2/2 024 UNCLASSIFIED PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0105624

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT WAS DETD. OF PLASTIC DEFORMATION OF AUSTENITE AT VARIOUS TEMPS. AND AT CONST. COOLING ON ITS STABILITY IN BAINITIC AND MARTENSITIC TRANSFORMATION REGIONS. AT THE SAME TIME, THE EFFECT OF COOLING RATE, AND DEGREE AND TEMP. OF DEFORMATION ON TRANSFORMATION KINETICS WAS ALSO STUDIED. STEEL 40KH, 25KH2GSNVM, AND 28KH3GSNVMFA WERE STUDIED, BY UTILIZING A HIGH TEMP., VACUUM (10 PRIME NEGATIVE3 TORR) MICROSCOPE IMET-VMD PROVIDED WITH DEFORMATION ARRANGEMENT AND A DILATOMETER. POLISHED SPECIMENS (100 TIMES 20 TIMES 3 MM) WERE HEATED ELEC. TO 1200DEGREES, WHEREBY THE HEATING RATE WITHIN THE INTERVAL 700-900DEGREES VARIED FROM 25-125DEGREES-SEC. THE COOLING RATE (IN VACUUM) VARIED FROM 2-50DEGREES-SEC WITHIN INTERVAL 600-500DEGREES. SPECIMENS WERE DEFORMED DURING COOLING AT 400, 600, AND 750DEGREES UP TO THE RELATIVE ELONGATIONS 3, 9, 15, AND 30PERCENT, UNDER TEMPORARY LOAD OF 5, 15, 25, AND 50 KG-MM PRIME2, RESP. A SMALL PLASTIC DEFORMATION (3-9PERCENT) WIDENED THE INTERVAL OF MARTENSITE TRANSFORMATION BY 45-50DEGREES. THIS EFFECT REACHED MAX. AT 400DEGREES WITH 9PERCENT DEFORMATION DEGREE. THE INCREASE OF DEFORMATION DEGREE BY 15-30PERCENT CAUSED A SMALL LOWERING OF THE TEMP. OF BEGINNING MARTENSITIC TRANSFORMATION. PLASTIC DEFORMATION AT 600-750DEGREES INCREASED THE TEMP. OF BAINITIC TRANSFORMATION AND SHORTENED THE TIME TO ITS BEGINNING.

UNCLASSIFIED

BELOV, V. Z.

JPRS 58011
18 Jan 73

Transactinium Elements

IN THE COMMITTEE FOR INVENTIONS AND DISCOVERIES
UNDER THE COUNCIL OF MINISTERS USSR

[Announcement; Moscow, Vestnik Akademii Nauk SSSR, Russian, Vol 42, No 11, November 1972, pp 132-133]

The Committee has registered the following scientific discoveries:

G. N. FLEROV, YU. TS. OGANESYAN, YU. V. LOBANOV, YU. A. LAZAREV, Czechoslovak citizen J. ZVARA, V. Z. BELOV, V. A. DRUIN, A. G. DEMIN, AND YU. P. KHARITONOV.

"ELEMENT NO. 105 OF MENDELEYEV'S PERIODIC SYSTEM"

Formulation of the discovery: Experimentally established was the previously unknown phenomenon of formation of a chemical element with the ordinal number 105. An isotope of that element with a half-life $T_{1/2} \approx 2$ seconds was obtained during the irradiation of americium with neon nuclei.

Priority of discovery -- 18 February 1970.

Certificate No. 114. Application No. OT-7896.

The data obtained by the authors of the discovery are of great scientific importance, as they show a divergence of the experimentally determined radioactive properties of element No. 105 from the previously predicted properties of element No. 105 on the basis of known semi-empirical laws and require revision of the latter. The new experimental data relating to the synthesis of element No. 105 indicate a real possibility of the detection of heavier chemical elements in nuclear reactions, for example, No. 106, and permit much more confidently predicting the properties of those elements.

USSR

UDC 546.799.94

ZVARA, I., BELOV, V. Z., DOMANOV, V. P., KOROTKIN, YU. S., CHELNOKOV, L. P., SHALAYEVSKIY, M. R., SHCHEGOLEV, V. A., and YUSSONNUA, M.

"Chemical Isolation of Kurchatovium"

Leningrad, Radiokhimiya, Vol 14, No 1, 1972, pp 119-122

Abstract: Earlier it was shown that during the irradiation of ^{242}Pu with ^{22}Ne ions with energies of 113-119 mev (for z = 104), a short-lived, spontaniously fissionable nuclide was detected whose chemical characteristics corresponded to the characteristics of ekahafnium (Ku). The half lives of ^{259}Ku and ^{260}Ku are about 4.5 and 0.1 sec respectively. For these experiments the target film of plutonium oxide (95% ^{242}Pu) with a density of 0.8 mg/cm^2 was irradiated with ^{22}Ne ions with an energy of 119 mev. This produced a maximum yield for the reaction ^{242}Pu (^{22}Ne, 5n) ^{259}Ku. gaseous nitrogen was passed over the surface of the target then mixed with small amounts of $TiCl_2$ and $SOCl_2$. The slightly volatile tetrachlorides of the radioactive products formed were separated on a chromatograph. A Ge-Li γ-radiation detector was used to analyze the gas at different points along the column. The isotopes ^{170}Hf, ^{171}Hf, ^{44}Se (the latter the product of ^{22}Ne reaction with the Al of the target base), ^{242}Cm

USSR

ZVARA, I., et al., Radiokhimiya, Vol 14, No 1, 1972, pp 119-122

and ^{246}Cf (the latter two being products of a transfer reaction). It was found that Na, Cs, Ca, Sr, the lanthanides, Np, Pu, Ru, Rh, and Pd are adsorbed only at significantly higher temperatures than Hf (and also the ekahafnium Ku) whereas the chlorides of In, Sn, Nb, Mo, and Tc are adsorbed only at lower temperatures. Photographs of the expected area of Ku adsorption show tracks of fission products which must be those of the ^{259}Ku with a $t_{\frac{1}{2}}$ = 4.5 sec.

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USSR

UDC 546.799.94

ZVARA, I., BELOV, V. Z., DOMANOV, V. P., KOROTKIN, Yu. S., CHELNOKOV, L. P., SHALAYEVSKIY, M. R., SHCHEGOLEV, V. A., and YUSSONNUA, M.

"Chemical Isolation of Kurchatovium"

Leningrad, Radiokhimiya, Vol 14, Vyp 1, 1972, pp 119-122

Abstract: Earlier it was shown that during the irradiation of ^{242}Pu with ^{22}Ne ions with energies of 113-119 nev (for z = 104), a short-lived, spontaniously fissionable nuclide was detected whose chemical characteristics corresponded to the characteristics of ekahafnium (Ku). The half lives of ^{259}Ku and ^{260}Ku are about 4.5 and 0.1 sec respectively. For these experiments the target film of plutonium oxide (95% ^{242}Pu) with a density of 0.8 mg/cm^2 was irradiated with ^{22}Ne ions with an energy of 119 mev. This produced a maximum yield for the reaction ^{242}Pu (^{22}Ne, 5n) ^{259}Ku. Gaseous nitrogen was passed over the surface of the target then mixed with small amounts of $TiCl_2$ and $SOCl_2$. The slightly volatile tetrachlorides of the radioactive products formed were separated on a chromatograph. A Ge-Li α-radiation detector was used to analyze the gas at different points along the column. The isotopes ^{170}Hf, ^{171}Hf, ^{44m}Se (the latter the product of ^{22}Ne reaction with the Al of the target base), ^{242}Cm and ^{246}Cf (the latter two being products of a transfer reaction). It was

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ZBARA, I., et al., Radiokhimiya, Vol 14, Vyp 1, 1972, pp 119-122

found that Na, Cs, Ca, Sr, the lanthanides, Np, Pu, Ru, Rh, and Pd are adsorbed only at significantly higher temperatures than Uf (and also the ekahafnium Ku) whereas the chlorides of In, Sn, Nb, Mo, and Tc are adsorbed only at lower temperatures. Photographs of the expected area of Ku adsorption show tracks of fission products which must be those of the ^{259}Ku with a t-1/2 = 4.5 sec.

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USSR UDC 532.5

ANTONOV, A. M. and BELOV, YU. A.

"An Approximate Method for Solving One Boundary-Value Problem, Describing the Flow of a Gas in the Case of Strong Blowing"

Kiev, Krayev, zadachi mat. fiziki (Boundary-Value Problems in Mathematical Physics, Collection of Works), 1971, pp 183-197 (from Referativnyy Zhurnal -- Mekhanika, No 4, 1973, Abstract No 4B462 by G. I. Maykapar)

Translation: The flow in the film of a gas sheet blown through a porous wall is considered for the case when the gas can be considered incompressible and nonviscous. The blown gas is separated from the basic flow by a contact surface, on which the pressure has no discontinuity. The problem leads to the solution of the Poisson equation for the flow function ψ, $\Delta\psi(x,y)=-F(\psi)$ with boundary conditions $\psi(x,0) = \tau(x)$, $\psi_y(x,0) = \tau'(x)$, $\psi(x,y)=0$, $\psi_x^2 + \psi_y^2 = 2p\rho=C$ on the surface of the separation. The right side of the Poisson is in the form of a power series of ψ; the solution is also in the form of a series. (English resume)

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USSR UDC: 669.71.472(088.8)

BELOV, Yu. I., SOBOL', I. I., BAKHTIN, A. A.

"Method of Removal of the Lining of an Aluminum Electrolyzer"

USSR Author's Certificate Number 351926, Filed 27/07/70, Published 11/12/72 (Translated from Referativnyy Zhurnal Metallurgiya, No 8, 1973, Abstract No 8G176P, by G. Svodtseva).

Translation: A method of removal of the lining of an aluminum electrolyzer including breakup of the lining, differing in that in order to reduce the time required for overhaul of the electrolyzer and increase the productivity of the labor, the lining is broken up by lifting it upward in the loops of lines which are preliminarily placed on the layer of refractory filler between the cathode shell and the lining as it is installed. The ends of the lines are placed between the side plate and shell of the bath in the filler 1/4-1/3 of the way down from the top of the cathode shell. A cross-sectional drawing of an electrolyzer is presented.

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USSR UDC 669.71.472(088.8)

BELOV, Yu. I.

"Method for Transferring Heat Away From, a Self-Firing Anode of an Aluminum Electrolyzer"

USSR Author's Certificate No. 268664, Filed 8/12/68, Published 9/07/70, (Translated from Referativnyy Zhurnal-Metallurgiya, No. 1, 1971, Abstract No. 1 G138 P)

Translation: The heat transfer elements used to carry heat away from the anode in an aluminum electrolyzer are placed with their lower ends in the liquid anode mass to maximum depth at the center of the anode, with gradually reducing depth toward the sides and ends of the anode, while the upper ends rise above the level of the liquid anode mass to the maximum height in the center of the anode, with gradual reduction toward the sides and ends, in order to provide differential heat transfer from the anode.

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USSR

UDC 669.71.472(088.8)

BELOV, Yu. I.

