"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202010005-9

USSR UDC 669.721.042.6(088.8)

TAGAKIN, A. N., KORZNIKOV, V. M., BELKIN, G. I., ALOKTSEV, V. S., PROVODNIKOV, A. A., MAZUROV, G. A., TITAYEV, I. A., PUTINA, O. A., MATSUY N. V., BOCHKAREV, G. V., NAGIBIN, V. M.

"Method of Processing of Magnesium Ingots"

USSR Author's Certificate No 313908, filed 16/03/70, published 10/11/71, (Translated from Referativnyy Zhurnal, Metallurgiya, No 5, 1972, Abstract No 5 G248 P by G. Svodtseva).

Translation: A method of processing of Mg ingots including transportation, cooling, mechanical working, washing, etching, drying and covering with a protective layer is proposed. In order to reduce the labor expenditures for the process and process time, the ingots are subjected to forced cooling to 450-100°, mechanically worked during transportation, and washed at 350-100°. This reduces labor consumption, decreases the time of the process, and increases the productivity of labor by 40-80%.

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USSR UDC 612.273.1:577.3

MATSYNIN, V. V., ZAYTSEVA, N. P., and POLYANCHUK, M. V., Hypoxia and Hyperoxia Laboratory, Institute of Physiology imeni A. A. Bogomolets, Academy of Sciences UkSSR

"State of Oxidative Processes in the Livers of White Rats at Different Times After Exposure to Hyperoxia"

Kiev, Fiziologichniy Zhurnal, No 3, 1971, pp 391-396

Abstract: Free respiration and phosphorylation were studied in liver homogenates and mitochondria from white rats exposed to toxic doses of hyperoxia (4 ata) for 60 minutes. In one series of experiments, observations were conducted immediately after recompression; in another series, on the second day. In both series there was a decrease in conjugation of free oxidation and phosphorylation, as determined from the value of the respiratory control. The respiratory control decreased in most cases because of the relatively smaller increase in respiratory rate of the mitochondria and homogenates in a medium with phosphate acceptors (ATP+hexokinase+glucose) added. This phenomenon was observed both immediately following recompression and on the second day thereafter.

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USSR UDC 612:531.113

MATSYNIN, V. V. and SOKOLYANS'KIY, I. F., Department of Hypoxic States, Institute of Physiology imeni O. O. Bogomolets, Academy of Sciences, Ukrainian SSR, Kiev

"Physiological Responses of White Rats in a State of Hypothermia to Acceleration"

Kiev, Fiziologicheskiy Zhurnal, No 5, 1972, pp 675-680

Abstract: The resistance of rats to accelerations of 40 G while in a state of hypothermia was found to be higher than in controls. The accelerations (4 min) decreased pO_2 in the brain and skeletal muscles and inhibited bioelectrical activity of the muscles to the point of "bioelectrical silence." This did not happen in the diaphragm muscles. Acceleration also lowered the reactivity of the respiratory system and muscles in experimental animals.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202010005-9

1/2 033 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--CONTACT EXTRUSION METHOD FOR WELDING THERMOPLASTIC MATERIALS -U-

AUTHOR-(03)-SOLOVYEV, V.P., SOLOVYEVA, V.A., MATSYUK, L.N.

COUNTRY OF INFO--USSR

SOURCE--SVAR. PROIZVOD. 1970, (2), 24-5.

