

Water Treatment

USSR

UDC 628.16.094.9

MIRKIS, I. M., DYKHNO, A. Yu., MIKHAYLOV, I. P., MITLI'SKIY, G. A., and
KEGAMYAN, Yu. Sh.

"Removal of Calcium From Caspian Sea Water by Ion Exchange"

Moscow, Vodostabzheniye i Sanitarnaya Tekhnika, No 10, 1972, pp 1-5

Abstract: Three types of sediments form during evaporation of sea water: calcium carbonate, magnesium hydroxide and calcium sulfate. The first two precipitate due to the presence of carbonate and bicarbonate ions whose content is rather low in comparison to other sediment-forming ions. Pilot plant studies were carried out with Caspian Sea water in an attempt to develop preventive measures against formation of sediment in the evaporators, by means of the decomposition of carbonates formed with acid, followed by removal of the calcium with the ion exchange technique. Scrubbed water was used for the regeneration of cation exchange resin. It was shown that it is possible to carry out a long-lasting cyclic process. The technology of such a process was developed. Effective exchange capacity of sulfonated coal and cation exchange resin KU-2 was determined.

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USSR

UDC 621.224-22:532.5

MIKHAYLOV, I. Ye., and NOVODEREZHKIN, R. A.

"Pressure Losses in the Supply Line of a Hydraulic Turbine"

Sb. Tr. Mosk. Inzh.-Stroit. In-t [Collection of Works. Moscow Construction Engineering Institute], 1971, No 91, pp 143-150 (from Referativnyy Zhurnal, No 10, Oct 72. 49. Turbostroyeniye. Single Issue. Abstract No 10.49-204)

Translation: The investigation of energy losses in the individual members of the flow line of a hydraulic turbine makes possible a more well-founded evaluation of the potential effect of individual members on the energy indices of the hydraulic turbine, a determination of the locations and sources of increased energy losses, and the indication of ways of their reduction. Carried out experimental investigations showed that total losses in the helical chamber, the stator, and the guiding device vary from 1.5 to 5% of total pressure; that is to say, they amount to 30% of all energy losses in the flow line of the hydraulic turbine. Besides, the shape of the helical chamber and also the mutual position of the stator columns and stator blades affect essentially the flow uniformity before the rotor, from which depend the energy losses in the rotor and the suction tube of the hydraulic turbine. Two illustrations, one table, three bibliographic references.
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USSR

UDC: 533.6.011

BORISOV, V. M. MIKHAYLOV, I. Ye.

"Numerical Method of Characteristics for Three-Dimensional Stationary Nonvortical Gas Flows"

Sb. teor. rabot po gidromekh. (Collection of Theoretical Works on Hydro-mechanics), Moscow, Vychisl. tsentr AN SSSR, 1970, pp 6-29 (from RZh-Mekhanika, No 4, Apr 71, Abstract No 4B228)

Translation: The authors construct a modification of the numerical method of three-dimensional characteristics for equations of nonvortical gas dynamics of a gas with arbitrary equations of state. It is shown that selection of the canonical equations on the characteristic surface is non-unique and may be accomplished with regard to the requirements of numerical methods (convenience of approximation, stability of calculation, etc.). As an example, hypersonic nonvortical flow of a perfect gas with $\kappa = 1.4$ is calculated in the region of a sharp bend in the wall of a three-dimensional nozzle. Tables are given. I. M. Tsitelov.

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USSR

UDC 517.9:533.7

BORISOV, V. M., and MIKHAYLOV, I. YE., Moscow

"On the Steady-State, Three-Dimensional, Vortex-Free Motion of a Gas With Supersonic Velocity"

Moscow, Zhurnal Vychislitel'noy Matematiki i Matematicheskoy Fiziki, Vol. 10, No. 4, Jul/Aug 70, pp 1006-1015

Abstract: Three-dimensional steady-state motion with the absence of vortices is analyzed as the most simple of the essentially spatial motions of a gas. The study is limited to the region of supersonic velocities. The form obtained for the characteristic relationships made it possible to make a complete analysis of these relationships and to construct a characteristic system of coordinates in space. The latter was used to construct a finite-difference scheme for the spatial characteristics method. The supersonic flow in a three-dimensional jet of tetrahedral shape is calculated as an example. The computation time on the BESM-6 computer was about 6 minutes.

USSR

UDC 669.71.042.6

MIKHAYLOV, K. N., GAVRILOV, S. S., VASILEVSKIY, A. M., MARCHENKO, A. M.,
FOL'KHIN, G. D., and PEGHENEV, V. S.

"Casting of Ingots of Aluminum Alloys in Multiple-Crystallizer Systems"

Tekhnol. legkikh splavov. Nauchno-tekhn. byui. VILSA [Technology of Light Alloys. Scientific and Technical Collection of All-Union Institute of Light Alloys], No. 4, 1970, pp. 30-34, (Translated from Referativnyy Zhurnal-Metallurgiya, No. 1, 1971, Abstract No. I G113 by G.Srodtsseva).

Translation: A 24-crystallizer system for casting of aluminum alloy ingots 112, 145, and 165 mm in diameter on a single casting machine from a single tap hole has been developed and tested in order to increase the productivity of labor and casting equipment. A diagram and drawing of the installation are presented. 3 illustrations.

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Bionics

USSR

MIKHAYLOV, L., Candidate of Technical Sciences

"A Reader Asks to Speak"

Moscow, Sovetskaya Rossiya, 2 Jun 72, p 3

Abstract: For thousands of years man has turned to nature for a model in his aspiration toward scientific and technological progress. Finally, on September 13, 1960, the First International Symposium on Bionics was opened, putting the process of using natural models for new designs on a scientific foundation. The new science combines and synthesizes the accumulated knowledge of such sciences as botany, cybernetics, psychology, biochemistry, etc. Bionics does not simply copy natural models, but extrapolates their general principles of organization. Some of the achievements and aims of bionics given in the article follow: The common fly and mosquito maintain their balance by means of halteres located behind each wing. Engineers have adapted a technical model of the halteres for use in aviation. A horseshoe crab's eye can increase the contrast of an image. This property might be useful in instruments for the analysis of television images and space photography. In France the application of the principles of microorganic

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MIKHAYLOV, L., Sovetskaya Rossiya, 2 Jun 72, p 3

structure to modular construction is being studied. Bionics is also studying the expediency, economy, and reliability practiced in nature. This has importance with regard to aviation and space travel. Though bionics is a new science, it grows more important daily.

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USSR

UDC [621.357:621.72.027]:669.3

LAVRENT'YEV, L. F., MIKHAYLOV, I. F., ROMANENKO, I. N.

"Experimental Study of the Effect of the Degree of Purity and Contact Pressure on the Contact Resistance of Flat Copper Surfaces"

V sb. Elektr. razrvad v elektrotekhnol. ustanovkakh (Electric Discharge in Electrotechnical Devices -- collection of works), Cheboksary, 1971, pp 93-96 (from RZh-Khimiya, No 12, Jun 72, Abstract No 12L341).

Translation: A study was made of the dependence of the contact resistance of flat Cu surfaces on the procedure used in machining them (the surface was machined with a fine sandpaper, a coarse file, or oxidized by chlorine) and the magnitude of the contact pressure for various D. The pressures varied from 0.1 to 4 kg/cm²; D reached 50 μ/cm². It was demonstrated that in order to insure minimum contact resistance for flat contacts up to 50 cm² in area a pressure of 1.5-2 kilogram-force/cm² is sufficient. When P = 2 kilogram-force/cm², the mean contact resistance ρ ≈ 1-1.5 ohm-cm². For large contact surfaces, special lapping of the surface is required or making the contacts sectional (with each section area ≤ 40-50 cm²). The contact surfaces must be cleaned to remove oxides.

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USSR

UDC 517.948.32

MIKHAYLOV, L. G., Corresponding Member of the Academy of Sciences Tadzhik SSR, and ZAMOTA, A. V., Department of Mathematics and Computer Center of the Academy of Sciences Tadzhik SSR, Gor'kiy State University Imeni N. I. Lobachevskiy

"On Some Integral Equations With Homogeneous Kernels"

Dushanbe, Doklady Akademii Nauk Tadzhikskoy SSR, Vol. 14, (3) No 12, 1971, pp 3-7

Abstract: The article describes the equation

$$f(x) = \int_{\Omega} \theta(x, y) f(y) dy + g(x), \quad x \in \Omega;$$

where x and y are points of an m -dimensional Euclidean space R_m , Ω is a unit sphere with the center at the origin of coordinates, $\mu(x)$ and $\theta(x, y)$ are given functions and $f(x)$ a sought function. The kernel of the equation $\theta(x, y)$ is homogeneous of degree $-m/2$, i.e.,

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MIKHAYLOV, L. G., and ZAMOTA, A. V., Doklady Akademii Nauk Tadzhikskoy SSR, Vol 14, No 12, 1971, pp 3-7

$$\theta(tx, ty) = t^{-m} \theta(x, y), \quad x, y \in R_m, \quad t > 0;$$

it is invariant under the group $SO(m)$ of any rotations of space R_m ; i.e.,

$$\theta(gx, gy) = \theta(x, y)$$

for any $x, y \in R_m$ and any $g \in SO(m)$; for a certain real β it satisfies the summability condition

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USSR

MIKHAYLOV, L. G., and ZANOTA, A. V., Doklady Akademii Nauk Tadzhikskoy SSR, Vol 14, No 12, 1971, pp 3-7

$$\int_{R_m} |\theta(j, u)| |u|^{-\beta} du < \infty, \text{ where } j = (1, 0, \dots, 0).$$

Equation (1) is considered in one of the following Banach spaces: $C_\beta(\Omega)$, $M_\beta(\Omega)$, $L^p_{\beta - \frac{m}{p}}(\Omega)$, joining them into the series $E_m(\beta, \Omega)$.

Equation (1) was previously considered by L. G. MIKHAYLOV for $m = 2$. In this case equation (1) was reduced to an infinite system of independent equations with homogeneous kernels of degree -1 . A normality condition was found for each equation of the system, and an exact theorem was obtained on the number of linearly independent solutions of the homogeneous equation and the number of conditions for the solvability of the nonhomogeneous equation. The present article generalizes these results for the case $m \geq 2$. Just as in the two-dimensional case, equation (1) expands into an infinite system of one-dimensional equations with homogeneous kernels.

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USSR

UDC 517.945.7

~~MIKHAYLOV, I. G.~~, Corresponding Member Academy of Sciences Tadzhik SSR and
~~ABROSIMOV, A. V.~~, Gorkiy State University, imeni N. I. Lobachevskiy

"Several Overdetermined Systems of Partial Differential Equations"

Dushanbe, Doklady Akademii Nauk Tadzhikskoy SSR, Vol 14, No 6, 1971, pp 9-13

Abstract: The authors pose the problem of an open bounded set of points for a plane whose boundary is a finite number of rectifiable closed Jordan curves. In addition, they examine a variety of solutions to several systems such as that described by this problem.

They pose 4 theorems to ensure compatibility of two equations whose symbols represent analytical functions of their own variables. The authors discuss these theorems and 2 lemmas and give a detailed mathematical analysis of their positions along with the proof thereto. The article contains 3 bibliographic entries.

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USSR

UDC 535.376

BORODIN, YU.P., BORONIN, V.G., KAREV, YU.A., KRUGLOV, I.I., MIKHAYLOV, L.I.,
PAVLOVA, V.A., PETROV, V.S., RYZHIKOV, I.V.

"Study Of The Region Of Radiative Recombination In Electroluminescent
Structures Based On Diffusion And Epitaxial Specimens Of Gallium Arsenide"

V sb. Elektroluminetsentsiya tverd. tel. (Electroluminescence Of Solid Bodies--
Collection Of Works), Kiev, "Nauk.dumka," 1971, pp 54-58 (from RZh--Elektronika
i yeye primeneniye, No 11, Nov 1971, Abstract No 118335)

Translation: A comprehensive study is presented of the electrical and optical
properties of the region of radiation recombination in diffused and epitaxial
specimens. The distribution is obtained of the impurity in the p-region of
diffused and epitaxial specimens by means of a measurement of the photolumin-
escent spectra. The experimentally determined transition time is: up to 1000
nanosecond with epitaxial specimens and 50 nanosec with diffused. The external
quantum efficiency at $T = 300^{\circ} K$ of the diffused and epitaxial specimens equals
one percent and five percent, respectively, and for a construction with the
maximum possible external quantum efficiency ~ 9 percent. 6 ill. 5 ref. Summary.

