppression.*

ESTABLISHMENT OF BIOFUEL TECHNOLOGY USING GAS CONDENSATES AND AN ASSESSMENT OF ITS COST-EFFECTIVENESS

O.M. Gorelova, N.N. Gorlova, K.S. Bokov

The paper presents a study on production technology of environmentally clean gasoline by gas condensate with the addition of ethanol. The production of this fuel will allow more efficient processing of gas condensate, and its use will reduce the content of carbon monoxide, hydrocarbons and particulates in the exhaust of motor vehicles.

Keywords: *production, gas condensate, ethanol, fuels reduction, carbon monoxide, hydrocarbons, particulate matter, exhaust gases, transport, economic efficiency.*

GAS DYNAMICS AND LOCAL HEAT EMISSION OF FLOW IN INPUT PIPE OF VARIOUS SECTIONAL SHAPES OF COMBUSTION ENGINE OF DIMENSION 8,2/7,1

L.V. Plotnikov, B.P. Zhilkin

In the article experimental investigation results of gas dynamics and local heat emission in input pipe of combustion engine of dimension 8,2/7,1 are presented. Oscillograms of air flow speeds and local heat-transfer coefficient in input pipe of combustion engine are viewed. Data of coefficient of admission for input pipes of various sectional shapes are presented. It is noted that intensity of heat emission in input pipe at pulsating flow is significantly less then at stationary flow.

Keywords: *piston internal combustion engine, air admission, cross-section profiling, gas dynamics, local heat transfer.*

MODELING OF GAS FLOW AT THE INLET 1 OF INTERNAL COMBUSTION ENGINE

J.A. Shaposhnikov, A.V. Tunin

The paper describes a method for the calculation of 3D viscous incompressible flow through induction port in an internal combustion engine. The approach is based on numerical integration of the Reynolds-averaged Navier-Stokes equations. The paper also gives results of computational of flow through induction port in an internal combustion engine, showing that these results agree reasonable well with experimental data.

Numerical simulation of currents flowing gas ENGINES will examine in detail the parts characteristic flow at any point, as well as to determine the magnitude of hydrodynamic losses related to education, the emergence of vouchers in border zones, etc. In addition, consistently and purposefully redesigning the shape of the channel in the numerical experiment you can find such a configuration that will best meet the requirements.

Keywords: *design, inlet channel, flow of gases, description of stream, that can be torn off zones, physical experiment.*

SMESEOBRAZOVANY'S MODE AND IGNITION OF THE WORKING MIXTURE OF THE INTERNAL COMBUSTION ENGINE

A.S. Pavlyk, A.S. Frolkin

The reasonable way improving an inflammability of a toplivovozdushny mixture of DVS is considered. Possibility of increase in thermal efficiency and fuel consumption drop is reached. The installation using electrohydraulic effect which essence consists in any course of an electric discharge (spark, hand, etc.) a high voltage through liquid volume is offered. Change of a chemical composition of liquid repeated ionization of joints and the elements containing in liquid can be result.

Keywords: *mode, inflammability, thermal efficiency, fuel consumption, installation, electrohydraulic effect, toxicity of gases.*

EXPERIMENTAL STUDY OF DYNAMIC PROCESSES THE DETAILS OF THE GAS ENGINE INTERFACE 4 Ч 13/14

V.S. Popovich, N.G. Lopukhova, V.M. Lopukhiv

The article presents results of deformations and stresses in the details of the gas interface "cylinder head-gasket-block-crankcase" engine running the booth and received by the computer experiment.

Keywords: *deformation, voltage, strain exhibiting parts of the gas interface «cylinder – gasket – block – carter».*

LOWER ENERGY COSTS FOR A COOKED SOLUTION OF MINERAL FERTILIZERS

J.A. Shaposhnikov, N.A. Chernetskaya

One of resursoyemky processes in hothouse vegetable growing is top dressing of plants by liquid mineral fertilizers. For their dissolution in irrigation water certain expenses of energy and time for preparation of the qualitative nutritious solution corresponding to agrotechnical requirements are required.

Improve the efficiency of generating a mixture of liquid fertilizers can be through use of the device, with radial paddle.