DATE PUBLISHED-------70

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

TOPIC TAGS--ETHYLENE, PROPYLENE, COPOLYMERIZATION, POLYPROPYLENE, CHEMICAL DEGRADATION, THERMAL EFFECT, WELDING TECHNOLOGY, THERMOPLASTIC MATERIAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/1322 STEP NO--UR/0135/70/000/002/0024/0025

CIRC ACCESSION NO--AP0133995

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202010005-9"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202010005-9

2/2 033 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0134996

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. OPTIMUM TEMPS., GIVING BOND STRENGTHS APPROX. THOSE OF THE ORIGINAL MATERIALS, FOR CONTACT EXTRUSION WELDING OF LOW, AND HIGH, D. POLYETHYLENE, ETHYLENE PROPYLENE COPOLYMER, POLYPROPYLENE, AND "POV" ARE 160-90DEGREES, 230-400DEGREES 230-400DEGREES, 250DEGREES, AND 190-200DEGREES, RESP., FOR THE WELDING MIXT. EMANATING FROM A HEATED NOZZLE IN CONTACT WITH THE SEAM. THESE TEMP. VALUES LAY IN A 20-70DEGREE RANGE OF CONST. BOND STRENGTHS FOR THESE WELDED MATERIALS BEFORE FURTHER TEMP. INCREASES DECREASED BOND STRENGTHS DUE TO POLYMER DEGRADATION. ARTICLES IS GREATER THAN 5 MM IN THICKNESS REQUIRED PRELIMINARY TREATMENT OF THE EDGES BY CONTACT EXTRUSION OF MOLTEN MIXTS. AT THE JOINT AT 2-5 KG-CM PRIME2, PREFERABLY 1.5-3 KG-CM PRIME2. A CHART FOR DETG. PREFERRED OPERATING CONDITIONS (TEMPS., QUANTITIES, RATES, THICKNESSES) IS GIVEN. THE METHOD GAVE STRONG BONDS BETWEEN A LOW D. POLYETHYLENE ALK. STORAGE BATTERY JACKET AND A HIGH D. POLYETHYLENE COVERING.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202010005-9

1/2 031 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--WELDABILITY OF FTOROPLAST-4M TETRAFLUOROETHYLENE POLYMER -U-

AUTHOR-(03)-MATSYUK, L.N., VISHNEVSKAYA, N.V., KOTOVSHCHIKOVA, O.A.

COUNTRY OF INFO--USSR

SOURCE--PLAST. MASSY 1970, (6), 74-5

DATE PUBLISHED--------70

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

TOPIC TAGS--POLYTETRAFLUOROETHYLENE, ADHESION, PLASTIC FILM, ANNEALING, WELDABILITY, CONSTRUCTION MATERIAL/(U)FTOROPLAST 4M FLUORINE PLASTIC

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3007/0704 STEP NO--UR/0191/70/000/006/0074/0075

CIRC ACCESSION NO--AP0136143

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202010005-9"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202010005-9

2/2 031 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0136143

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ADHESION OF FTOROPLAST-4M (I) FILMS OR PANELS, MADE BY SINTERING COLLOIDAL I DEPOSITED ON A WIRE MESH, DECREASED WHEN THESE MATERIALS WERE ANNEALED IN THE AIR AT 230-40DEGREES. HEATING I AT 262-340DEGREES CAUSED A LOSS OF 0.03 WT. PERCENT, NO CHANGE IN THE MELT FLOW INDEX OR IR SPECTRA, 1-3PERCENT SHRINKAGE, AND LESS THAN OR EQUAL TO 30PERCENT LOSS IN STRENGTH. THESE CHANGES APPEAR NOT TO BE CAUSED BY DEGRADATION, BUT BY THE STRUCTURAL REORDERING OF I. THE CHANGES OF THE SURFACE-RELIEF ("SMOOTHING OUT") CAUSE A DECREASE OF THE ADHESION.