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USSR

UDC: 539.1.074

(1)

GRAMMATIKATI, V. S., GRINEV, M. P., YERSHOVA, Z. F., DOZLOV, L. L.,
LITVINOVA, T. G., MIKHAYLOV, L. M., MOLIN, A. A., PANCHENKOV, G. M.

"Color Indicators for Visual Evaluation of Dose During Radiation
Sterilization"

Dozimetriya i Radiats. Protsessy v Dozimetr. Sistemakh [Dosimetry and
Radiation Processes in Dosimetric Systems -- Collection of Works], Tashkent,
Fan Press, 1972, pp 113-118 (Translated from Referativnyy Zhurnal
Metrologiya i Izmeritel'naya Tekhnika, No 3, 1973, Abstract No 3.32.1403),
from the resume.

Translation: It is suggested that a plasticized PVC film containing an acid-
sensitive dye be used as a color dose indicator for the 0.1-5.0 Mrad range.
The sensitivity of indicators to radiation as a function of film composition
and dye used is studied. Color dose indicators are calibrated using the
ferrosulfate method and calorimetry. A method is suggested for instrumental
testing of changes in the color of indicators using spectrophotometry of
irradiated specimens, allowing doses to be measured with errors of $\pm 10-12\%$.
Practical recommendations are presented for the use of color dose indicators
to check radiation sterilization. 2 figures, 1 biblio. ref.

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USSR

UDC 669.715:621.746.06

MIKHAYLOV, L. M., and ROZANOVA, V. S.

"Use of Asbestos Silicate as a Thermal Insulation Material in Equipment for Filling and Metering Aluminum and Its Alloys"

Moscow, Tsvetnyye Metally, No 12, Dec 70, pp 49-52

Abstract: The economic effectiveness and service qualities of equipment for measuring the pouring of aluminum alloys, specifically under pressure, are markedly affected by the design of the equipment, the metal chute, the thermal insulation, and the technological temperature of the melt during pouring. It is believed that the use of new insulation materials not wetted by aluminum and its alloys and other steps designed to inhibit the dissipation of heat will facilitate new equipment of smaller dimensions, longer life, and more reliable service. To investigate the potential replacement of the metal components and eliminate various shortcomings in the joints of the metal proportioning device contacting the liquid metal, use was made of a new thermal insulation material -- asbestos silicate (asbothermosilicate). The material features the following properties: heat conductivity, 0.08 to 0.18 kcal/m hr °C;

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MIKHAYLOV, L. M., and TOSANOVA, V. S., Tsvetnyye Metally, No 12, Dec 70, pp 49-52

volumetric weight, 0.5-0.8 g/cm³; strength, about 100 kg/cm². The material will maintain these properties for two months at 700-500°C, will not interact with aluminum and its alloys, and is readily machinable. The components are: asbestos, lime, silica, and water. It may be used for lining transporting, distributing, and receiving devices for metal in pouring and is known to have good thermal insulation properties which makes possible delivery of material over greater distances without special heating of transporting equipment. A new design of a metal duct in the DU-6B pouring and measuring system using the new thermal insulation material is described. Both the efficiency and reliability of the equipment were tested and showed positive results.

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USSR

UDC 537.311.33.001.2

ALADINSKIY, V.K., MIKHAYLOV, L.N., SHPIRT, V.A.

"Generation Of Microwave Oscillations In Silicon Epitaxial P-N Junctions"

Elektron. tekhnika. Nauch.-tekhn.sb. Poluprovodn. prikory (Electronic Technics. Scientific-Technical Collection. Semiconductor Devices), 1971, Issue 7(64), pp 21-23 (from RZh:Elektronika i yeye primeneniye, No 5, May 1972, Abstract No 5B108)

Translation: The paper reports on the generation of microwave oscillations in p-n junctions in which the base and rectifying layers are obtained by epitaxy. The breakdown voltages of the semiconductor diode are found in the 60-80 V interval. The capacitance with zero bias is ≤ 1 pf. The wavelength of the oscillations which are generated is 5.4-5.8 cm.

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USSR

UDC 621.357.7:678.029.665

PETROV, KH., NENOV, D., BAYEVA, V., ~~MIKHAYLOV, H.~~

"Effect of the Conditions of Pickling Bulgarian Shock Resistant Polystyrene on Its Galvanic Metal Plating"

Polimery 71. Simpoz., Varna, 1971 (Polymers 71. Symposium, Varna, 1971), Place and date of publication not given, 115 (from RZh-Khimiya, No 6 (11), Jun 72, Abstract No 6L324)

Translation: A study was made of the resistance to scaling, the resistance to temperature variations and the corrosion resistance of electrodeposited metal coatings on Duxtren D625Ye11 Bulgarian polystyrene (having antishock properties) pickled before applying the galvanic coating with acid dichromate solutions under various conditions. It was established that the macroroughness of the plastic substrate increases with time during pickling to a defined, later invariant degree for which the resistance to scaling of the metal coating reaches a maximum. A study of the microhardness (by an electron microscope) demonstrated the presence of a correlation of this parameter to the scaling resistance. The conclusion was drawn that the investigated antishock polystyrene can be subjected to metal plating.

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1/2 017 UNCLASSIFIED PROCESSING DATE--13NOV70
 TITLE--POLYADDUCTS OF DIFURAN COMPOUNDS -U-
 AUTHOR-(04)-BERLIN, A.A., BUDEVSKA, KH., MIKHAYLOV, M., ZABUNOVA, O.
 COUNTRY OF INFO--USSR
 SOURCE--VYSOKOMOL. SOEDIN., SER. B 1970, 12(4), 277-80
 DATE PUBLISHED-----70
 SUBJECT AREAS--CHEMISTRY, MATERIALS
 TOPIC TAGS--HEAT RESISTANT PLASTIC, FURAN, PHTHALATE, AZINE
 CONTROL MARKING--NO RESTRICTIONS
 DOCUMENT CLASS--UNCLASSIFIED
 PROXY REEL/FRAME--3006/1245 STEP NO--UR/0460/70/012/004/0277/0280
 CIRC ACCESSION NO--AP0134919
 UNCLASSIFIED

2/2 017 UNCLASSIFIED PROCESSING DATE--13NOV70
CIRC ACCESSION NO--AP0134919
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. REACTIVE POLYADDUCTS WERE PREPD.
FROM DIFURFURYL TEREPHTHALATE OR FURFURAL AZINE AND BISOLENOPHILES, SUCH
AS N,NPRIME,HEXAMETHYLENEDIMALEIMIDE (DIELS-ALDEN REACTION). THE
POLYADDUCTS WERE HEATED IN VACUO (10 PRIMENEGATIVE3 -10 PRIMENEGATIVE4
MM) WITH OR WITHOUT HYDROQUINONE AT 150DEGREES TO GIVE-CROSSLINKED, HEAT
RESISTANT POLYMERS. FACILITY: INST. KHIM. FIZ., MOSCOW, USSR.

UNCLASSIFIED

Acc. Nr.

AP0048832

Abstracting Service:
CHEMICAL ABST.

5-70
M

Ref. Code

UR0460

90928x Conoscopic study of dendrite structures in a thin film of poly(oxymethylene) diacetate. Mikhailov, M.; Nedkov, E. (USSR). *Vysokomol. Soedin., Ser. B* 1960, 2, 1100 (Russ). Conoscopic studies of dendritic and ovoid structures obtained in a thin layer of fused title polymer showed that a resolved diffraction pattern could be obtained from them with a well-collimated, entirely fine, and weakly intense light beam which converged at a short distance from the object. The relative position of the interference maxima is due not to diffraction of the sym. disposed, approx. identical scattering elements of which the spherulites consist, but to diffraction of the different (in form and size) scattering elements which at first glance appeared to be chaotically arranged. DBJR

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REEL/FRA
19800599

UDC 541.11

USSR

MIKHAYLOV, M. A., and EPOV, D. G., Department of Chemistry, Far Eastern Section, Siberian Division Acad. Sc. USSR, Vladivostok

"Kinetics of Thermal Decomposition of Ammonium Hexafluorozirconate and Hexafluorohafnate"

Novosibirsk, Izvestiya Sibirskogo Otdeleniya Akademii Nauk SSSR, Seriya Khimicheskikh Nauk, No 12, Sep 70, pp 99-104

Abstract: The kinetics of thermal decomposition of $(\text{NH}_4)_2\text{ZrF}_6$ and $(\text{NH}_4)_2\text{HfF}_6$ in dry nitrogen atmosphere was studied in temperature range 290-430°C. The results may be described satisfactorily by the equation $3\sqrt{t} - a = Kt$. For $(\text{NH}_4)_2\text{ZrF}_6$ the activation energy was 11.0 Kcal/mole and for $(\text{NH}_4)_2\text{HfF}_6$ it amounted to 11.9 Kcal/mole. The intermediate products in above reaction are NH_4ZrF_5 and NH_4HfF_5 , the final products being ZrF_4 and HfF_4 . The ammonium hexafluorozirconate was found to be more stable thermally than the ammonium hexafluorohafnate.

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1/2 021 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--ELECTRON MICROSCOPIC INVESTIGATION OF DISLOCATION STRUCTURE OF
FLUORITE -U-
AUTHOR-(02)-MIKHAYLOV, M.A., TRACHENKO, YE.A.

COUNTRY OF INFO--USSR

SOURCE--IZVESTIYA SIBIRSKOGO OTDELENIYA AKADEMII NAUK SSSR, NO 4, SERIYA
KHMICHESKIHK NAUK, 1970, NR 2, PP 163-165
DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--ELECTRON MICROSCOPY, CRYSTAL DISLOCATION, FLUORITE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1993/0571

STEP NO--UR/0209/70/000/000/0163/0165

CIRC ACCESSION NO--AP0113462

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--13NOV70

2/2 021

CIRC ACCESSION NO--AP0113462

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN THIS REPORT THE INDIRECT ELECTRON MICROSCOPIC METHOD (THE REPLICA METHOD) OF OBSERVATION ETCH FIGURE OF OPAQUE CRYSTALS HAVE BEEN DESCRIBED. WE HAVE INVESTIGATION THE ETCH FIGURE OF CRYSTALS OF OPTICAL FLUORITE BY SULPHURIC ACID. IT IS SHOWN THAT THE DISSOLUTION PROCESS BEGIN IN THE POINT OF EXIT OF DISLOCATION ON THE SURFACE OF CRYSTAL. LATER ON THE STEPS OF GROWTH ARE FORMED, WHICH QUANTITY AND SIZE ARE CONDITIONED BY THE STAGE OF ETCHING PROCESS. THE ROLE OF MICROSCOPIC POLYGONIZATION IN DISSOLUTION PROCESS OF THE INDICATED NATURAL CRYSTALS IS CONSIDERED. FACILITY: DAL'NEVOSTOCHNYY FILIAL SO AN SSSR, OTDEL KHIMII, VLADIVOSTOK.

UNCLASSIFIED

USSR

UDC: 621.372.061

MERCHAYLOV, M. I., PORTNOV, E. L.

"On Measurements and Analytical Determination of the Earth's Resistivity by the Four-Electrode Method"

Sb. nauchn. tr. TsNII svyazi (Collected Scientific Works of the Central Scientific Research Institute of Communications), 1970, vyp. 2, pp 113-124 (from RZh-Radiotekhnika, No 11, Nov 70, Abstract No 11A89)

Translation: The authors discuss the four-electrode method used in geophysics for measuring the apparent resistivity of the Earth where its structure is nonhomogeneous, and an analytical method for processing the results of measurements to obtain equivalent values of the Earth's resistivity which are necessary in the design of grounding devices and for calculating the effect of strong current lines on communications lines.