"Device for Transfer of Heat Away From the Self-Firing Anode of an Aluminum Electrolyzer"

USSR Author's certificate No. 268663, Filed 8/12/68, Published 5/08/70, (Translated from Referativnyy Zhurnal-Metallurgiya, No. 1, 1971, Abstract No. 1 G134 P)

Translation: A device is suggested to transfer the heat away from a self-firing anode in an aluminum electrolyzer using heat-transfering elements, the lower ends of which are submerged in the liquid anode mass. The device is made of a set of heat-conducting plates of various lengths with apertures in the centers and supporting rods passing through the apertures in the plates, in order to provide differentiated heat transfer without requiring manual labor for adjustment of the devices. The lower ends of the heat-conducting plates in the central portion of the anode are submerged in the liquid anode mass to maximum depth, with gradual reduction of the depth of submergence toward the sides and ends of the anode, while the upper ends of the plates are located above the level of the liquid anode mass, with the maximum height in the central portion of the anode and gradual reduction of the height above the bath level toward the sides and ends of the anode.

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UDC 669.71.472(088.8)

BELOV, Yu. I., VOROB'YEV, D. N., SOBOL', I. I., AYUSHIN, B. I., and ZYRYANOV, L. P.

"Method of Utilizing the Spent Carbon-Material Lining of Aluminum Electrolyzers"

USSR Author's Certificate No 261701, Filed 30/10/68, Published 28/08/70 (Translated from Referativnyy Zhurnal-Metallurgiya, No 2, 1971, Abstract No 2 G158 P)

Translation: To reduce the cost of production of Al, the used lining made of carbon materials is ground to a grain size of 0.2 mm, then used to make up 2-5% of the dry charge used to make the anode mass.

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USSR

UDC 669.71.472(088.8)

ALESHINTSEV, V. I., BELOV, Yu. I., and SOBL', I. I.

"Electrolyzer for the Production of Aluminum"

USSR Author's Certificate No 271026, Filed 27/02/67, Published 27/08/70 (Translated from Referativnyy Zhurnal-Metallurgiya, No 2, 1971, Abstract No 2 G147 P)

Translation: In order to increase the service life of the electrolyzer and increase the yield of Al per current, carbon-graphite blocks are located in steps, electrically insulated from each other, from the side lining and bottom blocks.

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BELOV Yu. K

USSR UDC 539.434:621.785.53:669.15-194.2

KRISHTAL, M. A., PONOMARENKO, YE. P., BELOV, YU. K. and MARKOV, A. P. (Tula Polytechnic Institute Ukrainian Scientific Research Institute of Special Steels, Alloys and Ferroalloys)

"Heat Resistance and Strength of Chromium-Plated Carbon Steels"

Moscow, Metallovedeniye i termicheskaya obrabotka metallov, No 6, 1970, pp 60-61

Abstract: A study was made of the possibility of using carbon sheet steel (obtained by contactless vacuum diffusion) under high-temperature (up to 1200°C) conditions. The steel (St 3) has a surface-alloyed chromium (40-60%) layer 1.5-2.2 mm thick. The tests were conducted on samples and industrial equipment operating under variable thermal cycle conditions. St 3 and Kh18N10T steel were compared. The strength properties of St 3 containers at temperatures up to 1200°C were found to be 2-4 times higher than those of Kh18N10T steel. St 3 steel is recommended for use in equipment operating under load at high temperatures. 2 figures, 5 references.

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USSR UDC 621.791.052:620.192.46:669.14

FEDOROV, V. G., Candidate of Technical Sciences, MAKAROV, E. L., Candidate of Technical Sciences, BELOV, YU. M., Candidate of Technical Sciences, ZASETSKIY, YU. A., Engineer, and SHUBIN, V. I. Engineer

"Conditions for Crack Development in Welding EP56 Steel"

Moscow, Svarochnoye Proizvodstvo, No 1(471), Jan 74, pp 31-32

Abstract: The development of cold cracks was investigated in joints of EP56 steel welded with EP56 electrodes after 1-14 hr of holding under different pressures. A definite relation was found between the H-content in the metal of the joint and the resistance of welded joints to the development of cracks; an index was determined which characterizes the disposition of welded EP56 steel joints to crack development at manual electric arc welding. The critical H--content in the metal of the welded joint (less than 10cm^3/100g) was established which excludes the development of cold cracks in welded EP56 steel joints, according to tests by the LTP-2 method. Joint hardness was HV 441 when welded with steam electrodes, and HV 430 when welded with electrodes annealed at maximum temperature, whereby the hardness of the base metal was HV 316. Five figures, three bibliographic references.
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USSR UDC 541.65:547.1'118

ROGOZHIN, S. V., DAVANKOV, V. A., and BELOV, YU. P., Institute of Metal Organic Compounds, Acad. Sc. USSR

"Optically Active Diethyl Ester of α-Aminobenzylphosphonic Acid"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 4, Apr 73, pp 955-956

Abstract: Separation of the racemic mixture of the diethyl ester of α-amino-benzylphosphonic acid has been achieved by repeated crystallization with debenzoyl-d-tartaric acid taken in a 2:1.25 ratio.

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AA0040648 Belou, Yu.S. UR 0482

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Soviet Inventions Illustrated, Section I Chemical, Derwent,

242857 IMPROVED SEAL for the door of a chamber, e.g. for drawing of semiconductor single crystals from a melt. The door, free to move in the direction perpendicular to its surface is controlled and aligned by pins passing through the door; the clamping screws are located in threaded holes in the hinge clamps securing the door perimeter, and the door is sealed by turning a handle held by these screws.
10.2.68 as 1221430/22-1. V.YU.ZHVIRBLYANSKII et al. STATE SCI.RES. & DES. INST. OF THE RARE-METAL IND. (25.9.69) Bul 16/5.5.69. Class 12g. Int.Cl.B 01j.

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19750228

AA0040648

AUTHORS: Zhvirblyanskiy, V. Yu.; Andriyanov, V. A.; and Belov, Yu. S.

Gosudarstvennyy Nauchno - Issledovatel'skiy i Proyektno - Konstruktorskiy Institut Redkometallicheskoy Promyshlennosti

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USSR

UDC 541.67:547.341

ZAKHAROV, V. I., BELOV, YU. V., IONIN, B. I., and PETROV, A. A., Leningrad Technological Institute imeni Lensovet

"Study of the Spin-Apin Coupling in Fluoroanhydrides of Phosphoric Acids by the Method of Double and Triple Nuclear Magnetic Resonance"

Moscow, Doklady Akademii Nauk SSSR, Vol 209, No 6, Apr 73, pp 1343-1346

Abstract: Analysis of double and triple resonance spectra was carried out by the method of subspectra: selective exposure to a high frequency field H_2 of one of the subspectra in the resonance of the nucleus X leads to the merging of resonance lines of other nuclei in the same subspectrum. For example, in the spectrum of the difluoroanhydride of methanephosphonic acid, when the low frequency subspectrum P^{31} is exposed to high frequency field, the high frequency lines of the triplets H^1 merge, and conversely, when the high frequency subspectrum P^{31} is exposed, the low frequency H^1 triplet lines become merged. It follows from this that the constants H-F and F-P have the opposite signs, the constant J_{HF} being positive. To perform similar analysis in case of the 2-chloro-X-propene-1-phosphonic acid difluoride, it is necessary to solve the spin-spin coupling of the ethylene proton with the protons of the methyl group, that is under conditions of triple resonance.

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USSR

UDC: 539.142.3

BELOV, Yu. V., KLEYMAN, Yu. L., MORKOVIN, N. V., PAVLENKO, V. A., Special Design Office of Analytical Instrument Making, Academy of Sciences of the USSR

"A Nuclear Magnetic Resonance Spectrometer"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 9, Mar 72, Author's Certificate No 331302, Division G, filed 11 Jan 71, published 7 Mar 72, p 129

Translation: This Author's Certificate introduces a nuclear magnetic resonance spectrometer which contains an electromagnet, a system of external proton stabilization and a system of internal stabilization of resonance conditions, a transceiver with phase detector, a nuclear magnetic resonance signal indicator, a registration device, a voltage-to-frequency converter, a field modulator, a double resonance device and a nuclear magnetic resonance signal phase regulator. As a distinguishing feature of the patent, the universality of the instrument is extended and productivity is increased by adding a summing amplifier for controlling the voltage-to-frequency converter from the registration device and the nuclear magnetic resonance signal

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USSR

BELOV, Yu. V., USSR Author's Certificate No 331302

indicator, and by making the NMR signal phase regulator in the form of two mutually synchronized flip-flops with shaping devices. These flip-flops are connected to an inductive phase shifter and a compensation amplifier.

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USSR UDC 621.373.431(088.8)

GRYZLOV, A. I., SOLOV'YEV, YU. V., RAYEVSKIY, A. YE. BELOV, YU. V.

"High-Power Oscillator"

USSR Author's Certificate No 275114, Filed 6 Sep 68, Published 15 Oct 70 (from RZh-Radiotekhnika, No 4, Apr 71, Abstract No 4G207P)

Translation: A high-power oscillator is proposed. It contains a power supply, a resonance charge choke, a shaping line, a synchronizer, a delay line, a commuting thyratron and a pulse transformer. In order to reduce the cutoff duration and improve the deionization conditions, a shunting thyratron is included in parallel to the primary coil of the transformer. The control electrode of the thyratron is connected to the output of the delay line.

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Pulse Technique

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B

UDC 621.376.53(088.8)

ZVONTSOV, A. G., GRYZLOV, A. I., BELOV, YU. V., SOLOV'YEV, YU. V.

"Pulse Modulator"

USSR Author's Certificate No 252394, Filed 27 Sep 67, Published 12 Feb 70 (from RZh-Radiotekhnika, No 9, Sep 70, Abstract No 9D246P)

Translation: This author's certificate introduces a pulse modulator containing a high-voltage direct-current source with a charge choke and a separating diode, a hollow commutator made of two thyratrons with autonomous ignition generators, a storage element in the form of an artificial line and a load. In order to accelerate deionization of the thyratron and eliminate repeated breakdown by the return voltage, it is equipped with an auxiliary diode which is connected to the discharge circuit of the thyratron between its anode and a common terminal for connecting the separating diode with the artificial line.

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USSR

UDC: 621.382.333.33.004.14

BELOVA, G. F., PARMENOV, Yu. A.

"Investigation of Coupling Between Elements of a Neuristor Line Based on p-n-p-n Structures"

Moscow, Radiotekhnika i Elektronika, Vol 17, No 11, Nov 72, pp 2399-2402

Abstract: A relation is found for the maximum distance between elements of a neuristor line at which operation of the line is still possible as a function of the current flowing through the triggering p-n-p-n structure. It is found that theoretical calculations for currents through the trigger element greater than 0.3 mA give maximum spacings which are lower than the experimentally observed spacings at which line operation is still possible. This is attributed to the two-dimensional nature of current flow in an actual line. When designing neuristor lines, the spacing between elements should be taken as 25-50% of the maximum to prevent signal fading in case of failure of one of the line elements.

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USSR UDC 621.396.6-181.5

BELOVA, G. F., GOROKHOV, V. N., KUZ'MIN, V. A., MOCHALKINA, O. R.