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AA0040716

UR 0482

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Soviet Inventions Illustrated, Section I Chemical, Derwent,

240990 JOINING THERMOPLASTICS BY HIGH-FREQUENCY WELDING, in which the welding system is regulated by the insertion of a sheet of polymeric material between the electrodes of the system, prior to the actual measurement of the voltage required. The material used is not heated by the h.f. field and is the same thickness as the material that will eventually be joined. The trial piece of material is removed prior to the welding operation beginning. Using a voltmeter the voltage on the electrodes is measured and from this reading the strength of the electromagnetic field can be calculated. 1.3.68. as 1228693/23-27, TALASHOV, V.A. and MATSYUK, L.N. (19.8.69) Bul. 13/1.4.69. Class 39a2 Int. Cl. B 29c.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202010005-9

USSR UDC 576.856.72

BERNASOVS'KA, E. P., and MATSYUK, V. M., Kiev Scientific Research Institute of Epidemiology, Microbiology, and Parasitology and Institute of Microbiology and Virology, Academy of Sciences Ukr SSR

"Isolation of Polysaccharide-Containing Fractions of Leptospira by the Method of Fuller"

Kiev, Mikrobiologicheskiy Zhurnal, Vol 33, No 4, Jul/Aug 71, pp 454-459

Abstract: By applying the formamide method of A. Fuller (Brit. J. Exper. Path., 19, 2, 130-139, 1938), serologically active polysaccharide-containing fractions were isolated from Leptospira of the saprophytic strain BSh (L. biflexa) and a pathogenic strain of L. batavia. The fractions isolated were highly active in the passive hemagglutination reaction and the complement fixation reaction. They reacted with specific rabbit antiserum in the ring precipitation reaction and the reaction of precipitation in agar gel. Reducing substances in the amount of 30-39% were present in the polysaccharide-containing fractions. These fractions contained galactose, arabinose, xylose, mannose, ribose, rhamnose, and an unidentified sugar.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202010005-9

UNCLASSIFIED PROCESSING DATE--11SEP70

1/2 009

TITLE--NEUTRONACTIVATION SURVEY, THE METHOD OF APATITE AND OTHER FLUORINE BEARING MINERALIZATION DISCOVERY ON THE FLUORINE DISPERSION HALOES -U-

AUTHOR--GORBACHEV, A.N., KARPUNIN, A.M., MATUKANIS, L.F.

COUNTRY OF INFO--USSR

SOURCE--GEOLOGIYA I GEOFIZIKA, 1970, NR 3, PP 115-119

DATE PUBLISHED--------70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--FLUORINE, FLUORITE, MINERALOGY, GEOLOGIC SURVEY, NEUTRON ACTIVATION ANALYSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/1273 STEP NO--UR/0210/70/000/003/0115/0119

CIRC ACCESSION NO--AP0106054

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202010005-9"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202010005-9

2/2 009 UNCLASSIFIED PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0106054

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE METHOD PRINCIPLES AND THE RESULTS OF FLUORINEMETRIC NEUTRONACTIVATION SURVEY, DEVELOPED AND SAMPLED ON TRANSBAIKALIA APATITES ARE LISTED IN THE PAPER. AN APPLICATION OF THE SURVEY IS RECOMMENDED FOR APATITE, PHOSPHORITE AND FLUORITE MINERALIZATION PROSPECTING. THE WAYS FOR IMPROVEMENT OF THE FIELD NEUTRON ACTIVATION FLUORINOMETRY AND LONG TERM PLAN OF ITS APPLICATION FOR PROSPECTING OF OTHER COMMERCIAL MINERALS ARE MARKED.

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USSR UDC: 669.185.1

KOLGANOV, G. S., MATUKHNO, G. G., TUPITSA, V. I., PORKHUN, V. G., SHEMET, G. A., OMES', N. M.

"Improvement of the Technology of Production of Type 07T1 Steel"

Moscow, Metallurg, No 10, Oct 73, pp 19-20.

Abstract: The Krivorog Metallurgical Plant has begun producing type 07T1 steel to replace type KOM steel for the manufacture of bailing wire. The new steel is made in 130-ton converters by the standard technology for manufacture of killed steel, with the maximum quantity of slag run off after completion of blowing. The remaining slag is thickened by addition of 1-1.5 t lime. The metal is tapped at a carbon content of 0.06-0.9%, at 1590-1605° C. The metal is deoxidized in the ladle with titanium sponge or ferrotitanium. During teeming of the steel, when the adjustable head is 1/2 full, liquid aluminum is added to the surface of the metal. The introduction of this step to the technology has reduced total reject rate for 07T1 steel from 1.50 to 0.45%. The quantity of nonmetallic inclusions in the metal is not increased.