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USSR

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UDC 621.391.818

MIKHAYLOV, M. I., KALYUZHNYI, V. F.

"Protective Action of Smoothing Devices in High-Voltage D-C Transmission Lines in Electromagnetic Effects on Communication Lines"

Moscow, Elektrosvyaz', No 9, 1970, pp 24-28

Abstract: The high-voltage d-c transmission lines, used both in the Soviet Union and abroad, have nominal voltages between conductors of 200, 400 600, and 800 kv. They are designed to carry voltages of 1200 and 1500 kv over large distances, which means that low-frequency components at the outputs of converters connected to the line will affect communications lines in their neighborhood. To reduce the voltages of these low-frequency components, smoothing devices developed by the Leningrad Scientific Research Institute in the form of high-voltage chokes and low-frequency filters have been used. The effects of these smoothing devices are studied in this article. In computing the effects of the devices, the Volgograd-Donbas lines are used as examples.

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1/2 023 UNCLASSIFIED PROCESSING DATE--18SEP70
 TITLE--RADIOISOTOPE SCANNING OF THE LIVER IN THE RESTORATIVE PERIOD AFTER
 RESUSCITATION OF THE ORGANISM -U-
 AUTHOR-(04)-RADUSHKEVICH, V.P., MIKHAYLOV, M.M., KOSONOGOV, L.F., TELNOV,
 YU.A.
 COUNTRY OF INFO--USSR
 SOURCE--KHIRURGIYA, 1970, NR 4, PP 105-108
 DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
 TOPIC TAGS--RADIOISOTOPE, MEDICAL NUCLEAR APPLICATION, LIVER,
 RESUSCITATION, CLINICAL DEATH, IODINE ISOTOPE, TAGGED ATOM, ROSE BENGAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
 PROXY REEL/FRAE--1983/1217

STEP NO--UR/0531/70/000/004/0105/0109

CIRC ACCESSION NO--AP0054112
 UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--A0054112

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ARTICLE DEPICTS THE EXPERIENCE IN RADIOISOTOPE SCANNING OF THE LIVER OF THE RESUSCITATED ORGANISM WITH A DIFFERENT DURATION OF CLINICAL DEATH. A RADIOIODINE LABELLED SOLUTION OF BENGAL ROSE WAS INTRODUCED INTRAVENDOUSLY IN A DOSE OF 2 MUG-KG OF BODY WEIGHT. EXPERIMENTAL AND CLINICAL INVESTIGATIONS TESTIFY TO THE GREAT VALUE OF RADIOACTIVE SCANNING OF THE LIVER IN THE RESUSCITATED ORGANISM. SCANNING YIELDS ADDITIONAL INFORMATION ON THE CLINICO BIOCHEMICAL DATA FOR THE EVALUATION OF THE FUNCTIONAL CAPACITY OF THE LIVER.

UNCLASSIFIED

Neurophysiology

MIKHAYLOV, N. G.

CESSATION OF A NEGATIVE STIMULUS CAUSE ACTIVATION
OF THE BRAIN'S EMOTIONALLY POSITIVE ZONE

JPRS 57117
8 December 1971

UNC 612,022.3

Articles by N. G. Mikhaylov, N. A. Stepanov, and I. V. Simonov,
Institute of Higher Nervous Activity and Intellectual Deficiency, USSR
Academy of Sciences, Moscow; Moscow, Zoology Journal, 1968, 10: 353.
Russian, Vol 204, No 4, 1972, pp 1017-1020.

By I. P. Pavlov's definition reinforcement of a certain stimulus is an event that happens a hour simultaneously to the stimulus that it had not possessed previously. According to such a definition both factors indispensable to the lady (food) and a harmful, disturbing effect (pain) could act as reinforcement in the development of a conditioned reflex in equal measure. Research on instrumental conditioned reflexes has promoted repeatedly "punishment" that the animal tries to minimize, and biologically positive "reward" that the animal tries to maximize. Many authors treat brain structures, the stimulation of which an animal tries to avoid or, on the other hand, prolong by means of self-stimulation. As the dominant centers of those two afferent effects, there is a great deal of interest in the question of the degree to which cessation of a biologically negative stimulus could be regarded as a "reward." There is no single opinion on this matter in the literature. From the point of view of a number of authors reinforcement of instrumental protective reflexes is positive inasmuch as it involves the avoidance of pain. In other words inasmuch as it involves the avoidance of activation of the nervous machinery producing positive emotions. One of the ways to test this hypothesis experimentally is to study the functional states of structures that are stimulated by the animal itself during a negative stimulus and after it is turned off. There are some data in the literature on the effect of a reward stimulus on the functional state of positive centers of the right during stimulation. The contradictory nature of these data can apparently be explained by differences in stimulus intensity, different localizations of the positive

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USSR

UDC 621.378.325+621.374.22

BENEDIKTOV, G. L., MIKHAYLOV, N. I., Leningrad Electrical Engineering Institute

"Singularities of Producing Powerful Light Pulses of Complex Shape"

Moscow, Pribery i Tekhnika Eksperimenta, No 4, Jul/Aug 71, pp 187-189

Abstract: The paper deals with distinctive characteristics in synthesizing high-power square and back-to-back sawtooth light pulses and pulse packets by using flash lamps. An experimental study is made of the change in resistance of the lamps as a function of the shapes of current pulses. It is found that the shape of the light pulses corresponds fairly closely to the shape of the current pulses. Deviations are observed only on sections where there is an appreciable change in the resistance of the lamps. The effects of changes in lamp resistance and in the shape of light pulses may be accounted for in the first approximation by utilizing oscillograms of typical pulse shapes when designing circuits to produce light pulses of complex shapes.

1/1

1/2 039 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--PROPERTIES OF FILLERS FOR CONDUCTING PAINT AND VARNISH COATINGS
HARDENABLE IN A MAGNETIC FIELD -U-
AUTHOR-(03)-GUL, V.YE., SHCHIBRYA, N.G., NIKHAYLOV, N.I. *M*

COUNTRY OF INFO--USSR

SOURCE--LAKOKRASOCH. MATER. [KH. PRIMEN. 1970, (1) 49-52

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--ELECTRICAL CONDUCTIVITY, IRON POWDER, NICKEL POWDER, COPPER,
TITANIUM, MAGNESIUM, EPOXY RESIN, COPOLYMER, PAINT, VARNISH, PROTECTIVE
COATING, POLYVINYL CHLORIDE, CHEMICAL STABILITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1989/0547

STEP NO--UR/0303/70/000/001/0049/0052

CIRC ACCESSION NO--AP0107152

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--18SEP70

2/2 039

CIRC ACCESSION NO--AP0107152

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ELECTROLYTIC FE POWDER HAS 10
 PRIMES-10 PRIME6 OHM CM ELEC. RESISTANCE AND CANNOT BE USED AS FILLER
 FOR ELECTROCOND. COATINGS. NI POWDER PRODUCED BY THE CARBONYL PROCESS
 HAS SIMILAR TO 10 PRIME NEGATIVE1 TO 10 PRIME NEGATIVE3 OHM CM
 RESISTANCE AND GLOBULAR PARTICLE SHAPE SIMILAR TO 3 MU IN DIAM. IT
 CONTAINS SMALL AMTS. OF CU, BE, ZR, TI, AND MG AND IT IS MORE RESISTANT
 TO AIR OXIDN. THAN ELECTROLYTIC NI, THE PARTICLES OF WHICH HAVE DENDRITE
 FORMS AND 10-30 MU DIAMS. AN EPOXY CRESOL LACQUE OR A PARTIALLY
 SAPOND. VINYL ACETATE VINYL CHLORIDE COPOLYMER FILLED WITH 35-40PERCENT
 CARBONYL NI POWDER AND HARDENED IN A MAGNETIC FIELD HAS 10 PRIME
 NEGATIVE3 TO 10 PRIME NEGATIVE4 OHM CM ELEC. RESISTANCE.

UNCLASSIFIED

USSR

UDC 669.71.049.6

TKACHENKO, V. M., MIKHAYLOV, N. S., TSEYTLIN, L. A., MEIKULOVA, Ye. V.

"Corundum Packing Masses for Lining of a Reactor for the Subchloride Process of Distillation of Aluminum"

Tr. Vses. N-i. i Proyechn. In-ta. Alyumin., Magn. i Elektrodn. Prom-sti [Works of All-Union Scientific Research and Planning Institute of the Aluminum, Magnesium and Electrode Industry], 1970, No. 71, pp. 208-217. (Translated from Referativnyy Zhurnal Metallurgiya, No. 5, 1971, Abstract No. 5 G170, by the authors).

Translation: A literature review is presented, and the characteristics of corundum packing masses are given as functions of the addition of H_3PO_4 , H_3BO_3 , $Al(OH)_3$, TiO_2 , SiO_2 , $AlCl_3$, MgO . Compositions of these masses are developed with high contents of Al_2O_3 . They have high density, and strength and low residual volume changes following roasting. 2 figs; 3 tables; 11 bibliog refs.

1/1

USSR

UDC 518:517.9:533.011

IVANOV, M. Ya., KRAYKO, A. N., MIKHAYLOV, N. V., Moscow

"Method of 'Direct' Calculation for Two-Dimensional and Three-Dimensional Supersonic Flows. I"

Moscow, Zhurnal Vychislitel'noy Matematiki i Matematicheskoy Fiziki, Vol 12, No 2, Mar/Apr 72, pp 441-463

Abstract: The "direct" or "shock-capturing" method for calculating two-dimensional (plane and axisymmetrical) and three-dimensional supersonic flows of an inviscid, nonconducting gas is investigated. The basis of the method is a difference scheme which represents a steady-state analog of a known difference scheme proposed by S. A. Godunov for solving non-stationary problems in gasdynamics. The proposed method is not explicit and does not require special separation of shock waves, regions close to the angular points, and other singularities arising inside and on the boundaries of the region occupied by the flow. The method is very simple from the aspect of utilizing a computer, thus justifying its use in calculating both discontinuous and smooth flows. The efficiency of the method is illustrated in examples of calculating two-dimensional and three-dimensional flows. The accuracy of the calculation is controlled
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USSR

IVANOV, M. Ya., et al., Zhurnal Vychislitel'noy Matematiki i Matematicheskoy Fiziki, Vol 12, No 2, Mar/Apr 72, pp 441-463

by internal control methods and by a comparison with the results of a calculation by the characteristics method. All calculations were made on the M-220 computer. The programs were compiled in ALGOL-60 language for the TA-1M translator.

2/2

- 40 -

1/2 011 UNCLASSIFIED PROCESSING DATE--30OCT70
 TITLE--FORMULAS FOR EFFECTIVE VISCOSITY OF STRUCTURIZED LIQUIDS ALLOWING
 FOR THIXOTROPY -U-
 AUTHOR--(02)--OVCHINNIKOV, P.F., MIKHAYLOV, N.V.

COUNTRY OF INFO--USSR
 SOURCE--KELLOIDNYY ZHURNAL, 1970, VOL 32, NR 3, PP 409-415
 DATE PUBLISHED-----70

M

SUBJECT AREAS--CHEMISTRY
 TOPIC TAGS--FLUID VISCOSITY, THIXOTROPE, FLUID STRUCTURE

CONTROL MARKING--NO RESTRICTIONS
 DOCUMENT CLASS--UNCLASSIFIED
 PROXY REEL/FRA--2000/1584
 STEP NO--UR/0069/70/032/003/0409/0415
 CIRC ACCESSION NO--AP0125206
 UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--30OCT70

2/2 011

CIRC ACCESSION NO--AP0125206

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. FORMULAS IN USUAL AND BINOMIAL FORMS HAVE BEEN DEDUCED WHICH EXPRESS THE EFFECTIVE VISCOSITY OF STRUCTURIZED LIQUIDS IN TERMS OF THE BREAKDOWN EXTENT AND THIXOTROPIC REFORMING OF THE STRUCTURE. THE KNOWN BINOMIAL FORMULAS ARE COMPARED WITH THE ONE SUGGESTED.

FACILITY: INSTITUT FIZICHESKOY KHIMII

AN SSSR, MOSCOW.