"Hybrid Neuristor Lines Based on PNPN Structures"

Kiev, IVUZ Radioelektronika, Vol 14, No 11, Nov 71, pp 1312-1318

Abstract: The paper presents the results of development and investigation of two kinds of neuristor lines based on planary PNPN structures: with coupling between elements over two common base regions, and over a single base. The principal electrical characteristics are measured as a function of the structure, the values of the passive elements and the mode of operation of the neuristors. It is found that the rate of propagation of a pulse in the neuristor line depends on the amplitude of the pulse and the external capacitance, and is independent of the load impedance. Pulse velocity in lines with two common bases is $2-5\cdot10^4$ m/s, while the corresponding speeds for lines with a single base are 800-1200 m/s. The rate of propagation in lines with a single common base is practically independent of the spacing between elements. When the diameter of the emitter in the N^+ region is doubled, the pulse velocity increases by a

USSR

BELOVA, G. F. et al., IVUZ Radioelektronika, Vol 14, No 11, Nov 71, pp 1312-1318

factor of 1.4 in lines of both types. The refractor period for lines of both types is the same -- 3 μs for a load impedance of 10 kΩ and zero capacitance. The refractor length is equal to 6 cm for a line with two common bases, and 0.2 cm for a line with a single common base. Pulse amplitude is determined by supply voltage and load impedance. The maximum possible pulse amplitude for elements separated by 110 μ is 3 V. The proposed neuristors can be comparatively easily made in integrated form as they can operate without external capacitances at load impedances of 10-20 kΩ. Six figures, bibliography of four titles.

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1/2 052 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--SYNCHRONIZATION OF LASER RADIATION BY ULTRASOUND -U-

AUTHOR--BELOVA, G.N.

B

COUNTRY OF INFO--USSR

SOURCE--AKUSTICHESKII ZHURNAL, VOL. 16, JAN.-MAR. 1970, P. 138-140

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--RUBY LASER, LASER RADIATION, LASER PULSE, ULTRASONIC EFFECT, ULTRASONIC FREQUENCY, LASER SYNCHRONIZATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/1562 STEP NO--UR/0046/70/016/000/0138/0140

CIRC ACCESSION NO--AP0106308

UNCLASSIFIED

2/2 052 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0106308

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STUDY OF THE EFFECT OF ULTRASONIC VIBRATICNS CN RUBY LASER RADIATION. IT IS FOUND THAT EXCITATION OF LONGITUDINAL VIBRATIONS IN THE RUBY CRYSTAL CAUSES A CHANGE IN THE TEMPORAL STRUCTURE OF THE LASER EMISSION PULSE. THE RADIATION ASSUMES THE CHARACTER OF A FAIRLY REGULAR SEQUENCE OF GROUPS CONSISTING OF A NUMBER OF PEAKS. THESE GROUPS APPEAR ONCE PER PERIOD OF THE ULTRASONIC VIBRATIONS DURING THE EXTENSION PHASE OF THE RUBY ROD. THE LENGTH OF THESE GROUPS VARIES SOMEWHAT, BUT LIES WITHIN THE LIMITS OF THE HALF PERIOD OF THE ULTRASONIC VIBRATIONS; THE MOST CHARACTERISTIC REPETITION FREQUENCY OF THE PEAKS IN THE GROUPS IS ABOUT 300 TO 408 KHZ. IT IS CONCLUDED THAT A SYNCHRONIZED EMISSION PULSE CONSITS OF PEAKS WITH HIGHER ENERGY VALUES THAN IN THE CASE OF RADIATION IN THE FREE LASING REGIME. FACILITY: AKADEMIIA NAUK SSSR, AKUSTICHESKII INSTITUT, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC: 615.361.014.413:681.3

KOMAROV, B. A., GORBOVITSKIY, Ye. V., BELOVA, I. A., and ZLOTNIKOV, V. P., All-Union Scientific Research Institute of Surgical Apparatus and Instruments

"An Apparatus for Deep Cooling of Biological Objects With Programmed Control"

Moscow, Meditsinskaya Tekhnika, No 1, 1971, pp 51-53

Abstract: A description (with photograph, line diagram, and specifications) of the KZ-8 apparatus designed by the All-Union Scientific Research Institute of Surgical Apparatus and Instruments for programmed cooling of bone marrow, blood, and other tissues, is given. When the actual temperature is different from that called for at a particular moment by the program, various mechanisms (pump, heaters) are activated at a signal from a 3-position regulator. When the actual temperature of the object is higher than that prescribed, the pump is switched on. A vacuum is created in a pipeline - heat exchanger - Dewar flask system and liquid nitrogen enters the heat exchanger which it cools upon evaporating. If the actual temperature is below that prescribed, the heaters are turned on. The heat exchanger is immersed in ethyl alcohol, petroleum ether, ethylene glycol, etc. into which containers with bone marrow, blood, etc. are set.

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USSR

UDC 547.853.7'854.9'867.2.01

BRITIKOVA, N. YE., BELOVA, L. A., CHKHIKVADZE, K. A., and MAGIDZON, O. YU., (DECEASED), All Union Scientific Chemical-Pharmaceutical Research Institute imeni S. Ordzhonikidze, Moscow

"Derivatives of 5-Aminoorotic Acid"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 2, Feb 73, pp 270-272

Abstract: 2,4,8-Trioxoderivatives of pyrimido-[5,4-d][1,3] oxazine have been synthesized and converted to esters and amides of 5-acetylaminoorotic acid. The acetyl group of 5-acetylaminoorotic esters hydrolyzes easily in acid medium yielding 5-aminoorotic esters; in contrast, the acetyl group of the 5-acetylaminoorotic amides does not hydrolyze easily.

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USSR UDC: 8.74

BAKONIN, V. N., BALUYEV, A. N., BELOVA, K. M., KURKOV, V. L., RABININ, V. N.

"Packet Processing System for the BESM-3M Computer"

V sb. Metody vychisleniy (Methods of Computations--collection of works), vyp. 7, Leningrad, Leningrad University, 1971, pp 139-147 (from RZh-Kibernetika, No 6, Jun 72, Abstract No 6V538)

Translation: The authors consider an operational system for packet processing of a stream of small problems. The system is a development of the "Avtooperator" system worked out at the Computing Center of the Siberian Department of the Academy of Sciences of the USSR. In accordance with this system, a supervisory program is placed in the memory of the BESM-3M to control packet processing, and each problem of the packet is provided with an instruction written in a special language. The supervisory program reads each instruction and prints out the number and time of reception of the problem on the alphanumeric printer. The instruction is then verified, translated into the internal language, and execution begins. It is noted that the supervisory program can model both operations in accordance with the set of codes on the control panel register and on the halt register.

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USSR

BAKONIN, V. N. et al., Metody vychisleniy, vyp. 7, Leningrad, Leningrad University, 1971, pp 139-147

However, if commutation between external devices, changing of magnetic tapes and so forth is required, the supervisory program signals to the operator and prints out the appropriate request on the alphanumeric printer. When a situation arises in which a client's problem is interrupted, the supervisory program prints out standard information on this interruption, performs the next point of the instruction, and returns control to the program of the problem. After a new interruption, the supervisory program goes on to the next point if there has been no special instruction to interrupt this order. Taking the problem from the computer, the supervisory program records its number, the date and elapsed time in a special register, and prints out the time of day and the reason for the removal. Reasons may be: 1) completion of a job in accordance with instructions; 2) lapse of requested time; 3) a situation has arisen which is not provided for in the instructions. The operation of the computer in the packet processing mode is described. Instructions on the supervisory program are given.

2/2

Nitrogen Compounds

USSR UDC 547.854.9.07

BRITIKOVA, N. YE., BELOVA, L. A., CHKHIKVADZE, K. A., and MAGIDSON, O. YU., (DECEASED), All Union Scientific Chemical-Pharmaceutical Research Institute imeni S. Ordzhonikidze, Moscow

"Synthesis of 5-Phenylamino Derivatives of Orotic Acid"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 2, Feb 73, pp 273-275

Abstract: Heating 5-bromoorotic acid with anizidine, aniline or p-chloroaniline in ethylene glycol at high temperature leads to a nucleophilic replacement of bromine and decarboxylation, yielding 5-phenylamino derivatives of uracyl. 5-Bromoorotic acid reacted with aromatic amines by the Ullman reaction in ethylene glycol, to give 5-phenylamino derivatives of orotic acid.

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USSR UDC 547.26'118

MANDEL'BAUM, YA. A., SOYFER, R. S., BELOVA, L. A., MEL'NIKOV, N. N.

"Synthesis of Derivatives of Aryl-S-(N-alkylcarbamoylmethyl)di- and trithiophosphates"

Leningrad, Zhurnal Obshchey Khimii, Vol XLII (CIV), No 1, 1972, pp 65-73

Abstract: A study was made of the possibility of synthesizing O-aryl-O-alkyl-S-(N-alkylcarbamoylmethy)dithiophosphates from O-aryl-O-alkylchlorothiophosphates and amides of thioglycolic acid (a) and from O-aryldichlorothiophosphates, amides of thioglycolic acid and sodium alcoholates in alcohol (b). One procedure resulted in greater than a 50% yield of the target compounds. A second procedure gives a very low yield as a result of prevalence of the side processes in the synthesis. A new series of O-aryl-S,S-di(N-alkylcarbamoylmethyl)trithiophosphates was synthesized from O-aryldichlorothiophosphates and Na-derivatives of thioglycolic acid. The reaction takes place with the formation of a series of side products. The compounds obtained have acaricidal and fungicidal activity. The formulas, some physical characteristics, yields and side compounds are presented for the various reactions in tabular form. The two synthesis methods used are represented as follows

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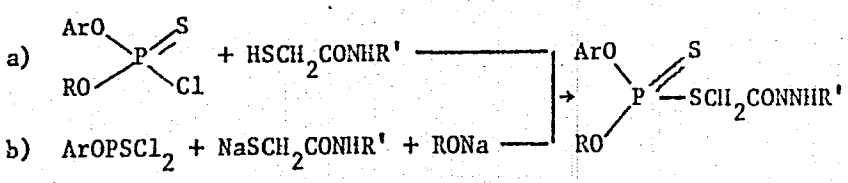
USSR

MANDEL"BAUM, YA. A., et al., Zhurnal Obshchey Khimii, Vol XLII (CIV), No 1, 1972, pp 65-73



2/2

UDC 547.26'118

USSR

MANDEL'BAUM, YA. A., SOYFER, R. S., BELOVA, L. A.

"Synthesis of Alkyl and Dialkylamides of O-phenyl-S-(N-Alkylcarbamoylmethyl)dithiophosphoric Acids"

Leningrad, Zhurnal Obshchey Khimii, Vol XLII (CIV), No 1, 1972, pp 62-65

Abstract: In order to find new pesticides and to study the dependence of biological activity on structure, the alkyl and dialkylamides of O-phenyl-S-(N-alkylcarbamoylmethyl)dithiophosphoric acids (I) were synthesized from the corresponding amides of O-phenylchlorothiophosphoric acid [Ya. A. Mandel'baum, et al., USSR Author's Certificate No 238554, 1968; Byull. izobr., No 10, 1969] and the Na derivatives of the amides of thioglycolic acid in alcohol [R. S. Soyfer, et al., USSR Author's Certificate No 255262, 1969; Byull. izobr., No 33, 1969]. The highest yields of compounds (I) were obtained from the dialkylamides of O-phenylchlorothiophosphoric acids (higher than 50%).

The compounds (I) were tested as insecticides, acaricides and fungicides. They have high activity as systemic acaricides, frequently exceeding the activity of the standard, and high activity as fungicides.

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USSR

UDC: 577.1:615.7/9

TREGUBENKO, I. P., SUKHACHEVA, Ye. I., BELOVA, M. N., NYATINA, O. A., MEN'-SHIKOVA, G. A., SEMENOV, D. I.