Keywords: *resource-saving mode, horizontal machine, radial impeller, operation, mineral fertilizers.*

EVALUATION OF EFFICIENCY OF MAIN METHODS OF DIAGNOSIS OF ASYNCHRONOUS ELECTRIC MOTORS

V.V. Bobrov

The article deals with modern methods of diagnosis asynchronous motors and causes of low efficiency of their use in agriculture. Results of comparative analysis these methods are given, and a new universal method for assessment of the state electric motors based on the use of the principles of eddy current testing is offered.

Keywords: *electric motor, harmonics, diagnostics, external electromagnetic field.*

KINEMATICS OF THE HITCH OF MACHINE-TRACTOR AGGREGATES FORMING FOUR-BAR LINKAGE

A.S. Pavlyuk, Y.I. Shenkneht

The article is concerned with the analysis of kinematics of the hitch of machine-tractor aggregate forming four-bar linkage. The existing schemes of location of forward hinge of bottom drag link, manoeuvring characteristics and degree of stability of aggregate motion are analyzed. The analysis is accompanied by calculation and by plotting. The concerned problem represents scientific and practical interest by research of possibilities of increase of aggregate manoeuvrability.

Keywords: *kinematics of the hitch, machine-tractor aggregate, four-bar linkage, manoeuvring, stability of motion.*

APPLICATION OF THE METHOD OF POINTS COORDINATES DETERMINATION AND SURFACE AREAS ORIENTATION OF A COMPLICATED-FORMED BODY TO SPECIFY EARTH SURFACE PROFILE

A.S. Pavlyuk, A.S. Baranov, S.V. Safronov

The paper suggests the known method of determining points coordinates and surface orientation of a complicated-formed body be used to determine the points coordinates of Earth surface. The description of implementation of the given method based on shape and size analysis or reference labels and the process of input data gaining is given. The technique allows surface modeling via computer.

Keywords: *earth surface profile, label center coordinates, measurement analysis, surface modeling.*

DEVELOPMENT OF THE METHOD FOR RECYCLING VEGETABLE SORPTION MATERIALS USED TO WATER PURIFICATION FROM OIL PRODUCTS

M.V. Kulikova, A.N. Romanov

The possibility of utilization of straw, previously used for the water purification contaminated with petroleum products was studied. It is shown that the addition of chopped straw cereals and mineral salts that form crystalline hydrates, greatly slows the rate of temperature increase of cement materials, with plant and mineral supplements when heated.

Keywords: *natural water purification, sorbents, oil, crystalline minerals, straw, IR spectroscopy.*

CREATING ECO-EFFECTIVE TECHNOLOGIES SOFTENING OF NATURAL WATER USING NEW TYPES OF MATERIALS

L.V. Kurtukova, V.A. Somin, L.F. Komarova

The paper presents the technology of softening of natural water hardness of the compounds with the use of new materials based on basalt fibers modified bentonite clay. The static and dynamic parameters of water treatment from hardness ions, the possibility of regeneration of the sorbent. As a result, the purified water meets the requirements of the make-up water in heat power engineering.

Keywords: *hardness water, ion exchange, adsorbing material, softening water.*

THE SOLUTION OF QUESTIONS OF WATER PURIFICATION FROM COMPOUNDS OF METALS WITH USE OF NEW SORBENTS

V.A. Somin, A.A. Fogel, L.F. Komarova

In work results of researches on receiving new types of sorption materials for water purification from compounds of heavy metals are presented. Sorption properties of the received materials in relation to copper ions are studied.

Keywords: *sorbate, heavy metals, wood waste, bentonite, water purification.*

RESEARCH OF THE PARAMETERS INFLUENCING QUALITY OF CLEARING OF FULFILLED GASES OF THE DIESEL ENGINE

V.V. Brazovsky, G.M.Kashkarov, A.A.Sitnikov, N.P.Tubalov, V.I.Jakovlev, M.A. Kolomeets

Researches of parametres of the fulfilled gases of the diesel engine at their passage through каталитические neutralizers are resulted. The disperse structure of particles was registered by a method of digital holography with a direct input of results of measurements in the personal electronic computer (PC) and the processing subsequent the computer th. Essential impact makes on quality of clearing of gases from firm particles surplus of air in the neutralizer reactor, противодавление on release, charcoal fumes of lubricant oil in a diesel engine, the specific area of the filter, after the filter raises that-peratura of the fulfilled gases that testifies to presence экзотермических reactions in a porous wall of the filter.