UNCLASSIFIED

1/2 010 UNCLASSIFIED PROCESSING DATE--30OCT70
 TITLE--FREEZING OF WATER SORBED BY CEMENT STONE -U-
 AUTHOR--(02)--BYKOV, V.M., MIKHAYLOV, N.V. M
 CCUNTRY OF INFO--USSR
 SOURCE--KOLLOIDNYY ZHURNAL, 1970, VOL 32, NR 3, PP 342-346
 DATE PUBLISHED-----70
 SUBJECT AREAS--MATERIALS
 TOPIC TAGS--FREEZING, WATER, CEMENT
 CCNTRGL MARKING--NO RESTRICTIONS
 DOCUMENT CLASS--UNCLASSIFIED
 PROXY REEL/FRA--2000/1657 STEP NO--UR/0069/70/032/003/0342/0346
 CIRC ACCESSION NO--AP0125279
 UNCLASSIFIED

2/2 010

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125279

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PROPERTIES OF WATER SORBED BY CEMENT STONES MADE FROM DIFFERENT CEMENTS HAVE BEEN STUDIED. SPECIFIC PROPERTIES OF SORBED WATER MANIFEST THEMSELVES IN ITS SORPTION AND FREEZING PROCESSES. ADSORPTION BOUND WATER DOES NOT FREEZE EVEN WHEN COOLED DOWN TO MINUS 110DEGREES. FACILITY: INSTITUT FIZICHESKOY KHMII AN SSSR, MSCOW.

UNCLASSIFIED

1/2 036 UNCLASSIFIED PROCESSING DATE--27NOV70
 TITLE--EFFECT OF STRUCTURE FORMING SUBSTANCES ON THE CHEMICAL AND
 THERMOMECHANICAL PROPERTIES OF A CELLULOSE HYDRATE FIBER -U-
 AUTHOR-(05)-MIKHAYLOV, N.V., TOKAREVA, L.G., TEREKHOVA, G.M., MANDROSOVA,
 F.M., PANOVA, L.N.
 COUNTRY OF INFO--USSR

M

SOURCE--KHIM. VOLOKNA 1970, (2), 37-9

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--CELLULOSE RESIN, SYNTHETIC FIBER, DIAMINE, PHIPHALATE, FILLER,
 PIGMENT, THERMOMECHANICAL PROPERTY, FATIGUE STRENGTH

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
 PROXY REEL/FRAME--3008/0873

STEP NO--UR/0183/70/000/002/0037/0039

CIRC ACCESSION NO--AP0137901

UNCLASSIFIED

2/2 036

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0137901

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CELLULOSE (I) FIBERS WERE MODIFIED WITH A NO. OF N, S, AND P CONTG. ADDITIVES. I FIBERS MODIFIED WITH 0.4-0.5PERCENT SV 1 COMPN. (A CONDENSATION PRODUCT OF N,N PRIME DI,BETA,NAPHTHYL P,PHENYLENEDIAMINE AND AMMONIUM DIAZOPHTHALATE), 0.6PERCENT CARBON BLACK, AND 0.2PERCENT BLUE OR YELLOW PIGMENTS EXHIBITED SUPERIOR FATIGUE STRENGTH AND OXIDATIVE DEGRADATION RESISTANCE.

UNCLASSIFIED

1/2 029 UNCLASSIFIED PROCESSING DATE---30OCT70
TITLE---EFFECT OF ZINC SULFATE ON THE FORMATION AND PROPERTIES OF A
POLYNOVIC FIBER -U-
AUTHOR-(04)-BOCHKINA, V.S., NIKOLAYEVA, N.S., MOGILEVSKIY, YE.M.,
MIKHAYLOV, N.V.
COUNTRY OF INFO---USSR
SOURCE---KHIM. VOLOKNA 1970, (2), 46-9
DATE PUBLISHED-----70
SUBJECT AREAS---MATERIALS
TOPIC TAGS---ZINC COMPOUND, SULFATE, COAGULATION, SYNTHETIC FIBER, TENSILE
STRENGTH, ELONGATION
CONTROL MARKING---NO RESTRICTIONS
DOCUMENT CLASS---UNCLASSIFIED
PROXY REEL/FRAE---2000/0832 STEP NO---UR/0183/70/000/002/0046/0049
CIRC ACCESSION NO---AP0124499
UNCLASSIFIED

PROCESSING DATE--30OCT70

UNCLASSIFIED

2/2 029

CIRC ACCESSION NO--AP0124499

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE INCREASE OF ZNSO SUB4 CONC. FROM 0-0.6 G-L. IN THE COAGULATING BATH INCREASES THE POLYDASIC FIBER TENSILE STRENGTH AT BREAK (SIGMA) AND ITS ELONGATION AT BREAK (EPLISON). THE CONTINUING INCREASE OF ZNSO SUB4 CONC. ABOVE 6 G-L. LEVEL DECREASES SIGMA BUT INCREASES EPLISON. THE ADDN. OF 1.5PERCENT (ON ALPHA CELLULOSE) POLY(ETHYLENE GLYCOL) MODIFIER TO THE VISCOSE HAS NO EFFECT ON THE CHANGES OF EPLISON AND SIGMA WITH ZNSO SUB4 CONC. THESE EFFECTS ARE ASSOCD. WITH PH CHANGES OF THE COAGULATING BATH AND THE CHANGED CONCNS. OF ZNS AND ZNSO SUB4.

UNCLASSIFIED

USSR

M UDC: 546.212:539.217.1

BYKOV, V. M., and MIKHAYLOV, N. V., Institute of Physical Chemistry,
Moscow, Academy of Sciences USSR

"Freezing of Water Adsorbed in Cement Stones"

Moscow, Kolloidnyy Zhurnal, Vol 32, No 3, May-Jun 1970, pp 342-346

Abstract: Phenomena related to the freezing of adsorbed water in cement (concrete) stones are of importance from the standpoint of the durability of these stones as a construction material. By applying dilatometric and calorimetric measurements, the process of freezing of water in cement stones produced by two industrial plants was studied. It was established that on saturation of the pore surface of the stones with water only water that was present because of capillary condensation (approximately 50% of the total) was capable of freezing. Its freezing took place at temperatures above minus 50°. Adsorption-bound (chemisorbed) H₂O did not freeze even at minus 110°.

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Acc. No. AP0036534

Ref. Code: UR 0069

PRIMARY SOURCE: Kolloidnyy Zhurnal, 1970, Vol 32, Nr 1,
pp 87-90

STUDY OF THE VARIATION WITH TIME OF THE VIBROVISCOSITY
OF STIFF CONCRETE MIXES

Radvinskiy, B. M.; Mikhaylov, N. V.; Vorob'nev, Yu. L.

Summary

The variation with time of stiff concrete mixes has been studied. The curves obtained show a maximum coinciding with the end of the period of the development in the mix of the coagulation structure of cement paste.

D. n .

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REEL/FRAME
19721382

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Acc. No: **036537**

M

Ref. Code: UR 0069

PRIMARY SOURCE: Kolloidny Zhurnal, 1970, Vol. 32, Nr 1,
pp 110 - 116

**THE EFFECT OF VIBRATION ON THE BONDING OF SOLID SURFACES BY
HIGH-LOADED POLYMER ADHESIVES**

Ur'yev, N. B.; Mikhaylov, N. V.

Summary

The rheological properties of epoxy-resins heavily extended with a fine-dispersed quartz filler have been studied in a steady laminar flow and under the action of vibration. The effective viscosity of the systems studied has been found to decrease sharply under the action of vibration due to the breaking up of the conglomeration structure formed by the filler. The effect of vibration is accompanied by increase in the monomer polymerization rate and a higher adhesive strength of the bonds between steel samples.

D. A.

41

REEL/FRAME
19721385

7

Acc. Nr: **AP0036531**

Ref. Code: UR 0069

PRIMARY SOURCE: Kolloidnyy Zhurnal, 1970, Vol 32, Nr 1,
pp 74-77

**ON THE STRUCTURE AND RHEOLOGICAL PROPERTIES
OF AQUEOUS EMULSIONS OF POLYETHYLENE TEREPHTHALATE**

Mikhaylov, N. V.; Sharay, T. A.; Khavkina, B. L.; Arsen'yev, A. N.

Summary

A study has been made of the rheological properties of aqueous suspensions of polyethylene terephthalate (PETPH) stabilized with rosin soap as well as of some compositions consisting of PETPH dispersion and a polymer thickener-polyvinyl alcohol. The viscosity of the compositions has been found to be much higher (30--100 times) than those of its components. A mechanism of structure formation in compositions has been suggested. An empirical linear equation $\eta=f(P)$ in a logarithmic form is given and some assumptions are made regarding the physical significance of the constants in these equations.

D.H.

REEL/FRAME
19721379

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MIKHAYLOV, N.

Report, October 25, 1973

20H12256/3
9

Prof. N. N. Mikhaylov
Professor Mikhaylov describes briefly
the series and possible applications of sand
concrete.
L. N. P. 1973
Copy Received Oct 27 1973

D-1

It is well known that strength can be attained at the price of deformability and in no material, especially concrete, is a lack of deformability an absolute advantage. We should be so fortunate that we have a material which is strong in strength and also in deformability. The concrete we have been talking about is sand concrete, namely packed, having no bearing on sand and aggregate, which is filled with organic fibers. The fibers are of the length of the order of millimeters and are placed in the concrete in the form of bundles of which they are composed. The fibers at the same time increase the strength of the concrete and reduce its brittleness. The fibers are obtained by starting a process of separating the sides of fibers of organic origin from their centers; produce independent fibers. The sides of fibers will then become independent as follows: a process will be carried out in a way similar to the way of breaking the sides of fibers in order to get the fibers broken in the form of a pile of the fibers. The fibers are broken at its tendency to separate itself from the broken stone.

Recent work regarding the role of fiber in concrete is used very fully at present. Unfortunately with a 50 per cent increase in strength at present, and with separate articles are taking place (and the process of adoption, hence, expensive cement is part of the process of adoption. Thus, we come to recognize the need of a more effective cement. It was formerly believed that sand in concrete played an active role in the process of the USSR Academy of Sciences have shown that the application of fine-grained sand makes it possible to achieve an economy of cement and to improve its adhesive qualities.

RESEARCH REPORT 3-1-68

Standard, in general, in the absence of all factors, in the
the air flow regime in the absence of all factors, in the
presence, there is no effect for similar capacity and
density packed stone or concrete.

But don't we say that a grain which has a great deal
about a number of small grains, such a grain is not
from a point of the paper link, it is necessary that this
will determine the direction of the grain as a whole. Although
this analogy is not correct, it is not correct.
The grain is not a point, it is a point and a point is
we shall get back to this later.

Now, we have before us a freely formed concrete, a fine
sand and a large amount of water. The grain is not a point
stone, vibrating in the air, it is a point and a point is
remain is to mix the compound evenly. We shall obtain
a very strong sand concrete.

But this cannot be done by means of the grain
The very same vibrating screen will give a grain
stone, vibrating in the air, it is a point and a point is
remain is to mix the compound evenly. We shall obtain
a very strong sand concrete.

That is to be done in it a definite way, it is
now science--physico-chemical, generally developed by
scientists using a ray of light, the grain is not a point
stone, vibrating in the air, it is a point and a point is
remain is to mix the compound evenly. We shall obtain
a very strong sand concrete.

Vibration is not a novelty in the concrete making process
It has been used already for some years, but recently
just an attempt to reproduce the old technology.
Vibration is used at all the stages of concrete making.

At first, cement and sand are ground by vibrating, then
the mixture is stirred in vibrators. After that, the
of concrete prevents it from thickening and improves its
mobility. Finally, the placing and finishing of concrete structure
is also performed with the aid of vibration.

How do we have come close to a new science created in our
laboratory--vibrational technology? This science is expected to give
what frequencies and amplitudes should be used and how and
should concrete mixture be subjected to the effect of vibration.

The presence of admixture of the concrete mixture, which contains a certain amount of water, does not prevent the use of admixtures, however, the use of admixtures (water-reducing admixtures) is not recommended.