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USSR

UDC 539.182

KUPLYAUSKIS, Z. I., MATULAYTITE, A. V., and YUTSIS, A. P., Vil'nyus State University imeni V. Kapsukas

"Application of Generalized, Hydrogen-Like Radial Orbitals to the Basic Configurations of Atoms of the Sodium and Aluminum Type"

Vil'nyus, Litovskiy Fizicheskiy Sbornik, Vol XII, No 1, 1972, pp 19-24

Abstract: Hydrogen-like and generalized hydrogen-like analytical radial orbitals are applied to calculate the base configurations of atoms and ions of the sodium and aluminum type. Generalized, hydrogen-like, analytical radial orbitals were previously applied to calculate the configurations $1s^22s^N$, $1s^22s^22p^N$, $1s^22s2p^N$, $1s^22s^22p^63p$, $1s^22s^22p^63s^2$, and $1s^22s^22p^63s^23p^6$. The purpose of the present study is to calculate the basic configuration of atoms of the sodium and aluminum type using ordinary and generalized, hydrogen-like, analytical radial orbitals. The problem of determining the values of the parameters of the analytical radial orbitals by finding the basic minimum of the expression for the nonrelativistic energy is discussed. The energy values obtained are comparable with results obtained using the solutions of the ordinary Hartree-Fock equations. The authors point out that the values of the parameters of analytical radial orbitals of the aluminum

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USSR

KUPLYAUSKIS, Z. I., et al., Litovskiy Fizicheskiy Sbornik, Vol XII, No 1, 1972, pp 19-24

atoms as determined in the present study are necessary for a theoretical determination of the intensity of X-ray scattering. Numerical calculations were carried out on the Minsk-22 computer, and a table is presented showing the parameters of the analytical radial orbitals and the energy in Hartree atomic units for the $1s^2 2s^2 2p^6 3s$ orbitals. It is noted that the energies obtained using ordinary, hydrogen-like, analytical radial orbitals are considerably different from values obtained using generalized, hydrogen-like, analytical radial orbitals. The latter are close to values obtained by solving ordinary Hartree-Fock equations. This shows that the generalized, hydrogen-like, analytical radial orbitals which are simple in their analytical form and convenient for calculations are a good approximation to solutions for the Hartree-Fock equations and may be successfully applied in calculating atomic structures.

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USSR UDC[537.226+537.311.33]:[537+539]

BAREYKIS, V. A., GUOGA, V. I., MATULENENE, I. B., POZHELA, YU. K., and REPSHIS, V. I.

"Investigation of the Warming-Up of Current Carriers in Nonrectifying Point Contact"

Lit. fiz. sb. (Collection of Lithuanian Works on Physics), 1971, 11, No 1, pp 73-79 (summaries in Lithuanian and English) (from RZh-Fizika, No 10, Oct 71, Abstract No 10YE666 from summary)

Translation: The authors measured noise temperature and thermoelectromotive force of hot holes as a function of bias voltage for p-Ge specimens with nonrectifying point contact at room temperature. It is shown that in the point contact the electric field warms the current carriers. For a bulk specimen values of noise temperature for point contact were compared with noise temperature as well as with carrier temperature determined according to thermoelectromotive force measurements.