"Effect of Ethylenediaminetetracetic, Cyclohexylaminetetraacetic and Diethylenetriaminepentaacetic Acid Sodium Salts on the Behavior of Cadmium-115 in an Organism"

Tr. In-ta ekol. rast. i zhivotnykh. Ural'sk. fil. AN SSSR (Works of the Institute of Plant and Animal Ecology. Ural Affiliate, Academy of Sciences of the USSR), 1970, vyp. 68, pp 65-67 (from RZh-Biologicheskaya Khimiya, No 23, 10 Dec 70, Abstract No 23F2208)

Translation: The cadmium complex with ethylenediaminetetraacetic acid sodium salt is partially dissociated under conditions in the organism, whereas cadmium complexes with cyclohexylaminetetraacetic and diethylenetriaminepentaacetic acid sodium salts, which have higher constants of stability, are almost completely eliminated from the organism of rats within the first few days. Early application of the complexing agents appreciably reduces the deposition of cadmium in the tissues, and increases its elimination with

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USSR

TREGUBENKO, I. P., et al., Tr. In-ta ekol. rast. i zhivotnykh. Ural'sk. fil. AN SSSR, 1970, vyp. 68, pp 65-67

urine. Diethylenetriaminepentaacetic acid sodium salt has the most pronounced effect. Stable complexes of cadmium-115 are eliminated almost entirely through the kidneys, part of the isotope being selectively retained in the kidneys (23-48 percent of the residue in the organism), which may be utilized for irradiation of kidney tumors. From the authors' resume.

2/2

USSR UDC: 577.1:615.7/9

TREGUBENKO, I. P., SERENOV, D. I., SUKHACHEVA, Ye. I., MEN'SHIKOVA, G. A., BELOVA, M. N.

"Accessibility of Yttrium-91 Deposited in the Tissues of an Organism for Diethylenetriaminepentaacetic Acid Sodium Salt"

Tr. In-ta ekol. rast. i zhivotnykh. Ural'sk. fil. AN SSSR (Works of the Institute of Animal and Plant Ecology. Ural Affiliate, Academy of Sciences of the USSR), 1970, vyp. 68, pp 87-94 (from RZh-Biologicheskaya Khimiya, No 23, 10 Dec 70, Abstract No 23F2206)

Translation: The paper demonstrates the parallelism between the effectiveness of diethylenetriaminepentaacetic acid sodium salt and the concentration of yttrium-91 in the kidneys and liver. M. Sh.

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USSR UDC: 577.1:615.7/9

TREGUBENKO, I. P., SEMENOV, D. I., SUKHACHEVA, Ye. I., MENOSHIKOVA, G. A., BELOVA, M. N., TARAKHTIY, E. A.

"Accessibility of Radioactive Cerium for Extraction From an Organism by Diethylenetriaminepentaacetic Acid. Relationship Between the Quantity Extracted and That Contained in the Organism"

Tr. In-ta ekol. rast. i zhivotnykh. Ural'sk. fil. AN SSSR (Works of the Institute of Animal and Plant Ecology. Ural Affiliate, Academy of Sciences of the USSR), 1970, vyp. 68, pp 81-86 (from RZh-Biologicheskaya Khimiya, No 23, 10 Dec 70, Abstract No 23F2204)

Translation: The amount of cerium-144 extracted by the complexing agent in the daily urine of rats amounts to 1/10 of the quantity of the isotope contained in all soft tissues (the cerium in the skeleton does not participate in this process). This is the actual ratio for various periods after using the complexing agent (from the 8-th to the 126-th day of the experiment) in a dose of 100 μmoles in a rat. Repeated injection of the complexing agent does not change this ratio when the cerium extracted with the first injection is taken into account. From the authors' resumé.

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1/2 015 UNCLASSIFIED PROCESSING DATE--11DEC70

TITLE--ON THE THEORY OF A TRUNCATED HYPERBOLOID -U-

AUTHOR-(02)-BELOVA, N.A., UFLYAND, YA.S.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, PRIKLADNAYA MATEMATIKA I MEKHANIKA, NO 2, 70, PP 349-353

DATE PUBLISHED-------70

SUBJECT AREAS--MATHEMATICAL SCIENCES

TOPIC TAGS--ELLIPSOIDAL SHELL STRUCTURE, ELLIPTIC FUNCTION, ELLIPTIC INTEGRAL, INVERSE PROBLEM, INTEGRAL TRANSFORM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----FD70/6C5041/C02 STEP NO--UR/0040/70/000/002/0349/0353

CIRC ACCESSION NO--AP0142724

UNCLASSIFIED

2/2 015 UNCLASSIFIED PROCESSING DATE--11DEC70
CIRC ACCESSION NO--AP0142724
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CERTAIN TORSIONAL PROBLEMS READILY SOLVED IN ELLIPSOIDAL COORDINATES ARE DISCUSSED. THE CASE OF A TWO CAVITY TYPE ROTATION BYPERBOLOID TRUNCATED ON TOP BY AN ELLIPSOIDAL SURFACE IS INVESTIGATED FOR SOME PARTICULAR AND THE MORE GENERAL CONDITICNS USING A SPECIAL EXTENSION OF THE MELER-FOK (TRANSLITERATED) TRANSFORMATION FOR THE CASE OF A PARTIAL INTERVAL. THE FINAL SOLUTION IS FOUND ON THE BASIS OF A DEVELOPED INVERSION FORMULA. THE FORMULA MAY ALSO BE USEFUL FOR A SOLUTION BY THE METHOD OF INTEGRAL TRANSFORMATION IN A PARTIAL CASE OF NOT UNIFORM BOUNDARY CONDITIONS ON THE TOP OF THE HYPERBOLOID. THE DISCUSSION IS ILLUSTRATED BY AN EXAMPLE.

UNCLASSIFIED

USSR UDC 615.28 :632.9547.099

BELOVA, R. S., Saratov Scientific Research Institute of Rural Hygiene

"Some Data on the Toxicity of the Herbicide 2 ,4-Dichlorophenoxy-γ-Butyric Acid"

Moscow, Voprosy Pitaniya, No 6, Nov/Dec 71, pp 72-73

Abstract: Since residual amounts of 2,4-dichlorophenoxy-γ-butyric acid are sometimes present in portions of crops used as forage, the toxicity of the herbicides was tested on white rats given small daily doses of the herbicide for one year. Subsequent analyses revealed that 1/100 to 1/400 LD_{50} of the compound reduced the concentration of ascorbic acid and sulfhydryl groups in the liver, spleen, adrenal glands, and brain. It is concluded that a chronic intake of residual amounts of dichlorophenoxy-γ-butyric acid is toxic.

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USSR

UDC 613.2:632.95

BELOVA, R. S., and SOKOLOVA, L. A., Candidates of Biological Sciences, Saratov Scientific Research Institute of Rural Hygiene

"Toxicological and Hygienic Evaluation of the Herbicide 2.4 D_{α} Butyric Acid From the Point of View of Nutrition Hygiene"

Moscow, Gigiyena i Sanitariya, No 11, Nov 71, pp 36-39

Abstract: In an effort to determine the toxicity of 2.4 D_{α} butyric acid (2.4 DM), a herbicide, experiments were conducted with rats of both sexes to study its cumulative properties and to determine the threshold dosage for rats. The cumulative properties were studied in a 3-month experiment, using doses of 208 and 104 mg/kg (1/10 and 1/20 LD_{50}). Repeated doses rarely resulted in death; some animals survived 4 LD_{50}, but presented numerous functional disorders in the central nervous system, pituitary-adrenal system, liver, and kidneys, and lowered reserves of ascorbic acid and SH groups. The cumulative activity of 2.4 DM was considered low. The threshold dosage was determined in a 14-month experiment, using doses ranging from 20.8 to 3.4 mg/kg (1/100 to 1/600 LD_{50}). The weight of male rats was affected by both large and small doses; no change was observed in females. The cumulative threshold index showed that the central nervous system quickly adapted to all doses. Some liver and

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USSR

BELOVA, R. S., and SOKOLOVA, L. A., Gigiyena i Sanitariya, No 11, Nov 71, pp 36-39

kidney disorders resulted from small doses. All doses except 3.4 mg/kg lowered ascorbic acid and SH group reserves in the liver, spleen, and brain; prolonged administration of small doses resulted in greater changes in ascorbic acid content of organs than brief administration of large doses. Doses of 20.8 and 5.2 mg/kg impaired fertility in both males and females, which was passed on to the second generation. Teratogenic effects were observed in the fourth generation. It was concluded that the threshold dosage for rats is 3.4 mg/kg. Because it is known to disintegrate rapidly in the environment, 2.4 DM is not considered dangerous for agricultural use.

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1/2 027 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--THE CLINICAL PICTURE OF EYE AFFECTIONS OCCURRING UNDER THE EFFECT OF SULFUR COMPOUNDS -U-

AUTHOR--DELOVA, S.F.

COUNTRY OF INFO--USSR

SOURCE--KLINICHESKAYA MEDITSINA, 1970, VOL 48, NR 3, PP 90-92

DATE PUBLISHED----------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--VISION, HYDROGEN SULFIDE, EYE DISEASE, CARBON COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/1794 STEP NO--UR/0497/70/048/003/0090/0092

CIRC ACCESSION NO--AP0129162

UNCLASSIFIED

2/2 027 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0129162

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AT ONE OF THE PRODUCTIONS OF ARTIFICIAL FIBER THE AUTHOR INVESTIGATED THE VISION IN 61 WORKERS OF THE SPINNING SHOP. INASMUCH AS THE PLANT WAS NEW AND THERE WERE TECHNICAL SHORTCOMINGS, INTO THE WORK SHOP THERE PENETRATED HYDROGEN SULFIDE AND CARBON BISULFIDE IN A QUANTITY EXCEEDING THE MAXIMALLY PERMISSIBLE CONCENTRATIONS. AS THE RESULT OF THIS THERE OCCURRED OCCUPATIONAL DISEASES OF THE EYE ACCOMPANIED BY INFLAMMOTORY MANIFESTATIONS OF THE ANTERIOR REGION OF THE EYE AND AFFECTION OF THE OCULAR NERVE, AS WELL AS A REDUCTION OF THE WORKING CAPACITY IN SOME CASES. FACILITY: INSTITUTA GIGIYENY TRUDA I PROFZABOLEVANIY, AMN SSSR, MOSKVA.

UNCLASSIFIED

1/2 028 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--STUDY OF DYEING LAVSAN FIBER WITH DIRECT DYES IN THE PRESENCE OF HEXAMETHYLENE DIISOCYANATE USING IR SPECTROSCOPY -U-

AUTHOR-(03)-ERESHCHENKO, A.G., BELOVA, T.B., GELLER, B.E.

COUNTRY OF INFO--USSR

B

SOURCE--IZV. VYSSH. UCHEB. ZAVED., TEKHNOL. TEKST. PROM. 1970, (1), 88-92

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS, CHEMISTRY

TOPIC TAGS--POLYETHYLENE TEREPHTHALATE, SYNTHETIC FIBER, ORGANIC ISOCYANATE, DYE, IR SPECTRUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3005/0774 STEP NO--UR/0324/70/000/001/0088/0092

CIRC ACCESSION NO--AT0132872

UNCLASSIFIED

2/2 028 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AT0132872

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. LAVSAN (POLY(ETHYLENE TEREPHTHALATE)) (I) FIBERS WERE ACTIVATED BY IMPREGNATION AT 25DEGREES WITH A 5PERCENT SOLN. OF OCN(CH SUB2) SUB6 NCO IN ACETONE, WHICH CONVERTED THE END GROUPS TO NCO. THE ACTIVATED I WAS THEN DYED READILY WITH DIRECT LIGHTFAST VIOLET 2KM. THE DYE REACTED WITH THE END GROUPS GIVING STABLE CO SUB2 NH(CH SUB2) SUB6 NHCO SUB2 R GROUPS (R IS THE DYE RESIDUE), WHICH WAS VERIFIED BY IR SPECTROSCOPY. I FIBERS TREATED WITH PHNCO COULD NOT BE DYED WITH DIRECT DYES. FACILITY: TASHKENT. INST. TEKST. LEGK. PROM., TASHKENT, USSR.