The admixture of admixtures in concrete has already been used in the USSR for a long time. It is a well-known fact that admixtures are used in the production of concrete for the construction of various structures. The admixture of admixtures in concrete is a well-known fact that admixtures are used in the production of concrete for the construction of various structures.

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The admixture of admixtures in concrete has already been used in the USSR for a long time. It is a well-known fact that admixtures are used in the production of concrete for the construction of various structures. The admixture of admixtures in concrete is a well-known fact that admixtures are used in the production of concrete for the construction of various structures.

Memorandum, October 29, 1977

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This new form of organization of a research establishment which combines basic research on the Academy level with the application of findings into high industrial production corresponds to the policy of further development of science adopted by the 24th CPSU Congress and promotes higher rates of scientific and technological progress.

(Enclosed, October 9, in full.)

Pharmacology and Toxicology

USSR

UDX: 577.1:615.7/9

MIKHAYLOV, N. Ye., IVAKHNIKOVA, I. G., VOLGINA, A. V., and SHUKOVA, I. A.

"Action of Methyl Ester of Acrylic Acid on an Organism After Inhalational Administration"

Materialy Nauchn. konferentsii po vopr. gigiyeny i profpatol. v khim. prom-
sti--Sbornik (Materials of the Scientific Conference on Problems of Hygiene and
Occupational Pathology in the Chemical Industry -- Collection of Works), Saratov,
1970, pp 41-43 (from Referativnyy Zhurnal -- Biologicheskaya Khimiya, No 7,
10 Apr 71, Abstract No 7F2391)

Translation: A study was made of the activity in blood of cholinesterase,
catalase, and the content of SH-groups, G-SH, and Hb in rats subject to
inhalational intoxication with the methyl ester of acrylic acid (I; 5-50 mg/m³;
4 hours). The activity of cytochrome oxidase was determined after seven months
in liver and brain homogenates, while the activity of succinate hydrogenase
was determined in liver homogenates. Determinations were also made of the
vitamin C and cholesterol concentrations in blood serum. The toxic effect of I
at a concentration of 50 mg/m³ was shown; reduced redox reactions and threshold
effect on the gonads was observed at a concentration of 20 mg/m³. Concentra-
tions of 10 and 5 mg/m³ were not toxic.
1/1

USSR

UDC 669.71.472

MIKHAYLOV, P. M., KULAKOV, A. I., KASHKO, Yu. G., FORSHLOM, G. V.

"Basic Conditions of Modeling of Gas Hydrodynamics in Aluminum Electrolyzers"

Tr. Vses. N-i. i Proyechn. In-ta. Alyumin., Magn. i Elektrodn. Prom-sti [Works of All-Union Scientific Research and Planning Institute of the Aluminum, Magnesium and Electrode Industry], 1970, No. 71, pp. 94-110. (Translated from Referativnyy Zhurnal Metallurgiya, No. 5., 1971, Abstract No. 5 G157 by the authors).

Translation: Based on the theory of similarity, gas hydrodynamics similarity criteria in aluminum electrolyzers are developed considering the mechanism of gas formation on the anode. The provision of similarity conditions on models of decreased size is practically impossible. However, the problem is simplified when limiting modes of typical bubble or film flow of anode gases are studied. Furthermore, investigations can be performed using models of individual aspects of gas hydrodynamics, for example, studies of the flow of anode gases and melt in the central areas of the electrolyzer, the circulation of melt between anode and bath side, etc. 6 biblio refs.

1/1

Instruments and Equipment

USSR

MIKHAYLOV, R. K., NARUZHNYI, B. V., and SINENKO, S. F., Leningrad. "Krasnogvardets"
Plant

"Multichannel Electronic Diagnostic Apparatus"

Moscow, Meditsinskaya Tekhnika, No 6, 1970, pp 33-35

Abstract: A brief description is given of the following electronic apparatus now under development at the Leningrad "Krasnogvardets" Plant, the country's oldest manufacturer and designer of medical equipment: (i) Physiograph (model 068) capable of simultaneous recording of electrocardiograms, phonocardiograms, pulse rate, body temperature, oxyhemograms, tacho-oscillograms, and so forth; (ii) ELKAR electrocardiograph with ink or thermal recording of electrocardiograms, based on the modular-cassette principle, with attachments to permit pneumography, phonocardiography, and plethysmography, stethophone, and oscilloscope for observation of the processes being recorded; (iii) Poligraf (model 071), incorporates the features of many foreign diagnostic machines, with interchangeable units for recording oxyhemograms, plethysmograms, pneumograms, sphygmograms, cardioidensigrams to show total cardiac output), thermograms, pO₂, and pCO₂; (iv) bed monitors to record arterial pressure, pulse rate, respiratory rate, and body temperature;

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USSR

MIKHAYLOV, R. K., et al, Meditsinskaya Tekhnika, No 6, 1970, pp 33-35

(v) devices for recording hemodynamic indices (an arterial oscillograph with photorecording is now in production).

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1/2 008 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--SKELETAL ISOMERIZATION DURING ISOPENTANE DEHYDROGENATION IN A
FLUIDIZED BED OF K 5 CATALYST -U-
AUTHOR--MIKHAYLOV, R.K., BUSHIN, A.N., TYURYAYEV, I.YA., KHRIPINA, S.M.
COUNTRY OF INFO--USSR M
SOURCE--KHIM. PROM. (MOSCOW) 1970, 46(1) 3-7
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--FLUIDIZED BED, ISOMERIZATION, ISOPENTANE, CATALYTIC
DEHYDROGENATION, PENTANE, PENTENE, CATALYST/IUK5 CATALYST
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1985/1451 STEP NO--UR/0064/70/046/001/0003/0007
CIRC ACCESSION NO--AP0101537
UNCLASSIFIED

PROCESSING DATE--11SEP70

UNCLASSIFIED

2/2 008

CIRC ACCESSION NO--A0101537

ABSTRACT. DEHYDROGENATION OF ISOPENTANE IN AN 8 SECTION FLUIDIZED BED APP. WITH K 5 CATALYST WAS CARRIED OUT AT LARGER THAN OR EQUAL TO 580DEGREES WITH FLOW RATE 120 VOL%.-HR. PRETREATMENT OF THE CATALYST BY HEATING TO 640 TO 500DEGREES IN BUTANE OR "ABGAS" (70 VOL. PERCENT H₂, 2PERCENT CO, 13PERCENT N₂, BALANCE C SUB1- C SUB5 HYDROCARBONS) INCREASED THE YIELD OF ISOPENTENES, E.G. FROM 30 TO 35PERCENT AT 580DEGREES, AND ALSO INCREASE THE YIELD OF PIPERYLENE FROM 3.5 TO 4.5PERCENT BUT HAD NO EFFECT ON THE YIELD OF 1,2,PENTENE (SIMILAR TO 1PERCENT). THE RATIO OF 1,PENTENE TO 2,PENTENE IN THE PRODUCT WAS 1:3 TO 5. SMALL AMTS. N,PENTANE WERE ALSO FORMED IN THE REACTION AND ADDN. OF 5 TO 7PERCENT N,PENTANE TO THE STARTING ISOPENTENE SUPPRESSED ALMOST COMPLETELY THE ISOMERIZATION OF THE ISOPENTENE, ALTHOUGH THE MECHANISM OF THIS EFFECT IS NOT CLEAR. THE RATIO OF 2, METHYL, 2, BUTENE, 2, METHYL, 1, BUTENE, N, PENTENES IN THE PRODUCT (OBTAINED BY USING THE PRETREATED CATALYST) WAS 100:60:14:13.

UNCLASSIFIED

USSR

UDC 534.21

MIKHAYLOV, R. N., TARTAKOVSKIY, B. D., Acoustics Institute,
Academy of Sciences, USSR, Moscow

"Concerning the Anomaly of Three-Dimensional Attenuation in Thin-
Walled Cylindrical Shells"

Moscow, Akusticheskiy Zhurnal, Vol 16, No 4, 1970, pp 554-557

Abstract: A study is made of the frequency relationship of the three-dimensional attenuation coefficient of various normal waves of the flexural type in the range of transition from oscillation of the "body" type to that of the "shell" type for closed and open cylindrical shells. An anomalously large three-dimensional attenuation was attained in the frequency range under consideration. Various normal waves are considered, and it is shown that the effect decreases as the number of the normal wave increases. 3 figures, 3 bibliographic entries.

1/1

USSR

UDC 534.833.522.4;534.213.4

GEL'FGAT, V. I., GUEHAS, D. R., ~~MIRHAYLOV, F. N.~~, and
TARTAKOVSKIY, B. D., Acoustic Institute of the Academy of Sciences USSR, Moscow

"Sound Insulation of a Closed Cylindrical Shell by Inside Excitation"

Moscow, Akusticheskiy Zhurnal, Vol 17, No 4, 1971, pp 545-549

Abstract : The sound insulation of a cylindrical shell on low frequencies by axisymmetric inside excitation and propagation of normal waves excited within the shell is investigated. Formulas are derived characterizing the sound insulation of the cylindrical shell for diffusion sound and normal waves. The calculated dependence of the diffusion sound insulation on the frequency, for $h/R=0.03$ and $h/R=0.003$ (where: R = radius of the cylinder and h =wall thickness of the cylinder), is shown. An experimental proof of the formulas conducted on tubes, 6 m long and 219 mm in diam., wall thickness 2mm and 8 mm, revealed a good agreement with the calculation. It was found that the sound insulation of the shell on low frequencies exceeds considerably the sound insulation of a plate of the same thickness. With increasing frequency the sound insulation decreases and coincides with the sound insulation of a plate on high frequencies. Four illustr., 14 formulas, six biblio. refs.

1/1

USSR

UDC: 537.312.62

BAYKOV, A. I., KLEYN, G. A., GORBACHEVA, L. S., ALIMOVA, R. N., MIKHAYLOV, S. M., LITVINOVA, I. I., BEREZIN, R. G.

"Investigation of Some Properties of the Ternary Alloy SS-2 in the Process of Deformation and Vacuum Annealing"

Moscow, Sverkhprovodyashchiye splavy i soyedin.--sbornik (Superconductive Alloys and Compounds---collection of works), "Nauka", 1972, pp 157-160 (from RZh-Radiotekhnika, No 12, Dec 72, abstract No 12D563 [résumé])

Translation: A series of experiments is done to determine the influence of intermediate annealing on the technological, mechanical, electrical and structural properties of wire made from SS-2 alloy, which is a member of the niobium-titanium-zirconium ternary system. The resultant data show that intermediate annealing embrittles SS-2 wire to a greater extent as the diameter of the wire decreases and the annealing temperature increases. X-ray structural analysis showed that there is no change in phase composition of the alloy under the given annealing conditions; all specimens have the structure of a β -solid solution with lattice parameter $a = 0.325$ nm. An examination of powder patterns obtained from annealed wire of all diam-

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USSR

BAYKOV, A. I. et al., Sverkhprovodyashchiye splavy i soyedin.--sbornik,
"Nauka", 1972, pp 157-160

eters showed that the temperature for beginning of recrystallization of
all diameters of wire is the same -- 700°C. Further annealing increases
grain size, an especially intensive increase in grain size being observed
at annealing temperatures of 1000 and 1100°C. One illustration, bibliog-
raphy of six titles,

2/2

- 139 -

USSR

UDC 669.295.5.018.5.537.312.62

BAYKOV, A. I., KUZNETSOVA, M. I., SHADSKIY, D. V., MEL'NIKOVA, L. V., MIKHAYLOV, S. M., GORBACHEVA, L. S.

"Technological and Superconducting Properties of 60 T Alloy"

Probl. Sverkhprovodyashch. Materialov [Problems of Superconducting Materials -- Collection of Works], Moscow, Nauka Press, 1970, pp. 193-202. (Translated from Referativnyy Zhurnal Metallurgiya, No. 5, 1971, Abstract No. 5 1791 by the authors).

Translation: The technological and superconducting properties of 60 T alloy are studied. The dependence of mechanical properties on the degree of cold deformation and diameter of wire is shown. The mechanism of deformation of the alloy at high temperatures is studied. It is established that the high plastic properties of the alloy allow cold drawing of wire to be performed at a rate of 100 m/min. The influence of intermediate annealing and hardening, as well as final annealing, on the critical current density is studied as a function of the external magnetic field. 7 figs; 4 tables; 4 biblio refs.