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(12)

USSR

UDC 539.1.074.3

BORISOV, A. A., BUGORSKIY, A. P., BUSHNIN, Yu. A., DEREVSHCHIKOV, A. A., DUNAYTSEV, A. F., ZHIL'CHENKOV, V. D., MATULENKO, Yu. A., MESHCHANIN, A. P., MIKHAYLOV, Yu. V., NURUSHEV, S. B., SEN'KO, V. A., SMIRNOV, V. V., SMIRNOV, Ye. V., SISKIN, V. V., SOLOV'YEV, L. F., and SOLOV'YANOV, V. L., Institute of High-Energy Physics, Serpukhov

"A Hodoscopic Installation for Investigation of the Elastic Scattering of High-Energy Particles"

Moscow, Pribory i Tekhnika Eksperimenta, No 3, May/Jun 73, pp 49-53

Abstract: A description is given of a hodoscopic installation, developed at the Institute of High-Energy Physics, for investigation of the elastic scattering of high-energy particles within the pulse range of 30-60 gigaelectron volts/sec. The range of dispersion angles covered by the installation is 0-29 millirads with an angular resolution of $\pm$ 0.17 millirad. The total solid angle is 39 microsteres. The pulse is determined to within $\pm$ 0.22%. The resolving time is 35 nanosec. The dead time is 50 microsec. The pulse pass band of the spectrometer is 8%. The statistics-setup is up to 10^6 per hour. The installation is electrically coupled to a "Minsk-22" computer, which stores and processes the information during the experiment. The

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BORISOV, A. A., et al., Pribory i Tekhnika Eksperimenta, No 3, May/Jun 73, pp 49-53

obtained results are immediately printed out in the form of tables and graphs, and also appear on the oscillograph screen. Monitoring equipment has been developed, which keeps track of proper operation of the hodoscopes. The first results have been obtained on the scattering of π^--mesons on nuclei at a pulse of 50 gigaelectron volts/sec and of protons within the initial-pulse range of 30-60 gigaelectron volts/sec. 3 figures. 2 tables. 3 references.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202010005-9

USSR UDC: 681.3.06:51

VAYCHYULIS, B. K., MATULIS, V. A.

"On Coding and Machine Calculation of the Time Characteristics of Large Networks"

V sb. Avtomatika i vychisl. tekhn. (Automation and Computer Technology--collection of works), No 3, Vil'nyus, "Mintis", 1971, pp 249-258 (from RZh-Kibernetika, No 12, Dec 71, Abstract No 12V955)

Translation: The paper describes computer algorithms for calculating the time characteristics of large networks and gives the operating time of some modules as a function of network parameters. In contrast to some algorithms known from the literature, this relation is expressed by a linear function of the number of jobs and events in the network. A brief description is given of the program for the BESM-4 computer compiled on the basis of the given algorithms with the following restrictions for network parameters: number of jobs -- less than 32 600, number of events -- less than 16 300. Author's abstract.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202010005-9

USSR

UDC 621.357.7.035.4:669.587(066.6)

YAKOBSON, S. S., SHARMAYTIS, R. R., MATULIS, YU. YU. [redacted]

"Bright Zinc Coating Electrolyte"

USSR Author's Certificate No 306189, filed 20 Oct 69, published 21 Jul 71 (from RZh-Khimiya, No 6 (II), Jun 72, Abstract No 6L294P)

Translation: A zincate electrolyte for bright zinc coating containing ZnO, NaOH, the product of condensation of monoethanolamine with aromatic aldehyde (I) is introduced. It is distinguished by the fact that in order to obtain bright coatings and to increase the stability of the electrolyte, polyglycol is introduced in it with the following component ratio (in grams/liter): 12-24 ZnO; 80-140 NaOH; 1-25 I; 0.2-06 polyglycol. It is indicated that the following can be used as the polyglycol: polyethyleneglycol, polypropyleneglycol, polyethylene-polypropyleneglycol or polyethyleneglycol + polypropyleneglycol. Example. An electrolyte of the following composition was prepared (in grams/liter): 25-30 ZnO, 80-100 NaOH, 12-15 I, 0.4-0.6 polyethyleneglycol. The Zn coating was deposited with D_c 2-4 a/dm^2 at room temperature. The precipitates obtained with a thickness of 2 μ were nonporous, and the degree of luster with respect to an Ag-mirror was 75-85%. The electrolyte remained stable for 25-30 hours of operation. The electrolyte was adjusted by the addition of polyethyleneglycol after passage of 18-20 a-hr/liter of electrolytes.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202010005-9