UNCLASSIFIED

USSR

UDC: 616.45-001.1/.3-07:616.831.4/.8-008.9]4.52

BELOVA, T. I., and BUNKINA, L. S., Laboratory of General Physiology of the Central Nervous System, Institute of Normal and Pathological Physiology, Academy of Medical Sciences USSR, and Chair of the First Moscow Medical Institute imeni I. M. Sechenov

"Histochemical Study of Catecholamines in the Oral Region of the Brain Stem Under Normal Conditions and After Rapidly Developing Stress"

Moscow, Byulleten' Eksperimental'noy Biologii i Meditsiny, Vol 70, No 12, Dec 70, pp 93-96

Abstract: Fluorescence of the locus caerulus, substantia nigra, substantia grisea centralis, and adjacent structures of the brain stem was studied in normal mice and in mice subjected to stress induced by rapid asphyxiation. The color of the fluorescence and consequent composition of the catecholamines varies from structure to structure. The locuscaerulus and substantia nigra, for example, fluoresce bright green, an indication of their high content of norepinephrine and dopamine. Mild stress was found to reduce the intensity of the fluorescence in all of the

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USSR

BELOVA, T. I., and BUNKINA, L. S., Byulleten' Eksperimental'noy Biologii i Meditsiny, Vol 70, No 12, Dec 70, pp 93-96

brain structures studied, while severe stress increased it, especially in the locus caerulus. The sharp response of the latter to brief asphyzia suggests that it is intimately involved in the stress states resulting from impairment of respiration.

1/2 021 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--HEXOKINASE AND PHOSPHOHEXOISOMERASE ACTIVITY IN RATS AFTER EXTENDED PERIODS OF ADMINISTRATION OF STREPTOMYCIN -U-

AUTHOR-(03)-BARNA, K., BARNOVA, E., BELOVA, V.

B

COUNTRY OF INFO--CZECHOSLOVAKIA, USSR

SOURCE--PRAGUE, CESKOSLOVENSKA FARMACIE, VOL 19, NO 1, FEB 70, PP 12-16

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ENZYME ACTIVITY, STREPTOMYCIN, CARBOHYDRATE METABOLISM, YEAST

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1999/0357 STEP NO--CZ/0052/70/019/001/0012/0016

CIRC ACCESSION NO--AP0122551

UNCLASSIFIED

2/2 021 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0122551

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THERAPEUTIC DOSES OF STREPTOMYCIN MAY DAMAGE CARBOHYDRATE METABOLISM OF MACROORGANISMS. 8,000 UNITS OF STREPTOMYCIN PER 100 G OF WEIGHT WAS ADMINISTERED TO RATS SUBCUTANEOUSLY FOR 10, 20, AND 30 DAYS. ACTIVITY OF YEAST HEXOKINASE WAS AFFECTED BY STREPTOMYCIN IN THE RATS; IN VITRO NO INTERFERENCE WITH THE ACTIVITY WAS OBSERVED. PHOSPHOHEXOISOMERASE ACTIVITY WAS INCREASED BY STREPTOMYCIN AFTER 30 DAYS OF ADMINISTRATION IN VIVO, BUT NOT IN VITRO.

FACILITY: DEPARTMENT OF MEDICAL CHEMISTRY, MEDICAL FACULTY. P. J. SAFARIK UNIVERSITY.

UNCLASSIFIED

USSR UDC 538.214:546.723'267

BELOVA, V. I., and SEYFER, G. B., Institute of General and Inorganic Chemistry Imeni N. S. Kurnakov, Acad. Sc. USSR

"Magnetic Susceptibility of Ferricyanides"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 7, Jul 72, pp 1474-1480

Abstract: Magnetic susceptibility was measured in temperature range 80-300°K for ferricyanide complexes with mono-, di-, and trivalent cations and for polycyanides containing another element from the first transition row, in addition to iron. The effect of the cations on magnetic properties of the ferri complexes of iron (III) are negligible. The polycyanides studied have a complex magnetic structure. Manganese and cobalt complexes show antiferromagnetic interaction between the magnetic centers, while nickel and copper exhibit the ferromagnetic activity.

- END -

CSO: 1841-W

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USSR

UDC 669.295:538.221

BELOVA, V. M., NIKOLAYEV, V. I., and STUCHEBNIKOV, V. M., Moscow State University imeni M. V. Lomonosov

"On Superparamagnetism of Highly Coercive Ticonal-Type Alloys"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 34, No 2, Aug 72, pp 646-649

Abstract: Results of an experimental investigation of the magnetic properties of Ticonal-type alloys -- YuNDK35T5 (single crystal), YuNDK38T8 and YuNDK35T5 (polycrystal) -- are discussed. The temperature dependence of specific magnetization in different external magnetic fields and the magnitude of superparamagnetic contribution σ_{sp} to the specific magnetization are discussed by reference to diagrams. The usual type of Langevian model qualitatively describes the most characteristic experimental dependences of the magnetic moment, confirming the presence of superparamagnetic properties in dispersion hardening alloys of the Fe-Ni-Co-Al-Ti system. Two figures, one table, two formulas, eight bibliographic references.

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1/2 022 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--HETEROGENEOUS CATALYSIS IN A GLOW DISCHARGE -U-

AUTHOR-(03)-YEREMIN, YE.N., MALTSEV, A.N., BELOVA, V.M.

B

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 190(3), 629-31 (PHYS CHEM)

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--HETEROGENEOUS CATALYSIS, METAL CATALYST, AMMONIA, CHEMICAL SYNTHESIS, CHEMICAL REACTION RATE, GLOW DISCHARGE, CHEMICAL STABILITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1984/1573 STEP NO--UR/0020/70/190/003/0629/0631

CIRC ACCESSION NO--AT0100191

UNCLASSIFIED

2/2 022 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AT0100191

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF INTRODUCING METAL CATALYSTS (PT, AG, AND CU IN THE FORM OF A SCREEN SHAPED INTO A ROLL) DIRECTLY INTO THE INTERELECTRODE REGION SO THAT THEY ARE IN THE PLASMA DURING DISCHARGE WAS STUDIED ON THE REACTION RATE AND STATIONARY NH SUB3 CONCN. DURING THE SYNTHESIS OF NH SUB3 FROM A N-H MIXT. THE EXPTS. WERE MADE AT 50 AND 100 TORR FOR A CURRENT OF 35 MA AND A GAS FLOW RATE OF 1.2-50 L.-HR. THE CATALYSTS CAUSED A MARKED INCREASE IN THE REACTION RATE, AND THE NH SUB3 CONCN. WAS INCREASED 25 TIMES OVER THAT WITHOUT A CATALYST. IN ADDN., THE PRESENCE OF A CATALYST RETARDS THE DECOMPN. OF NH SUB3. THE PHENOMENON IS ATTRIBUTED DIRECTLY TO THE DIFFERENCE IN THE MECHANISM FOR THE CATALYST REACTION IN THE DISCHARGE: THE GENERATION OF ACTIVE PARTICLES IN THE DISCHARGE PLASMA AND THE SYNTHESIS AND STABILIZATION OF THE NH SUB3 MOLS. ON THE SURFACE OF THE HETEROGENEOUS CATALYST.

UNCLASSIFIED

USSR

UDC 678.84.019.86

BELOVA, V. V., PRIDACHINA, N. N., POPOVA, A. I., and SERENKOV, V. I.

"Radiolysis of Polysiloxane Resin"

Moscow, Plasticheskiye Massy, No 3, 1971, pp 24-26

Abstract: Structural rearrangements occurring in solidified silicon organic resin under the influence of ionizing radiation were studied by IR spectroscopy, mass-spectroscopy, thermomechanical, and physicomechanical techniques. Polymethylsiloxane resin is formed by cohydrolysis of methyltrichlorosilane and dimethyldichlorosilane yielding cyclic polymers with silsesquioxane bonds. It was determined that radiation leads to further structuralization of already solidified polymer. This is due to the formation of new ≡Si-O-Si≡ bonds, methylene and ethylene bridges and changes in the cyclic structure pattern of the polymer. These polymers become more durable because of the disappearance of organic radicals and increase in the number of trimer cycles. Temperature increase during radiolysis enhances the rate and degree of these processes.

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USSR

UDC 616.832.9-002.931.611.3-092.9

AVTSYN, A. P., BEREZINA, Ye. K., KENIG, E. E., DURSUNOVA, S. M., BELOVA, Ye. M., SHTEGEL'MAN, and ZHUKOV, V. G., Scientific Research Institute of Human Morphology, Academy of Medical Sciences USSR, and All-Union Scientific Research Institute of Antibiotics

"An Experimental Model of Leishmanial Meningoencephalitis"

Moscow, Antibiotiki, No 10, 1971, pp 885-888

Abstract: Intercerebral inoculation of mice with Leishmania donovani, strain T-1, obtained from dogs, and other strains obtained from reptiles resulted in the typical clinical picture of meningoencephalitis. The reaction to Leishmania and to the trauma was evident at the injection site in 14 days and 40 days later there were signs of inflammation of the meninges. The process became generalized in the central nervous system after 160 days. Lymphoid infiltrates appeared in the pia mater and small granulomas in the brain tissue proper. Within the lymphoid infiltrates and granulomas, Leishmania were observed. The granulomas consisted mainly of epithelioid cells. Actual penetration of Leishmania into nerve cells could not be conclusively demonstrated. The ease with which meningoencephalitis can be induced in mice with Leishmania makes these animals suitable for use in experimental chemotherapy.

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1/2 011 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--FATTY ACID COMPOSITION OF BUCKWHEAT LIPIDS -U-

AUTHOR-(03)-BELOVA, Z.A., NECHAYEV, A.P., SEVERINENKO, S.M.

COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., PISHCH. TEKHNOL. 1970, (1), 32-3

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES, CHEMISTRY

TOPIC TAGS--CEREAL CROP, CHEMICAL ANALYSIS, LIPID, FATTY ACID, SAPONIFICATION, GAS CHROMATOGRAPHY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3004/0792 STEP NO--UR/0322/70/000/001/0032/0033

CIRC ACCESSION NO--AT0131386

UNCLASSIFIED

2/2 011 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AT0131386

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FATTY ACIDS, OBTAINED BY SAPON. OF ETHER EXTS. FROM GROUND BUCHWHEAT GRAINS (3 VARIETIES), WERE ANALYZED BY GAS CHROMATOG. THE ACID COMPNS. WERE: PALMITIC 16.1-20.6, STEARIC 0.7-1.7, OLEIC 38.0-39.4, LINOLIC 37.8-39.3, LINELENIC 0.9-3.8, AND GONDOIC 1.2-1.8PERCENT. MYRISTIC, PALMITOLEIC, AND SATD. C SUB14, C SUB15, AND C SUB20 ACIDS WERE PRESENT IN SMALLER THAN 1PERCENT. CONTENTS OF SATD. AND UNSATD. FATTY ACIDS WERE 17.9-21.6 AND 78.4-82.1PERCENT, RESP. FACILITY: MOSK. TEKHNOL. INST, PISHCH. PROM., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 621.384.612

ADO, YU. M., BELOVINTSEV, K. A., BESSONOV, YE. G., and CHERENKOV, P. A.