1/1

USSR

UDC 669.28.172

BULGAK, L. V., SAVITSKIY, Ye. M., BELONYTTSEV, Yu. S., SARATOVSKIY, L. N.,
PAVLOVICH, T. M., and MIKHAYLOV, S. M.

"Study of Structure and Properties of Molybdenum Single Crystals Produced
Under Oilless Vacuum Conditions"

Monokristally Tugoplavkikh i Redkikh Metallov [Single Crystals of Refractory
and Rare Metals -- Collection of Works], Nauka Press, 1971, pp 67-70

Translation: Data are presented on the mechanical properties and structure
of monocrystalline molybdenum, produced under oilless vacuum conditions by
cathode ray zone refining. 1 Table; 4 Figures; 2 Bibliographic References.

1/1

- 48 -

USSR

UDC 669-172:541.12.036

KLEYN, G. A., OSIPOVA, L. Kh., GRISHKOV, G. N., MIKHAYLOV, S. M., and VOLKOV, O. V.

"Effect of Temperature on the Physical and Mechanical Properties of Oriented Molybdenum Single Crystals"

Monokristally Tugoplavkikh i Redkikh Metallov [Single Crystals of Refractory and Rare Metals -- Collection of Works], Nauka Press, 1971, pp 153-158

Translation: A study was made of the effect of temperature (1,000°C) on the anisotropy of the physical and mechanical properties of molybdenum single crystals grown in the [001], [110], [111], and [112] directions. 3 Tables; 3 Figures; 8 Bibliographic References.

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USSR

UDC 669.28.054.2.546.21

GARAYEVA, A. A., MIKHAYLOV, S. M., PETUSHKOV, Ye. Ye., NAVALIKHIN, L. V.,
and TALANIN, Yu. N.

"Determination of Oxygen in Molybdenum Single Crystals"

Monokristally Tugoplavkikh i Redkikh Metallov [Single Crystals of Refractory
and Rare Metals -- Collection of Works], Nauka Press, 1971, pp 47-49

Translation: Activation analysis using fast neutrons was used to study the
distribution of oxygen in molybdenum single crystals produced by crucibleless
zone melting, allowing the change in concentration of impurities with increas-
ing number of passes of the zone to be determined. The errors in measurement
due to surface oxygen were determined. It was found that purification of the
surface of the specimens can be performed by bombardment with electrons.
Electrolytic etching at low oxygen contents is a less acceptable method of
purification. 1 Figure; 4 Bibliographic References.

1/1

USSR

UDC 669-172:539.2

KLEYN, G. A., MIKHAYLOV, S. M., KRAKHALEV, V. A., and GRISHKOV, G. K.

"Substructure of Oriented Single Crystals of Molybdenum of Increased Size Produced by the Zone Growth Method"

Monokristally Tugoplavkikh i Kedkikh Metallov [Single Crystals of Refractory and Rare Metals -- Collection of Works], Nauka Press, 1971, pp 63-66

Translation: The substructure of monocrystalline bars of molybdenum 25 mm in diameter produced by the method of zone growth is studied. X-ray analysis using a narrow and broad beam is used to show that in the process of growth decrystallographic orientation of the single crystals is not changed. The substructure of these single crystals is homogeneous and in equilibrium, with the exception of the outer surface layers, in which the mosaic blocks are finer. Disorientation of the blocks of thick single crystals averages 10-40 min. The microhardness in the transverse cross section of the single crystals is constant in value and increases only slightly near the external surface of the single crystals. 4 Figures.

1/1

USSR

UDC 669-172:541.12.03

SMIRNOVA, N. B., SMIRNOV, B. G., MIKHAYLOV, S. M., SHUMPEE, G. N., and GRISHKOV, G. N.

"Thermoelectronic Emission of Faces of a Single Crystal of MR-27 Alloy"

Monokristally Tugoplavkikh i Redkikh Metallov [Single Crystals of Refractory and Rare Metals -- Collection of Works], Nauka Press, 1971, pp 78-81.

Translation: The thermoelectronic parameters of the (110), (100), and (111) faces of a single crystal of MR-27 alloy (Mo + 2% Re) are measured at various stages of heat treatment; values are produced for work function ϕ and Richardson constant A_{eff} . 1 Table; 4 Figures; 5 Bibliographic References.

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USSR

UDC: 537.312.62

2

BAYKOV, A. I., KUZNETSOVA, M. I., SHADSKIY, D. V., MEL'NIKOVA, L. V., MIKHAYLOV, S. M., GORBACHEVA, L. S.

"Technological and Superconducting Properties of 60T Alloy"

V sb. Probl. sverkhprovodnykh materialov (Problems of Superconducting Materials--collection of works), Moscow, "Nauka", 1970, pp 193-202 (from RZh-Radiotekhnika, No 5, May 71, Abstract No 5E555)

Translation: This article deals with the technological superconducting properties of 60T alloy. It is shown how the mechanical properties depend on the degree of cold deformation and the diameter of the wire. The mechanism of deformation of the alloy at high temperatures is considered. It is found that the high plastic properties of the alloy permit cold drawing of wire at a rate of 100 m/min. An investigation is made of the effect which intermediate annealing and quenching as well as final annealing have on the density of the critical current as a function of the external magnetic field. Seven illustrations, four tables, bibliography of four titles. Resumé.

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UDC 669.293.5:669.295.5

2

USSR

BAYKOV, A. I., KUZNETSOVA, M. I., SHADSKIY, D. V., MEL'NIKOVA, L. V.,
MIKHAYLOV, S. M., and BORICHEVA, L. S.

"Technological and Superconducting Properties of 60T Alloy"

Problemy Sverkhprovodyashchikh Materialov [Problems of Superconducting
Materials -- Collection of Works], Moscow, Nauka Press, 1970, pp 193-202

Translation: The article studies the technological and superconducting pro-
perties of 60T alloy. The dependence of mechanical properties on the degree
of cold deformation and diameter of the wire is demonstrated.
The mechanism of deformation of the alloy at high temperatures is
studied. It is established that the high plastic properties of the alloy
allow cold drawing of wire at 100 m/min. The influence of intermediate
annealing and hardening and of final annealing on critical current density
as a function of external magnetic field is studied.
7 figures, 4 tables, 4 biblio. refs.

1/1

1/2 025 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--THERMAL EMISSION PROPERTIES OF 100 FACES OF SINGLE CRYSTALS OF
IRIDIUM, OSMIUM, AND RHENIUM SOLID SOLUTIONS IN TUNGSTEN -U-
AUTHOR-(04)-SMIRNOVA, N.B., SMIRNOV, B.G., MIKHAYLOV, S.M., SHUPPE, G.N.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TVERD. TELA 1970, 12(4), 1277-9

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--METAL SINGLE CRYSTAL, IRIIDIUM ALLOY, OSMIUM ALLOY, RHENIUM
ALLOY, TUNGSTEN ALLOY, SOLID SOLUTION, WORK FUNCTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3001/0486

STEP NO--UR/0181/70/012/004/1277/1279

CIRC ACCESSION NO--AP0126238

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--20NOV70

2/2 025

CIRC ACCESSION NO--AP0126238

ABSTRACT/EXTRACT--(U) OP-0-- ABSTRACT. THE THERMAL EMISSION FROM THE (100) FACES OF SINGLE CRYSTAL SOLID SOLNS. IN W OF THE FOLLOWING METALS WAS STUDIED: RE (1 ATOM PERCENT), OS AND IR (2 ATOM PERCENT). HEATING OF W-IR2 CRYSTAL AT HIGH TEMPS. (2050-2000DEGREEK), DR 20-30 HR LEADS TO THE APPEARANCE OF THE RICHARDSON CURVES OF 2 SECTIONS THAT ARE SHARPLY DIFFERENT IN SLOPE. AT 1800-2030DEGREEK, PHI SUBR EQUALS 4.54 EV, A SUB4 EQUALS 6 A-CM PRIME2 DEGREE PRIME2, AND AT 2000-2000DEGREEK PHI SUB4 EQUALS 5.28 EV, A SUB4 EQUALS 250 A-CM PRIME2 DEG PRIME2. THE LOW W ATCM. IF THE CRYSTAL IS HEATED AT 1900DEGREEK FOR 15 HR THE RICHARDSON CURVE CHANGES INTO A STRAIGHT LINE WITH PHI SUB4 EQUALS 5.30 EV AND A SUBR EQUALS 420 A-CM PRIME2 DEGREE PRIME2. TEMP. DEPENDENCE OF THE WORK FUNCTION FOR W-OSL ALLOY AT 1700-2380DEGREEK INDICATES 2 SECTIONS: FOR 1700-2030DEGREEK PHI SUBR EQUALS 4.57 EV, A SUBR EQUALS 10 A-CM PRIME2 DEGREE PRIME2, FOR 2080-3000DEGREEK, PHI SUBR EQUALS 5.12 EV, A SUBR EQUALS 190 A-CM PRIME2 DEGREE PRIME2. THE VALUE OF 4.57 EV CHARACTERIZES THE SECTIONS OF (100) FACE PACKED WITH W ATOMS.

FACILITY: TASHKENT. GOS. UNIV. IM. LENINA, TASHKENT, USSR.

UNCLASSIFIED

USSR

UDC 542.91+541.69:547.1'118

ABDURAKHABOV, A. A., GODOVIKOV, N. N., KABACHNIK, M. I., KREVEROVA, L. S., MIKHAYLOV, S. S., and ROZENGART, V. I., Institute of Heteroorganic Compounds, Academy of Sciences USSR, and First Leningrad Medical Institute imeni I. P. Pavlov

"Reaction of O-n-Alkyl S-(β -ethylmercaptoethyl) Methylthiophosphonates and Their Methylsulfomethylates With Acetylcholinesterase"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 5, May 72, pp 1169-1172

Abstract: The authors studied the reaction of acetylcholinesterase with O-n-alkyl S-(β -ethylmercaptoethyl) methylthiophosphonates and their methylsulfomethylates to determine whether there is a hydrophobic site in the region of the esterase center of this enzyme. It was found that there is one hydrophobic site in the immediate vicinity of the esterase center of AChE, with alkyl radicals of the alkoxyl group sorbed at this site. The overall extent of this site corresponds to the n-butyl radical. The ability of these compounds to react with AChE depends to a considerable extent on their sorbability on the enzyme active surface, both through hydrophobic interactions and through ionic sorption.

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MIKHAYLOV, S. S.

JPRS 55341
6 JUL 70

UDC: 611.127:611.831.014.477-019

THE EFFECT OF TRANSVERSE G FORCES ON ATRIAL NERVE CELLS (EXPERIMENTAL MORPHOLOGICAL INVESTIGATION)

[Article by S.S. Mikhaylov, V.M. Klebanov, S.I. Yevloyev, Chair of Normal and Topographic Anatomy (headed by Professor S.S. Mikhaylov), Moscow Medical Stomatological Institute, and Chair of Operative Surgery (headed by Docent V.H. Klebanov), Isehnograd Medical Institute; Leningrad, Arkhiv Anatomii, Gistologii i Embriologii, Russian, No 11, 1971, submitted 28 January 1971, pp 37-47]

In view of the successful development of space medicine in the last decade, one of its special directions, space morphology, is beginning to form. A great achievement in this direction consisted of the numerous investigations of changes in the vascular system occurring under the influence of gravitational stress performed under the supervision of M.G. Privas (1963, 1970). Some interesting studies were made of the effect of G forces on cells and organs (V.G. Yeliseyev, 1956, 1966; Yu.M. Kopayev, 1963, 1967; V.G. Petrushin, 1962, 1967; L.S. Surutov, 1970, and others).

However, to date, there have been relatively few studies of changes in the nervous system following accelerations, the possibility of developing tolerance and adaptation to gravitational stress, as well as summation of gravitational factors.