Keywords: *the fulfilled gases of a diesel engine, каталитический neutralizer, disperse structure of particles, a method of digital holography, concentration of firm particles, factor of surplus of air, противодавление on release, charcoal fumes of lubricant oil, the specific area of the filter, temperature of the fulfilled gases.*

THE ANALYSIS OF DYNAMIC PROCESSES IN THE INTERFACED DETAILS GAS JOINT OF THE DIESEL ENGINE 4Ч 13/14

V.S. Popovich, N.G. Lopukhova

The algorithm of the theoretical analysis and determination of parameters of dynamic processes of the interfaced details of a gas joint «a head of cylinders – laying – the block a case» an internal combustion engine is given. Reliability of results proves to be true experimental researches of this design of the engine.

Keywords: *the diesel engine, a gas joint, the analysis of the dynamic processes, the interfaced details of a gas joint «a head of cylinders – laying – the block – a case».*

ПРАВИЛА ПО ОФОРМЛЕНИЮ СТАТЬИ

Статья объёмом 5-8 страниц, имеющая индекс УДК, аннотацию из 2-3 предложений и ключевые слова на русском языке (в начале текста статьи) с приложением перевода названия, ФИО авторов и ключевых слов на английском языке, а также сведений об авторах (ученой степени, звания и места работы, E-mail и/или контактного телефона) должна отвечать следующим требованиям:

Работы принимаются в текстовом редакторе MS Word версии не ниже 97.

В диалоге «*Файл-Параметры страницы*» используется *размер бумаги* формата А4*, ориентация* листа *книжная*. *Поля: верхнее* - 3,5 см; *нижнее* - 2,5; *левое* - 2,5; *правое* - 2,5; *переплет* - 0 см; *колонтитул от края: верхний* - 1,25; *нижний* - 2,3 см.

В диалоге «*Формат-Колонки*» выбирается расположение текста в «*две*» колонки, устанавливается *ширина колонок* - 7,65 см, *промежуток* между ними - 0,7 см.

Названия статей набираются прописными буквами (шрифт «Arial», размер шрифта текста - 14 пунктов, полужирный). Инициалы и фамилии авторов размещаются под названием статьи (шрифт «Arial», размер шрифта текста - 12 пунктов).

Для основной части текста используется шрифт под названием «Arial», размер шрифта основного текста - 10 пунктов, красная строка - 0,8 см, интервал между строками «*одинарный*». Нумерация страниц производится шрифтом размером «Arial», 12 пунктов, наклонный. Расположение нумерации - внизу страницы (в нижнем колонтитуле), снаружи.

В диалоге «*Файл-Параметры страницы*» - «*Макет*» включить «*Различать колонтитулы» - первой страницы* и *чётных и нечётных страниц*.

В верхнем колонтитуле указывается: на чётных страницах - инициалы и фамилии авторов (Arial, 10 пунктов, прописные); на нечётных страницах - название статьи (главы) (Arial, 10 пунктов, прописные).

Список литературы набирается шрифтом «Arial», размером - 9 пунктов.

Для создания формул и таблиц используются встроенные возможности Word. Рисунки цифрового формата (в электронном виде) создаются средствами Word или другими программами в черно-белом виде и вставляются в нужное место документа.

Размеры рисунков не должны превышать границы полей страницы основного текста документа с учетом подрисуночной подписи. Рисунки издательством не редактируются. Если рисунок по ширине превышает размер колонки, то необходимо ставить перед ним и после него разрыв раздела на текущей странице и располагать рисунок в начале или в конце страницы.

Рисунки, надписи и объекты Word должны перемещаться вместе с текстом, т.е. быть не поверх текста!

При приеме работы в печать обязательно наличие электронной и твердой копии статьи, акта экспертизы и внешней рецензии, подписанной доктором наук.

Кроме того, каждый из авторов отдельно предоставляет подписанное и заверенное по месту работы (или нотариально) письмо установленного образца о согласии автора на публикацию статьи и размещение ее в Интернете (с использованием метаданных).

Плата с аспирантов не взимается.

Контактная информация:
тел. 8-3852-29-07-44
эл.почта - gen195@mail.ru
Суханкин Геннадий Владимирович

Подписано в печать 25.09.2012. Формат 60*84 1\8. Печать-XEROX. Усл.п.л. 30,5. Тираж 500 экз.
Отпечатано в типографии АлтГТУ им. Ползунова, г. Барнаул, пр-т Ленина, 46