"Colliding Electron-Positron Beams in a Synchrotron"

Moscow, Fotomezonnyye i Fotoyadernyye Reaktsii i Metodika Issledovaniya na Sinkhrotrone. Trudy Ordena Lenina Fizicheskogo Instituta im. P. N. Lebedeva Akademii Nauk SSSR, Vol 54, 1971, pp 130-148

Abstract: The article generalizes the main results of research on a method for obtaining colliding electron-positron beams in a synchrotron. There is a detailed discussion of questions related to the effect of a time-varying, driving magnetic field and a low injection energy level on the main parameters of the particle storage process -- radiation damping of oscillation amplitudes, beam lifetime, and storage rate. A description is given of the results of experiments for studying the particle storage process and obtaining colliding electron-positron beams on the FIAN [Physics Institute imeni P. N. Lebedev, Academy of Sciences USSR] 280-Mev synchrotron. There is also a description of work done in the USSR and abroad to use the counterbeam method for synchrotrons with an energy of ~ 1 Gev or more, including the Italian

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ADO, YU. M., et al., Fotomezonnyye i Fotoyadernyye Reaktsii i Metodika Issledovaniya na Sinkhrotrone. Trudy Ordena Lenina Fizicheskogo Instituta im. P. N. Lebedeva Akademii Nauk SSSR, Vol 54, 1971, pp 130-148

1.5-Gev Adone positron storage ring, the 6-Gev Cambridge electron synchrotron project in the United States, and the cascade storage system developed by staff members of the Photomeson Process Laboratory and Accelerator Laboratory of FIAN. The particle storage process is divided into two stages in the cascade system: 1) particle storage in a booster synchrotron, 2) transfer of electron and positron beams to the main synchrotron at intervals equal to the booster particle storage time. Another variant of the cascade system permits a significant increase in the electron beam conversion ratio through the use of high-energy electrons accelerated in the main synchrotron.

USSR

BELOVITSKIY, G. Ye., KOLESNIKOVA, L. N., and FRANK, I. M., Institute of Nuclear Research of the Academy of Sciences USSR

"Angular Distribution of 13.7-Mev Neutrons in Elastic Scattering by $Pb^{206, 207, 208}$ Isotopes"

Moscow, Yadernaya Fizika, No 4, Apr 72, pp 662-665

Abstract: The differential cross sections for elastic scattering of 13.7-Mev neutrons by $Pb^{206, 207, 208}$ isotopes were measured and compared. All measurements were conducted under identical conditions. The angular distributions for the three isotopes were the same within the limits of the measurement accuracy (~20%). This is explained by the fact that neutron scattering by heavy nuclei is basically potential scattering. A comparison of the experimental data with calculations based on the optical model yielded satisfactory agreement. The agreement was best for scattering angles less than 110° but the experimental cross sections were higher than the theoretical cross sections for larger angles. This is attributed to the fact that a correction for multiple scattering was not introduced into the experimental data. Since the lead isotopes behave identically within the limits of the experimental accuracy, it is concluded that the good approximation of the experimental data

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BELOVITSKIY, G. Ye., et al., Yadernaya Fizika, No 4, Apr 72, pp 662-665

to the theoretical curve supports the validity of the experimental determination not only of the relative but also of the absolute values of the differential cross sections of the elastic scattering that were obtained. The similarity of the angular distributions for the three isotopes is said to be caused by the fact that elastic scattering by heavy nuclei for neutrons with energies of about 14 Mev is basically potential and is therefore not greatly different when the number of nucleons changes by 1-2 units.

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USSR

BELOVITSKIY, G. Ye.; KOLESNIKOVA, L. N.; FRANK, I. M. (Institute of Nuclear Research, USSR Academy of Sciences)

"Inelastic Scattering of Neutrons with an Energy of 13.7 Mev by Isotopes of Lead"

Moscow, Yadernaya Fizika; April, 1972; pp 666-9

ABSTRACT: The authors measured the energy spectra for the inelastic scattering of 13.7 Mev by $Pb^{206,207,208}$ isotopes. A well-defined group corresponding to 2.6-Mev (3^-)-level excitement was observed in all the energy spectra. The angular distributions of the neutrons for the inelastic scattering with excitation of the well-known (3^-)-level in $Pb^{206,207,208}$ agree within the limits of accuracy of the measurements. The angular distributions were compared with ones calculated for the optical model in a distorted wave approximation. The value of the octupole deformation parameter $\beta_3 = 0.16 \pm 0.02$ was obtained for Pb^{208}.

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USSR

AKSEL'ROD, I. R., BELOYUS, L. F.

"A Dialogue with the SIRIUS System"

Vychisl. mat. i Vychisl. Tekhn [Computer Mathematics and Equipment -- Collection of Works], No 2, Khar'kov, 1971, pp 68-77, (Translated from Referativnyy Zhurnal, Kibernetika, No 3, 1972, Abstract No 3 V533 by the author's).

Translation: The text is presented from a dialogue between the author's and the SIRIUS conversational programming system at the computer center of FTINT, Acad. Sci. UkSSR in January of 1971. Some technical characteristics of the system were presented.

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BELOYUSOV, Ye. G.

"Some Problems in the Theory of Convex Sets and Integer Programming"

Issled. po mat. Ekon. i Smezh. Vopr. [Studies in Mathematical Economics and Related Problems -- Collection of Works], Moscow University Press, 1971, pp 207-276, (Translated from Referativnyy Zhurnal, Kibernetika, No 3, 1972, Abstract No 3 V432 by Yu. Finkel'shteyn).

Translation: The author begins (in Chapter 1) by studying a number of properties of convex sets. The basis of all studies here is the fact that each convex unlimited set contains a ray. The significant portion of Chapter 1 is analysis of regular functions f(x). Function f(x), fixed in the set $A(A \subset E^n)$ is called the regular R_1 in A if one of the two following (mutually exclusive) conditions is fulfilled: 1) $\sup_{x \in A} f(x) = \lambda < +\infty$, , 2) there is a closed ray $l \subset A$ such that $\sup_{x \in l} f(x) = +\infty$. A table of classes of regularity is composed for various classes of functions (linear, continuous, evenly continuous, convex, convex continuous, convex evenly continuous, concave, concave continuous, concave evenly continuous) and various classes of sets (convex, polyhedral, finite cones, convex closed cones, etc.). A table

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BELOYUSOV, Ye. G., Issled. po mat. Ekon. i Smezh. Vopr., Moscow University Press, 1971, pp 207-276.

is also composed for another definition (regularity R_2). Chapter 2 studies the distribution of integer points in the convex sets. One of the basic concepts here is the concept of even distribution of integer points in set A. The author states that the integer points in A are distributed evenly if $\sup_{x \in A} \rho(x, A_n) = \varepsilon_0 < +\infty$ (here A_i is the set of integer points of A). Chapter 3 studies two properties of extreme problems -- the unlimitedness of the goal function and solvability -- and studies the problem of the extent to which the presence of these properties in the "continuous" problem

max $\{f(x) \mid x \in A\}$ draws them to the corresponding integer problem

max $\{f(x) \mid x \in A_n\}$. A classification of the results produced is presented with respect to classes of functions f and sets A (Table 1).

1/2 014 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--CERTAIN REGULARITIES OF THE STRENGTH DISTRIBUTION IN PYROCERAMICS -U-

AUTHOR-(04)-BELOIVAN, A.F., BEREZANSKIY, V.V., ISAKHANOV, G.V., ZHURAVEL, A.YE.

COUNTRY OF INFO--USSR

SOURCE--PROBLEMY PROCHNOSTI, VOL. 2, APR. 1970, P. 74-78

DATE PUBLISHED----APR 70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--QUALITATIVE ANALYSIS, PYROCERAM, QUANTITATIVE ANALYSIS, BENDING STRENGTH

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/0144 STEP NO--UR/3663/70/002/000/0074/0078

CIRC ACCESSION NO--AP0123916

UNCLASSIFIED

2/2 014 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0123916

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STUDY OF THE TRANSIENT STRENGTH OF A PYROCERAMIC AS MEASURED ON CYLINDRICAL AND PRISMATIC SAMPLES SUBJECTED TO STATIC BENDING. THE RELATIONSHIPS BETWEEN THE STRENGTH OF THE PYROCERAMIC ON THE ONE HAND AND THE SHAPE AND DIMENSIONS OF THE SAMPLE, AND TYPE OF TESTING ON THE OTHER, ARE ESTABLISHED. QUALITATIVE AND QUANTITATIVE ESTIMATION IS MADE OF THE OBSERVED DISPERSION OF STRENGTH VALUES WITH RESPECT TO A NORMAL VALUE. FACILITY: AKADEMIIA NAUK UKRAINSKOI SSR, INSTITUT PROBLEM PROCHNOSTI, KIEV, UKRAINIAN SSR.

UNCLASSIFIED

USSR UDC 622.011.43

BERDENNIKOV, N. I., CHIZHOVA, M. V., and BELOZEROV, A. A.

"Concerning the Study of Some Effective Parameters of Real Media on the Basis of Data of Seismic Observations in Boreholes"

Leningrad, Vopr. Dinamich. Teorii Rasprostr. Seysmich. Voln -- Sbornik (Questions of the Dynamic Theory of the Propagation of Seismic Waves -- Collection of Works), Nauka, No 11, 1971, pp 124-135 (from Referativnyy Zhurnal, Mekhanika, No 2, Feb 72, Abstract No 2V795 by Ye. I. Lyuke)

Translation: Consideration is given to the possibility of utilizing some effective parameters of a medium, that were obtained on the basis of vertical seismic profiling, for refining an effective seismic model of a cross section. A procedure is proposed for determining the effective coefficients of absorption for various intervals of the cross section, which are established with joint analysis of the amplitude curves, the curve of the apparent resistences ρ_K of the stratum velocities, and other physical and stratigraphic properties of the cross section. The effective coefficient of absorption for a direct wave $\bar{\alpha}$ is determined according to the formula

$$\frac{A_i}{A_1} = \frac{L_1}{L_i} = e^{-\bar{\alpha}(H_i - H_1)},$$

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BERDENNIKOV, N. I., et al., Vopr. Dinamich. Teorii Rasprostr. Seysmich. Voln -- Sbornik, Nauka, No 11, 1971, pp 124-135

where H_i is the depth of the observation point, L_1/L_i is the relative geometric divergence of the direct-wave front. With such determination, in coefficient $\bar{\alpha}$ is included the effect of passage of the wave through thin layers; this effect is characterized by the passage coefficient $1 \pm k_1$. As a result of failure to account for thin stratification, $\bar{\alpha}$ may be overstated in comparison to the average stratum absorption $\sum H_i \alpha_i / \Delta H$, if the determination interval does not contain a gradient of accoustic rigidity, or if the accoustic rigidity increases with depth. If the determination interval is characterized by a negative gradient of accoustic rigidity, coefficient $\bar{\alpha}$ will be understated in comparison to the average-stratum coefficient of absorption. The effective absorption coefficient of a reflected wave $\bar{\alpha}'$ differs from $\bar{\alpha}$ due to a different direction of the incident ray and the reflected ray. Coefficient $\bar{\alpha}'$ is determined from the relationship of the amplitudes of the direct wave and the reflected wave at a given point of observation.

$$\frac{A_{refl}}{A_{dir}} = \frac{L_{dir}}{L_{refl}} K_1^{-2\bar{\alpha}' - 2\Delta h},$$

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BERDENNIKOV, N. I., et al., Vopr. Dinamich. Teorii Rasprostr. Seysmich. Voln -- Sbornik, Nauka, No 11, 1972, pp 124-135

where k is the coefficient of reflection from the boundary which shapes the given wave; Δ h is the distance from the observation point to the reflecting boundary. On the basis of observation at a series of points, it is possible to determine the parameters of α' and k. Experimental determination of the values of k, α and α', conducted within a large volume, showed that the reflection coefficients k are determined with sufficient stability with an error of 10-15%. A considerable difference is ascertained between the absorption coefficients along a direct wave α and along a reflected wave α' for the same intervals of cross section. The values of α considerably exceed the values of α'. Consequently, when conducting calculations of wave fields, it is necessary to introduce absorption parameters which depend upon the wave type.