It was shown in some investigations (V.P. Kuravskiy, 1957; V.G. Petrushin, 1962; S.S. Glushkov, 1963, 1965; D.I. Medvedev, 1963, 1965, and others) that dystrophic and degenerative changes, consisting of swelling, wrinkling of cells, chromatolysis, vacuolization of axonal cytoplasm, etc were under the influence of moderate gravitational stress. Under the influence of single (negative) accelerations (Bachmann and MacCliffe, 1956) many nerve cells perish. H.L. Fives, V.V. Stepanov, and A.V. Yerebin (1970) demonstrated changes in the heart evanage.

There have been practically no studies of changes in cardiac nerve cells under the influence of accelerations, and this was the objective of the study whose results are submitted herein.

USSR

UDC 612.014(032)

PRIVES, M. G., Professor, Honored Scientist, MIKHAYLOV, S. S., Professor (Editors)

"The Effect of Extremal Factors on the Structure of Organs and Tissues"

Moscow, Vliyaniye ekstremal'nykh faktorov na stroeniye organov i tkaney, Meditsina, 1972, 96 pp

Translation:	<u>Contents</u>	
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Ye. A. Belyayeva, L. I. Savinova, L. M. Salivanova. Effect of Acceleration on the Vessels of a Rabbit's Retina, Kidneys and Uterus...		19
A. V. Drozdova. Effect of Acceleration and Hypodynamic on the Portal System of the Liver...		24
S. S. Mikhaylov, V. M. Klebanov, S. I. Yevloyev. Effect of Acceleration on the Nerve Receptor Apparatus of the Cardiovascular System...		29
L. S. Sutulov, Yu. L. Sutulov, L. V. Trukhina. Histologic Analysis of the Tissue Structures of the Internal Organs of Horsfield's Terrapine after Being under the Conditions of a Spaceflight around the Moon onboard the Zone-7 Automated Station		41

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USSR

PRIVES, M. G. and MIKHAYLOV, S. S., Vliyaniye ekstremal'nykh faktorov na stroyeniye organov i tkaney, Meditsina, 1972, 96 pp

- Ye. A. Dyskin, R. A. Prives-Bardina, L. P. Tikhonova. Effect of Acceleration on the Venous and Nervous System 45
- G. D. Knyazeva, V. K. Podymov, Ye. A. Savina. Dynamics of the Morphological Manifestations of the Reactions of the Organism under the Conditions of Hypergravity 51
- V. P. Derevyanko, Yu. N. Kopayev, Yu. V. Mashkovtsev. Morphological Manifestations of the Stress Reaction under the Effect of Transverse Accelerations 56
- R. I. Yuy. Study of the Hydrocarbon and Protein Metabolism in the Digestive Organs of Rabbits under the Combined Effect of Vibrations, Accelerations and Irradiation... 61
- N. A. Yurina. Morphological and Cytochemical Indexes of the Stress Reaction in the Blood System under the Effect of Acceleration... 65
- M. Z. Aronova, L. K. Titova, T. P. Tsurulis. Structural and Cytochemical Studies of the Gravity Receptor under the Conditions of Relative Quiet and After the Effect of Accelerations... 69

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USSR

PRIVES, M. G., et al., Vliyaniye ekstremal'nykh faktorov na stroeniye organov i tkaney, Meditsina, 1972, 96 pp

V. S. Strizhkov. Effect of Maximum Tolerable Transverse Acceleration on the Ultrastructure of the Intercellular and Intracellular Ducts in the Adenohypophysis

73

L. S. Sutulov, N. A. Gaydamakin, Yu. L. Sutulov. Histologic Analysis of the Effect of Certain Extremal Factors on the Postirradiation Variations in the Tissues of Experimental Animals...

79

Ya. A. Rakhimov, V. Sh. Belkin, M. U. Usmanov. Morphology of the Internal Organs During Adaptation of Animals to High Altitude Conditions...

85

V. P. Golev, G. V. Chepelenko. Variation of the Intraorgan Nervous Apparatus of the Muscles under the Conditions of the Combined Effect of a Constant Magnetic Field and Acceleration...

90

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USSR

UDC 681.3.06:51

MIKHAYLOV, V., VILENSKAYA, L., SAVVAKINA, A., KRUTYANSKIY, A.

"A Small Monitor for the Ural-14 Computer"

Elektronno-vychisl. Tekhn. i Programir. [Electronic Computer Equipment and Programming -- Collection of Works], No 3, Moscow, Statistika Press, 1970, pp 5-11, (Translated from Referativnyy Zhurnal, Kibernetika, No 6, 1971, Abstract No 6 V619).

Translation: A monitor is described for the Ural-14 computer, providing for the running and printer output of one job during simultaneous input of a second job. The monitor organizes its work on the basis of operator requests input from the control panel, requests from the job, consisting of a special type of instructions, interrupt signals from punching devices and error signals.

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UNCLASSIFIED

AN0012157

M UA 9003

AUTHORS-- KARPENKO, I., AND MIKHAYLOV, V., CORRESPONDENTS

TITLE-- THE GENERAL POLICY IS THE SCIENTIFIC-TECHNICAL PROGRAMS

NEWSPAPER-- IZVESTIYA, JANUARY 11, 1970, P 1, COLS 1-3

ABSTRACT-- IN THIS INTERVIEW, A. ZAKHAROV, CHIEF, RESEARCH DEPARTMENT, V. IGNATYEV, DIRECTOR, "POZITRON" PLANT, A. GOLENISHCHEV, GENERAL DIRECTOR, "POZITRON" RESEARCH-PRODUCTION CORPORATION, AND N. POMUKHIN, CHIEF ENGINEER, THE CENTRAL DESIGN BUREAU OF TECHNOLOGY AND EQUIPMENT, OUTLINE THE STRUCTURE AND THE OPERATIONS OF THE "POZITRON" CORPORATION. THE "POZITRON", REFERRED TO AS THE FIRST RESEARCH-PRODUCTION CORPORATION IN THE UNION, WAS FORMED IN LENINGRAD SIX MONTHS AGO BY MERGING A LEADING SCIENTIFIC-RESEARCH INSTITUTE OF THE INDUSTRY, A LARGE DESIGN BUREAU OF TECHNOLOGICAL EQUIPMENT, AND TWO LARGE LOT-PRODUCING PLANTS.

R. SEYSYAN, DEPARTMENT CHIEF, A. ZAKHAROV, HEAD OF A RESEARCH DEPARTMENT, AND N. ZAMBROVSKIY, ONE OF THE CHIEFS OF THE DESIGN BUREAU, HAVE ALSO BEEN INTERVIEWED.

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19570988

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USSR

UDC 535.34

MIKHAYLOV, V. A., ZOLOTAREV, V. N., and DAKHSHIYEV, N. G.

"The Relation Between the Observed and Real Absorption Spectra of Molecules in a Condensed Medium. VII. On One of the Physical Causes for the Violation of Beer's Law in Concentrated Solutions."

Leningrad, Optika i Spektroskopiya, Vol 34, No 6, Jun 73, pp 1082 - 1087

Abstract: Factors related to the dispersion of an effective field of light waves acting on molecules in a condensed medium must, in the general case, lead to a violation of Beer's law. These violations are usually explained on the basis of a change in the coefficient of absorption due to the presence in the system of intermolecular interactions, without specifying the nature of these interactions. Detailed quantitative studies of a 2-component CCl_4 -- CHBr_3 system in the region of the intense ν_3 oscillation band of the CCl_4 molecule ($700 - 800 \text{ cm}^{-1}$) show that there are effects due to the light field and due to intermolecular interactions. The authors use a model of the system in which the absorption capacity is characterized by spectral values such as the spectra of the Einstein coefficients and the optical polarizability. Using the corrected characteristic, the model approaches quite closely to Beer's law. The difference between the model and the actual values is considered to be due to the effects of concentration on molecular characteristics. It is suggested that a generalized Lorentz-Lorentz equation can be used to determine the relative contributions of these two factors.

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USSR

UDC 681.325.3

MIKHAYLOV, V. A., and TYRSA, V. Ye.

"Limiting Accuracy Achieved in Analog-to-Digital Angle-Code Converters"

Pribory i sistemy avtomatiki. Resp. mezhved. nauch-tekhn. sb. (Instruments and Automation Systems. Republic Interdepartmental Scientific and Technical Collection), 1970, vyp. 16, pp 68-72 (from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 6, Jun 71, Abstract No 6 B468)

Translation: A study is made of the basic types of errors in angle code converters for spatial and time coding, and it is demonstrated that they cannot be decreased without limit. The limit of decreasing the errors is bounded by the level of thermodynamic fluctuations and technological errors which cannot be eliminated. Accordingly, the errors during amplitude and time modulation and the technological errors are investigated. It is demonstrated that the angle-time code interval converters with a constantly rotating sensitive element have maximum accuracy. There is 1 illustration and a 7-entry bibliography.

1/1

USSR

UDC: 681.3.06:51

MIKHAYLOV, V. A., NIKITIN, A. I.

"Computer Technology and Development of Operational Computer Systems"

V sb. Mat. obespecheniye ETsVM. Vyp. 4 (Mathematical Provision of Digital Computers--collection of works, No 4), Kiev, 1970, pp 3-20 (from RZh-Kibernetika, No 7, Jul 71, Abstract No 7V737)

Translation: The authors consider functions of operational digital computer systems which realize package processing of problems, operation with time division with several users, and operation in real time. The basic concepts of operational systems are clarified as well as methods of realization of multiprogram operation and criteria of effectiveness of systems. Trends of development and problems of operational digital computer systems are considered in general outlines. V. Tkach.

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USSR

UDC: 621.317.757(088.8)

PAVLYUK, A. P., MIKHAYLOV, V. A., MININ, V. A., TARASOV, N. S., DONSKOY,
M. K.

"A Device for Measuring the Bandwidth of Radio Frequency Signals"

USSR Author's Certificate No 255403, filed 4 Apr 68, published 31 Mar 70
(from RZh-Radiotekhnika, No 11, Nov 70, Abstract No 11A324 P)

Translation: It is pointed out that existing devices for measuring bandwidth have a number of disadvantages: a lack of continuous visual monitoring of the spectrum of the emission being studied, inadequate precision, and poor operational efficacy. The purpose of the proposed invention is to automate measurements and improve precision. A block diagram of the device is given and its operating principle is described. E. L.

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1/2 024 UNCLASSIFIED PROCESSING DATE--02JCT70
TITLE--ENERGY LOSSES DURING THE PURIFICATION OF SUBSTANCES BY
ELECTRODIFFUSION (DIFFUSION IN AN ELECTRIC FIELD) AND THE OPTIMUM DESIGN
AUTHOR--(02)-DRAKIN, S.I., MIKHAYLOV, V.A.

COUNTRY OF INFO--USSR

SOURCE--TEOR. OSN. KHIM. TEKHNOL. 1970, 4(2) 310-4

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--METAL DIFFUSION, ELECTRIC FIELD, METAL PURIFICATION, SODIUM,
MERCURY, BISMUTH

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1989/1915

STEP NO--UR/0455/70/004/002/0310/0314

CIRC ACCESSION NO--AP0108244

UNCLASSIFIED

2/2 024

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0108244

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IT WAS SHOWN THEORETICALLY THAT EVEN UNDER STATIC CONDITIONS, ELECTRODIFFUSION MAY BE UTILIZED FOR THE PURIFICATION OF APPRECIABLE AMTS. OF LIQ. AT A MODERATE CONSUMPTION OF ENERGY, A. THE THEORY WAS APPLIED TO THE PURIFICATION OF NA FROM HG AND OF IN FROM BI. THE SP. ENERGY CONSUMPTION, A SUBSP, PASSED THROUGH A MIN. AS A FUNCTION OF THE POTENTIAL DIFFEREGENE, DELTA E. FOR NA-HG AT 433DEGREESK, DELTA E SUBMIN. EQUALS 0.00813 V FOR A SUBSP EQUALS 23.3 KW HR-KG. FOR IN-BI, AT 166DEGREES, THE MIN. A SUBSP EQUALS 157 KW HR-KG. AT DELTA E SUBMIN. OF SIMILAR TO 0.06 V.

UNCLASSIFIED

Acc. Nr: **AP0047353**

Ref. Code: **UPAS87**

PRIMARY SOURCE: Vestnik Khirurgii imeni I. I. Grekova, 1970,
Vol 104, Nr 1, pp 49-53

**THE DIAGNOSTIC OPPORTUNITIES OF PORTOHEPATOGRAPHY WITH AN OILY-
CONTRAST SUBSTANCE**

By A. M. Ganichkin, A. M. Granov and V. A. Mikhaylov

Based on the experimental and clinical studies it is felt that the use of contrast substances on oil base widens the opportunities of portohepatography, providing a distinct image of intrahepatic vessels.

111

REEL/FRAME

19790879

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AP9053089

M

UR 0289

4

PRIMARY SOURCE: Izvestiya Sibirskogo Otdeleniya, AN SSSR,
Seriya Khimicheskikh Nauk, Nr 12(162), Nr 5,
pp 148-151

V. G. Torgov, V. N. Andrievsky, E. N. Gilbert,
I. L. Kolyvatsky, V. A. Mikhailov, A. V. Nikolaev,
V. A. Pronin, D. D. Trozenko

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THE EXTRACTION OF Pd AND Pt(IV) FROM NITRIC, HYDROCHLORIC
AND SULPHURIC ACID SOLUTIONS BY ORGANIC SULFIDES

25

The extraction of tracer amounts of Pd and Pt(IV) from nitric, hydrochloric and sulphuric acid solutions by 0.5M solution of organic sulfides (R₂S where R=C₆H₅-C₆H₁₃, C₆H₅ and thiophane) in benzene has been studied. The dialkylsulfide extraction can be used in separation Pd from Pt(IV) from nitric and hydrochloric acid solutions and for simultaneous extraction Pd and Pt from sulphuric acid solutions.

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UDC: 539.3:554.1

KABANOV, V. V., MIKHAYLOV, V. D.

"Stability of Eccentrically Fastened Cylindrical Shell with Elastic Edge Rings in Axial Compression"

4-Ya Vses. Konf. po Probl. Ustoychivosti v Stroit. Mekh., Tezisy Dokl. [Fourth All-Union Conference on Problems of Stability and Structural Mechanics, Abstracts of Reports -- Collection of Works], Moscow, 1972, pp 127-128 (Translated from Referativnyy Zhurnal Mekhanika, No 12, 1972, Abstract No 12V279)

Translation: The stability of a circular cylindrical shell with longitudinal and transverse supports located eccentrically relative to the mid surface in the longitudinal direction is studied. The shell has elastic rings at its edges. The initial moment state of the shell is determined from the non-linear theory of the edge effect. The equations for stability and boundary conditions, which act as the equations of stability of the rings, are represented in vector-matrix form after separation of variables and reduced, by

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KABANOV, V. V., MIKHAYLOV, V. D., 4-Ya Vses. Konf. po Probl. Ustoychivosti v Stroit. Mekh., Tezisy Dokl., 1972, pp 127-128

means of the method of finite differences, to a recurrent system of three-member algebraic equations. The determinant of the system is calculated by the method of exclusion of Gauss in matrix form. Recurrent formulas are produced allowing the determinant to be calculated with any number of points of division of the generatrix. Numerical studies were performed on the M-20 computer. The influence of eccentricity of placement of supports, moment of the initial state and rigidity of the rings is estimated.

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AA0047089

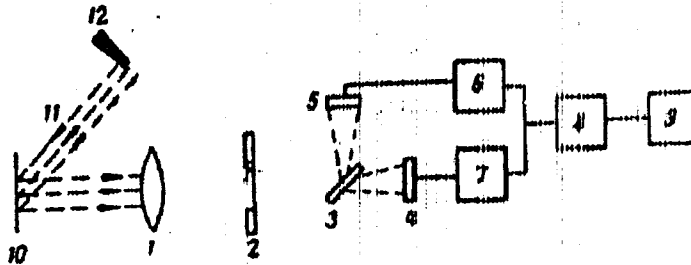
Mikhailov, V.F.

UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent,

2/70

241751 LOGARITHMIC PYROMETER. It is an optical instrument with a fast shutter and a memory. The memory is connected between the logarithmic amplifiers and a measuring device. The shutter is placed in front of a light divider. The instrument is capable of indicating the instantaneous temperatures.



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27.5.67 as 1160915/18-10.V.T. NEGRUTSAK et al.
 (29.9.69) Bul 14/18.4.69. Class 42d. Int. Cl. G 01 k.

19790571

AA0047089

AUTHORS: Negrutsak, V. T.; Nazarov, B. N.; Trubitsin, Ye. V.; Mikhaylov, V. F.

19790572

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UDC: 8.74

IVANOVSKIY, R. I., MIKHAYLOV, V. G., PODKORYTOV, V. N.

"Investigation of the Stability of Multidimensional Automatic Control Systems by Means of Symbolic Transformations on a Digital Computer"

Irkutsk, Issledovaniye ustoychivosti mnogomernykh sistem avtomaticheskogo upravleniya s pomoshch'yu simvolicheskogo preobrazovaniya na TsVM. Tr. po prikl. mat. i kibernet. Sib. energ. in-t Sib. otd. AN SSSR (cf. English above. Works on Applied Mathematics and Cybernetics. Siberian Power Engineering Institute, Siberian Department of the Academy of Sciences of the USSR), 1972, 79-86, bibliogr. of 7 titles (manuscript deposited in VINITI 26 Dec 72, No 5285-72 Dep.) (from RZh-Kibernetika, No 7, Jul 73, abstract No 7V713 Dep. by the authors)

Translation: The paper describes a program for getting the characteristic polynomial of a multidimensional automatic control system with coefficients which are analytical expressions of the parameters of the investigated system.

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UDC 534.784

MIKHAYLOV, V. G., Moscow"Formant Distribution for Russian Speech Pronounced by Male Voices"

Moscow, Akusticheskiy Zhurnal, Vol XVIII, No 1, 1972, pp 63-67

Abstract: The formant distribution for Russian speech by male voices and the values of the intelligibility bands were obtained using the following method [Trudy VIKAS, NoNo 29-30, 1951; No 33, 1952, No 40, 1954]. The intelligibility of the syllables S_i was measured in the frequency bands F_i by articulation tests. Then by the formant intelligibility as a function of the syllable intelligibility $A(S)$, the value of $A(F_i)$ was calculated. The formant intelligibility in the frequency band ΔF_i , $\Delta A_i = A(F_i + \Delta F_i) - A(F_i)$ and considering the properties of additiveness of formants, the integral formant distribution $A(f) = \sum \Delta A_i$. The articulation measurements were taken by the VIKAS tables [N. B. Pokrovskiy, Rechet i izmereniye razborchivosty rechi, Moscow, Svyazizdat Press, 1962]. The results of measuring the syllable intelligibility as a function of the pass band of the low frequency filter with the high frequency filter constantly included in the channel with a pass band of (1,000- ∞) Hertz are presented in a table. During each test the cutoff frequency of the low 1/2

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MIKHAYLOV, V. G., Akusticheskiy Zhurnal, Vol XVIII, No 1, 1972, pp 63-67

frequency filter was increased successively from 2,132 to 1,230 hertz, and then the filter was switched off. The measurements were then repeated in opposite order. Another table contains data obtained retaining the same measurement procedure. Here, the upper frequency filter was not included in the channel, and the cutoff frequency of the low-frequency filter varied from 640 to 2,130 hertz. The mean values of the syllable intelligibility were calculated by the tabulated data for 9 speakers, and then the formant intelligibility AI_j was determined by the function $A(S)$ for the corresponding frequency bands AE_j . The formant distribution $A_{male}(f)$ for 6 speakers is plotted and compared with the mean distribution $A(f)$. The values of the equal intelligibility bands and the mean frequency for each band are tabulated.

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Hematology

USSR

UDC 615.362.018.46.014.41

MIKHAYLOV, V. G., and IOFFE, A. L., Laboratory for Tissue Preservation, Uzbek Institute of Hematology and Blood Transfusion, Tashkent

"Some Problems in Connection With the Preservation of Bone Marrow with Polyvinylpyrrolidone at -40° "

Moscow, Problemy Gematologii i Perelivaniya Krovi, No 10, 1971, pp 53-55

Abstract: The diameter of erythroblasts, myelocytes, and segmentonuclear neutrophils shrinks after 2 hours of incubation with polyvinylpyrrolidone (PVP) because of partial dehydration. The viability of myelokaryocytes after 10 minutes of contact with PVP is comparatively low in frozen preparations (79%). But it increases markedly (92 to 95%) when the time of contact is lengthened to 4 hours. Fewer cells possessing normal mobility and intact structure but insufficiently dehydrated before freezing are restored after thawing. The viability of thawed myelokaryocytes increases with increasing degree of dehydration as a result of longer incubation with PVP. Transplantation of bone marrow preserved at -40° with PVP to nine patients with advanced cancer helped to restore hematopoiesis which had been depressed by large doses of cytostatic agents.

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UDC 669.295'71'292:620.192.7

MIKHAYLOV, V. I.

"Tendency of Imitated Seam Zone of Ti-Al-V Alloys to Brittle Rupture"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 5, 1972,
pp 27-30.

Abstract: The influence of the thermal cycle of welding on the mechanical properties of seam zone of Ti-Al-V alloys was studied, as well as certain embrittlement factors. It was found that reducing the test temperature and increasing the deformation rate does not cause brittleness in Ti-3.5% Al-20% V in the seam zone. A stress concentrator is not a strong factor. However, due to localization of deformations, it does cause a greater reduction in general deformation ability and energy capacity of the material. The $\alpha + \beta$ alloys of Ti-3.5% Al-(4-10%) V and their seam zones do have higher sensitivity to reduction in test temperature and increased deformation rate in certain structural states. Stress concentrators have almost the same influence on this group of alloys as on single-phase α alloys.

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UDC 577.1:612.12-015

PODDUBNAYA, L. T., ROGATINA, L. N., KUSTOV, V. V., and MIRHAYLOV, V. I.

"Effect of Chemical Preservative Agent on Rate of Emission of Certain Gaseous Toxic Substances From Stored Units"

V sb. Probl. kosmich. biol. (Problems in Space Biology -- Collection of Works), Vol 16, Moscow, "Nauka" (Science), 1971, pp 170-173 (Russian) (from RZh-Biologicheskaya Khimiya, No 19, 10 Oct 71, Abstract No 19F1534 from summary)

Translation: A study was made of the effect of a chemical preservative of the phenol class on the rate of gas emissions from stored urine. It was established that addition of the preservative lessens the input into the air of substances of the ammonia, ketone, fatty-acid and nitrogen-oxide group. The emission of carbon monoxide and organic compounds, as determined cumulatively according to carbon, does not vary.

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UDC 577.1:615.7/9

KUSTOV, V. V., MIKHAYLOV, V. I., and PODDUBNAYA, L. T.

"Some Peculiarities of the Biological Effect of Gaseous Toxic Substances Released Into the Atmosphere From Urine and Feces"

Vsb. Probl. kosmich. biol. (Problems in Space Biology -- Collection of Works), Vol. 16, Moscow, "Nauka" (Science), 1971, pp 164-170 (Russian) (from RZh-Biologicheskaya Khimiya, No 20, 25 Oct 71, Abstract No 20F1486 from summary)

Translation: Male mice underwent poisoning for two hours by gas released from urine and feces, fresh or stored for 10 days. On conclusion of poisoning a determination was made of blood cholinesterase (ChE) and catalase activity and carboxy-Hb and acetylcholine content of the blood. On the basis of changes in the acetylcholine-ChE system a conclusion was drawn regarding the general toxic effect of the gaseous substances released from fresh and stored urine and feces.

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UDC: 621.396.69:621.316.541(088.3)

MIKHAYLOV, V. I.

"A Connector"

USSR Author's Certificate No 270017, filed 25 Oct 68, published 4 Aug 70
(from RZh-Radiotekhnika, No 1, Jan 71, Abstract No IV311 P)

Translation: This Author's Certificate introduces a connector which contains a printed-circuit board equipped with contact groups. To increase the operational reliability of the device and improve working convenience, the contact groups are located on flat sections of a multilayered flexible board separated by corrugated sections.

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