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USSR B UDC 772.99:535

BELOZEROV, A. F., CHERNYKH, V. T.

"The Use of Holograms With an Optical Image of the Object for Recording Inhomogeneities on a Zender-Mach Interferrometer"

Moscow, Zhurnal Nauchnoy i Prikladnoy Fotografii i Kinematografii, Vol 15, No 4, 1970, pp 281-283

Abstract: Holograms with an optical image of a body were obtained on a Zender-Mach interferrometer. Coupling of the work zone of the inhomogeneity under investigation was effected by means of two optical systems installed in the receiving part of the interferrometer. Simultaneously with formation of the image of the body in the plane of the holomgram, each of the optical systems created a signal pencil of rays and a reference pencil of rays. In the first variant of the circuit the reference pencil of rays passed through the peripheral part of the objective, yielding an optical image of the body. In the second variant, the reference pencil was directed into the plane of the hologram by means of flat mirrors, bypassing the objective which couples the work zone with the plane of the hologram. Selection of the appropriate optical elements permitted the dimensions of the hologram to be decreased substantially in comparison

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BELOZEROV, A. F., CHERNYKH, V. T., Zhurnal Nauchnoy i Prikladnoy Fotografii i Kinematografii, Vol 15, No 4, 1970, pp 281-283

with the dimensions of the work field of the interferrometer. The use of focusing optics permitted sharp contours of the body of the restored image to be obtained in reconstruction of the hologram. This permits error to be reduced in quantitative evaluation of the inhomogeneity. The necessity of using a focusing optical system in the investigation of transparent inhomogeneity is indicated.

S/019/61/000/018/071/073
A152/A126

AUTHORS: Belozerov, A.N.; Grodko, L.N.; Litvakov, B.M.

TITLE: Method of eliminating resonance in landing helicopters

PERIODICAL: Byulleten' izobreteniy, no. 18, 1961, 59

TEXT: Class 62b, 40_{11}. No. 141391 (646533/27 of December 7, 1959). 1) A method of eliminating resonance in landing helicopters, based on the utilization of damping the landing gear by hydraulic means, the distinctive feature of which consists in that, for the purpose of improving landing gear damping characteristics one reduces the dry friction. 2) An alternate method in which the rate of damping is increased in the return motion of the shock-absorbing struts. 3) An alternate method in which the shock-absorbing struts are fitted with jet nozzles, which reduce the area of the apertures for the passage of liquid each time the speed of the rod drops. 4) An alternate method which makes use of a system of liquid flow-over from one shock-absorbing strut to the other, and a separation of the right and left struts by a piston centered by springs.

Card 1/1

BELOZEROV, A.N.

SECRET

Name	Specialty	Associations	OKB Association	Education	Remarks
Alperovich, I. G.	Engine installation	--	OKBMGL, 1959-1965	--	Coauthor of 1959 book on MI-1A helicopter
Alperovich, V. B.	Helicopter design	--	OKBMGL, 1962-1970	--	Chief Engineer "constructing" Ka-22 Vintokryl; listed on Ka-26 State Prize nomination, 1970
Andreyeva, Nadezhda N.	Aircraft and helicopter design	OKBIAN, 1944-1947; TsAGI, 1934-1940	--	--	Engineer, involved in OOK, TsAGI A7 and A12 work, 1930's
Antonov, Dmitriy Ivanovich	Propellers in autorotation	TsAGI, 1951-1957; LII, 1945; TsAGI, 1932-1937	--	--	Deceased, 1957. OOK, TsAGI, 1934-1937; worked on TsAGI 1-EA and 3-EA c. 1930
Artamonova, L. V.	Unknown	--	Possibly OKBMGL, 1967	--	Engineer, contributed calculations for Mil's book
Babadzhanova, L. L.	Unknown	--	OKBMGL, 1963	--	Leading engineer
Babushkin, A. S.	Unknown	--	--	--	Was thanked in Izakson's book, 1964
Bakhov, O. P.	Rotor blade shock absorber	--	Possibly OKBMGL, 1964-1967	--	Engineer, coauthor with L. N. Grudko

"Biographic Information on Helicopter Design Activities and Associated Resources of the Helicopter Design Bureaus (OKB's) of M. L. Mil and N. I. Kamov."

SOURCE: AIR/AVIATION/ENG 195-71-1-71, March 1971

SECRET

Name	Specialty	Associations	OKB Association	Education	Remarks
Belausov, Eduard					See Belanosov, Eduard
Belozerov, A. N.	Vibration damping for helicopters	--	Possibly OKBMML, 1959		Coauthor with L. N. Grodko
Benov, Sergey A.	Helicopter design	Zavod 387/154, 1944	OKBYAS, 1956	--	Designer on Yak 24
Besklubov, V.	Prototype construction	--	OKBMML, 1958	--	
Birman, Ya. N.	Coating and plating aircraft metal parts	--	--	--	Association unknown; coauthor with A. S. Malakhovskiy in 1967
Biryulin, Viktor Ivanovich	Coaxial rotor helicopter design	Zavod 18, NKAP, 1945; Zavod 39, NKAP, 1943; Special (Osoboye) Design Bureau, NKAP*, 1941	OKBKGI, 1958	--	Engineer-Designer, worked on Ka-15 and Ka-18
Blok, Aleksander Nikhaylovich	Measuring coconicity of rotors	Zavod 1**, NKAP, 1941	Possibly OKBMML, 1960	--	Coauthor with V. P. Lapisov.
Bogatyrev, B. V.	Strength calculation, airframe design, blade strength	MAI, 1958; TsAGI, 1934-1937	--	CIS, 1958, MAI	Head of Team 5, OOK, TsAGI, following Bakhur
Boshenyatov, S. G.	Unknown	--	OKBMM, 1957	--	Engineer

*Special Design Bureau of NKAP appears to have been Ilyushin's d

**Zavod 1 was the location A. I. Mikoyan's design group in 1941.

"Biographic Information on Helicopter Design Personnel",

Activities and Associated Resources of the Helicopter Design Bureaus (OKB's) of M. L. Mil and N. I. Kamov,

SO: AIR/HAVEST/PHS 185-71-1-71, March 1971

SECRET

USSR UDC 532.593

BELOZEROV, B. S.

"On a Theory of Wave Motions of a Liquid of Infinite and Finite Depth"

Rostov-na-Donu, Matematika, nekotor. yeye pril. i metodika prepodav. (Mathematics, Certain of Its Applications and the Method of Instruction, Collection of Works), 1972, pp 323-326 (from Referativnyy Zhurnal -- Mekhanika, No 4, 1973, Abstract No 4B529 by A. K. Nikitin)

Translation: The results obtained by the author in 1968 and 1969 for the solution of the linear Cauchy-Poisson problem and for the characteristic oscillation of viscous, noncompressible liquids of infinite and finite depth are presented in the form of eleven summaries.

A new method for obtaining origionals is proposed (using integral transformations); the conditions under which it is possible to obtain approximate values of Fourier integrals are indicated, through which the solution to the problem is expressed. It is indicated that using these methods the authors solved problems considered earlier by L. V. Cherkesov, A. K. Nikitin, P. A. Gruntfest and the author, and new problems, for example a multilayer liquid and a single-layer liquid with a calculation of surface tension. For

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USSR

BELOZEROV, B. S., Matematika, nekotor. yeye pril. i metodika prepodav, 1972, pp 323-326

the solution of the frequency equations obtained by I. P. Oborotov certain limits were established and simplifications demonstrated.

The results indicated in summaries one, six and eleven were published by the authors in two articles (see Belozerov, B. S., and Nikitin, A. K. V. sb. Materialy Vses. konferentsii po krayev. zadacham. (in the Collection of Works, Materials of the All-Union Conference on Boundary-Value Problems), Kazan', Kazan. University, 1970, pp 31-35 -- RZHMekh, 1971, 2B551; Belozerov, B. S. Izv AN SSSR, Fiz. atmosf. i okeana, 1972, 8, No 7, 786-788 -- RZHMekh, 1972, 11B464). (10 bibliographic entries)

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Acc. Nr: AP0043685 (13) Ref. Code: UR 0056

PRIMARY SOURCE: Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, 1970, Vol 58, Nr 2, pp 683-685

COUPLED ELECTROMAGNETIC AND SPIN WAVES IN FERRODIELECTRIC SUBSTANCES NEAR THE CRITICAL POINT

D. P. Belozorov

Coupled electromagnetic and spin waves in a ferrodielectric substance near the critical point in which the nature of the crystal magnetic anisotropy changes are considered. It is shown that along with a sharp increase of the magnetic moment oscillation activation energy, a decrease of the phase velocity of long wave electromagnetic waves moving in such a crystal occurs.

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REEL/FRAME 19770089

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USSR

Welding

UDC 621.791.75.011:669.14.018+669.715

RYABOV, V. R., Candidate of Technical Sciences, YUMATOVA, V. I., Engineer, BUTNIK, A. L., Engineer, GRABIN, V. F., Candidate of Technical Sciences, KUZNETSOV, YE. P., Engineer, and BELOZEROV, L. F., Engineer, Institute of Electric Welding imeni YE. O. Paton

"Effect of Alloying Elements in Steel on the Properties of Steel-Aluminum Welded Joints"

Moscow, Svarochnoye Proizvodstvo, No 4, Apr 71, pp 9-12

Abstract: A study was made of the effect of alloying elements (Nb, Mn, Si, Va, Ti, Zr, Co, Nd) in steel on the properties of the diffusion zone created during aluminizing and welding and on the strength of welded steel-aluminum joints. The preparation of samples and the experimental procedure are described. The results show that introduction of alloying elements into a steel base delays the growth of the aluminized diffusion layer. The silicon introduced substantially reduces the microhardness of the aluminized diffusion layer. The plating method (aluminizing or galvanizing) before welding strongly affects the hardness of the joint.

1/1

USSR UDC 621.791.856.3:669.15-194:546.621

RYABOV, V. R., YUMATOVA, V. I., GRABIN, V. F., BUTNIK, A. P., DZYKOVICH, I. Ya., KUZNETSOV, Ye. P., and BELOZEROV, L. F., Institute of Electric Welding imeni Ye. O. Paton

"Effect of Nickel and Chromium in Steel on the Characteristics of Alloy Combinations"

Kiev, Avtomaticheskaya Svarka, No 2, Feb 71, pp 18-23

Abstract: An investigation was made of the effect of additions of nickel and chromium to Armco iron on the characteristics of the diffusion layer which appears during calorization. The dependence of the durability of steel-aluminum alloys on the additions contained in the steel was also studied. The nickel and chromium alloys with steel were prepared in an induction furnace with a capacity of 7 kg, and the ingots obtained were annealed at 1100-1200°C for three hours. They were then rolled into plates measuring 220 x 1200 x 3 mm. After slag removal, the specimens were calorized in an aluminum bath and cleaned. Tests were made of welds of experimental alloys prepared in the ADSV-2 automatic welder, and the phases of the layers formed during calorization and welding were studied 1/2

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RYABOV, V. R., et al, Avtomaticheskaya Svarka, No 2, Feb 71, pp 18-23

by X-ray analaysis. The introduction of nickel and chromium was found to delay the growth of the calorized diffusion layer.

USSR UDC: 678.5.06:624.074.4.001

BELOZEROV, L. G., DZHANKHOTOV, S. O., and NAUMOV, I. M., Central Aerodynamics Institute imeni Prof. N. Ye. Zhukovskiy, Moscow Oblast'; Scientific-Research Institute of the Technology and Organization of Production, Moscow

"Critical Stresses of Compressed Cylindrical Shells Made From Orthotropic Layers With Differing Orientation"

Riga, Mekhanika Polimerov, No 4, Jul-Aug 73, pp 684-690

Abstract: Results are presented from an experimental study of the regularities associated with changes in deformations and critical stresses which take place in smooth thin-walled circular cylindrical shells made from glass reinforced plastic based on the EDT-10P binder with diverse orientation of the fabric filler during axial compression. The test results are compared to the calculated data which was obtained using formulas from the theory of elasticity of an orthotropic body and of orthotropic shells. It is shown that the walls buckled with accompanying flaking as the critical load was achieved during axial compression. Also two or three rows of rhombic depressions appeared on the shell surfaces stretching in a circular direction. The number of half-waves in the circular direction is six-seven. The buckling began in the elastic zone. After the load was removed the waves disappeared. It is shown that changing the angle of basis orientation during the combined winding of shells with $R/\delta=113$ does not have a significant effect on the magnitude of

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BELOZEROV, L. G., et al, Mekhanika Polimerov, No 4, Jul-Aug 73, pp 684-690

the critical stresses associated with axial compression. A comparison of the experimental and calculated results shows good agreement for the case where the axes of elastic symmetry of the material coincide with the main coordinate axes of the shells. In other instances, the calculated values exceed the experimental.

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USSR UDC: 678:[624.074.4+539.377].001

BELOZEROV, L. G., KIREYEV, V. A., Central Aerohydrodynamics Institute imeni Professor N. Ye. Zhukovskiy, Moskovskaya Oblast

"Stability of Cylindrical Shells of Composite Materials Compressed in the Axial Direction and Subjected to Unsteady Heating"

Riga, Mekhanika Polimerov, No 2, Mar/Apr 73, pp 289-297

Abstract: The problem of buckling of smooth cylindrical shells with the application of nonstationary heating is solved in the linear formulation, disregarding dynamic terms in the initial equations. Calculation of a non-homogeneous shell reduces to calculation of a homogeneous one of equal rigidity. Computational formulas for determining critical loads are derived and their regions of applicability are determined. It is experimentally shown that the geometry and temperature distribution in the wall influence the nature of destruction of smooth cylindrical fiberglass plastic shells compressed in the axial direction and heated. In the case of high load levels and high heating rates of brief duration, the walls of thick shells were destroyed by oblique shear. With a reduction in load level and an increase in heating duration, i. e.,at higher temperatures, the walls

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BELOZEROV, L. G., KIREYEV, V. A., Mekhanika Polimerov, No 2, Mar/Apr 73, pp 289-297

of thick specimens buckled. At points of high temperature, the layers of the walls separated. This temperature is 480°K for fiberglass plastic shells with phenolformaldehyde binder. The walls of thin shells buckled at both normal and elevated temperatures. Comparison with theory shows satisfactory agreement.

1/2 016 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--BUTADIENE ACRYLONITRILE RUBBER FILMS -U-

AUTHOR--BELOZEROV, N.V.

B

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 260,875

REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZANKI 1970,

DATE PUBLISHED--06JAN70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--PLASTIC FILM, NITRILE RUBBER, VULCANIZATION, POLYACRYLATE RESIN, CHEMICAL PATENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1995/1093 STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0116559

UNCLASSIFIED

2/2 016 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AA0116559

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FILMS WERE PREPD. FROM UNFILLED BUTADIENE ACRYLONITRILE RUBBER BY VULCANIZATION USING ALTAX AND A POLYESTER ACRYLATE. PREVULCANIZED FILMS WERE TREATED WITH AN ALC. SOLN. OF ALKALI AT 80DEGREES FOR 24-48 HR, WASHED WITH ALC., AND DRIED TO INCREASE THEIR STRENGTH. FACILITY: YASOSLAVL TECHNOLOGICAL INSTITUTE.

UNCLASSIFIED

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UDC 632.95

BRYUKVINA, N. M. and BELOZEROV, P. A.

"Kinetics of the Chemical Reaction of α-Naphthol with Phosgene in an Organic Solvent"

V sb. Khim. sredstva zashchity rast. (Chemical Protection of Plants -- collection of works), No 2, Moscow, 1972, pp 49-58 (from RZh-Khimiya, No 22, 25 Nov 73, Abstract No 22N513 by A. F. Grapov)

Translation: The reaction of α-$C_{10}H_7OH$ with $COCl_2CH_2Cl$ in the presence of Me_2NPh is a second order reaction, K = 1.35.10-5 m^3/mole-sec. Running the reaction in a plate reactor permits the stage of phosgenization to be combined with desorption and utilization of $COCl_2$. The number of contact devices of the plate reaction is calculated to obtain α-$C_{10}H_7OCOCl$.

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USSR

UDC 621.317.34

GUSHCHIN, V. V., BELOZEROV, V. G., GORDEYEV, V. A.

"A Method of Measuring the Parameters of Narrow-Band SHF Filters"

V sb. Radioelektron. v nar. kh-ve SSSR (Radio Electronics in the Soviet National Economy--collection of works), Kuybyshev, 1971, pp 374-376 (from RZh-Radiotekhnika, No 11, Nov 71, Abstract No 11A311)

Translation: The authors point out the shortcomings of an automatic measurement installation of the "Astra" type as used in measuring the parameters of narrow-band devices. A new method of measuring the characteristics of narrow-band SHF filters is considered, which is essentially as follows. A microwave signal from a fixed-frequency oscillator and a wobbulator signal from a frequency-response meter are sent to the mixer. As a result of conversion, the signal from the frequency-response meter is moved to the predetermined SHF band and fed to the filter to be studied. The passband of the filter is analyzed by means of the microwave signal taken off at the output of the mixer with deviation in the required frequency range. After amplitude detection, the signal is sent to the vertical deflection amplifier

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GUSHCHIN, V. V. et al., Radioelektron. v nar. kh-ve SSSR, Kuybyshev, 1971, pp 374-376

of the frequency-response meter and the frequency response of the filter is observed on the screen of the meter. E. L.

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USSR

BELOZEROV, V. N., Entomology Laboratory, Biological Scientific Research Institute, Leningrad State University

"Inversion of the Photoperiodic Reaction Regulating Development and Diapause in Nymphs of the Tick Ixodes ricinus. (Acarina, Ixodidae) and the Mechanism of This Phenomenon"

Leningrad, Problemy Fotoperiodizma i Diapauzy Nasedkomykh (Problems of Photoperiodism and Diapause in Insects), 1972, pp 175-192

Abstract: The physiological state of hungry Ixodes ricinus nymphs changes in response to alterations of the photoperiod and temperature. The changes affect both their behavior and subsequent development. The long-day diapause occurring in hungry nymphs under long-day conditions is reversible and it can be eliminated by exposing them to long-day conditions 15 to 30 days before feeding. This phenomenon is related to a specific process called "short-day sensitization". As a result of such sensitization, the nymphs acquire the ability to react sensitively to the day length in accordance with the normal long-day photoperiodic reaction. For the same reason sensitized nymphs enter diapause following engorgement under short-day conditions, but they quickly undergo metamorphosis after exposure to long-day conditions. It is conjectured that
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BELOZEROV, V. N., Problemy Fotoperiodizma i Diapauzy Nasedkomyk, 1972, pp 175-192

the neurohormonal mechanism controlling nymph development includes two regularly functioning photoperiodic oscillators and three dependent hormones -- a diapause hormone, its antagonist, and an activation hormone -- which control, respectively, induction of the long-day diapause, short-day sensitization, and initiation of morphogenesis.

Vector Studies

UDC 595.421

USSR

BELOZEROV, V. N., Laboratory of Entomology, Scientific Research Institute of Biology, Leningrad State University, Leningrad

"The Nymphal Diapause of the Tick Ixodes ricinus L. V. The Effect of Change in the Photoperiodic Regime Under Which Unfed Nymphs Were Kept on Their Development After Engorgement"

Leningrad, Parazitologiya, Vol 5, No 6, Nov/Dec 71, pp 481-487

Abstract: Experiments which varied the photoperiodic regime under which unfed nymphs of Ixodes ricinus L. 4 or 7 mos old were kept showed that the mechanisms regulating metamorphosis were affected to a considerable extent by processes of short-day sensitization which took place upon change from a long day to a short day (12 vs. 20 hrs of light) and which removed the state of a potential long-day diapause. As a result of sensitization, the nymphs acquired before engorgement the capacity to react to the length of the day in accordance with the standards of a long-day photoperiodic reaction. Upon transfer from a short day to a long, the effects of prior short-day sensitization were evident. In experimental nymphs, only the maintenance or suppression of the diapause (morphogenetic or behavioral) was possible, while induction of the diapause occurred in an earlier period (i.e., before the age of 4 mos).

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UDC 51

USSR

BELOZEROV, V. V., NAUMOV, N. P., SHABUNIN, M. I.

"Problem of Mathematical Description of the Process of Executing an Operation"

V sb. Issled. operatsiy. Modeli, sistemy, resheniya. Vyp. 3 (Operations Research. Models, Systems, Decisions. Vyp. 3 -- collection of works), Moscow, 1972, pp 64-74 (from RZh-Kibernetika, No 9, Sep 73, Abstract No 9V516)

Translation: A study is made of an approach to the mathematical description of the process of executing an operation in which along with the ordinary factors (such as the operation execution time, the intensity of resource consumption, and so on) the results achieved during the processes executing the operation are considered in accordance with the stated goal. We are talking about describing such operations the initial information for which, as a rule, is of a hypothetical nature and can be obtained by expert evaluations. The process of executing the operation is described using a differential equation or system of equations the right-hand sides of which can be obtained from solving the problem of minimizing the quadratic form of a special type in the presence of certain restrictions. The proposed approach for practical utilization of it permits implementation on a computer.

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TECHNICAL TRANSLATION

FSTC-HT-23-2015-72

ENGLISH TITLE: PROBLEMS OF LASER BEAM DATA TRANSMISSION
PROCEEDINGS OF THE FIRST ALL-UNION CONFERENCE, KIEV,
SEPTEMBER 1968

FOREIGN TITLE: PROBLEMY PEREDACHI INFORMATSII LAZERNYM IZLUCHENIYEM

AUTHOR: I. A. BERYUGIN, ET AL.

SOURCE: KIEV ORDER OF LENIN STATE UNIVERSITY
IMENI T.G. SCHEVCHENKO

Translated for FSTC by AGSI

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