USSR UDC 669.3/6.476(088.8)

BUBYALIS, Yu. S., SHVIL'PENE, G. P., BYARNOTAS, A. K., and MATULIS, Yu. Yu., Institute of Chemistry and Chemical Technology, Academy of Sciences Lithuanian SSR

"Method for Electrodeposition of Copper-Tin Alloy"

USSR Authors' Certificate No 305206, Cl. C 23 b 5/34, filed 7 Jan 70, published 13 Jul 71 (from RZh-Metallurgiya, No 1, Jan 72, Abstract No 1G196P by G. Svodtseva)

Translation of Abstract: In order to obtain adherent deposits of alloys, Sn in the form of Na stannate and KNO_3 are introduced into the electrolyte in the following ratio of components (in g/liter): Cu pyrophosphate 15-35, Na stannate 20-35, K pyrophosphate 170-240, KNO_3 5-17. The process is carried on at pH 10-11, D = 0.8-5 a/dm^2 and temperature 40-60°. The Cu content of the alloy is 70-95%. The composition of the alloy does not depend on current density, but current efficiency declines approximately from 100 to 55% with a rise in D. With a rise in pH of the electrolyte from 10 to 11 and of temperature from 40 to 60° the Cu content of the alloy drops by ~ 15%.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202010005-9

USSR

UDC 621.357.7:669.256(088.8)

MATULIS, YU. YU., RACHINSKAS, V. S., KHOTYANOVICH, S. I., RACHINSKENE, S. G.

"Method of Electrolytic Deposition of Cobalt Alloys"

USSR Author's Certificate No 316754, filed 18 May 70, published 22 Dec 71 (from RZh-Khimiya, No 12, Jun 72, Abstract No 12L333P)

Translation: A procedure has been patented for electrolytic deposition of Co alloys distinguished by the fact that in order to obtain a bright film of Co-Pt alloy, chloroplatinic acid is introduced into the electrolyte, and the process takes place at pH 2-5, D_c 0.2-2 a/dm^2, and a temperature of 18-40° with mixing of the electrolyte. The electrolyte contains (in g/liter): $CoSO_4$ 100-150, chloroplatinic acid 0.1-2.0, $MgSO_4$ 50-100, H_3BO_3 25-35.

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AA0052403

UR 0482

Soviet Inventions Illustrated, Section III Mechanical and General, Derwent, 2-70

243408 FACING PANEL FIXING DEVICE for aircraft passenger cabins, comprising upper and lower longitudinal supports fixed to the fuselage, support elements and eccentric or screw locks for attaching the edges of the panel by tangential forces, differs in that the support element is in the form of flexible strips of the same length as the arc of the panel attached at the ends to the upper and lower longitudinal supports. This simplifies the design and gives a better fixture and finished

Solov'yev, Yu. P.; Serebrennikov, R. B.; Malus, A. I.

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AA0052403

appearance. Facing panel 1 with projection 2 is pressed to support strip 3, attached at its ends to longitudinal supports 4 and 5. On upper support 4 is fixed a lock, consisting of screw clip 6 and self-locking nut 7. In the interval between the external panelling of the fuselage and the facing panels is thermal insulation 8. The panels are fitted one after the other. The facing panel is inserted into the slot of lower support 5. When clip 6 is turned, a tangential force is created in lock 7 giving compression along the side edge of the panel. The upper panel is laid on the edge of the adjacent panel which rests on the support strip.

28.6.67 as 1168475/40-23 SOLOV'EV I.P. et al. (23.9.69) Bul. 16/5.5.69. Class 62b, 17b, Int. Cl. B 64c, E 04b.

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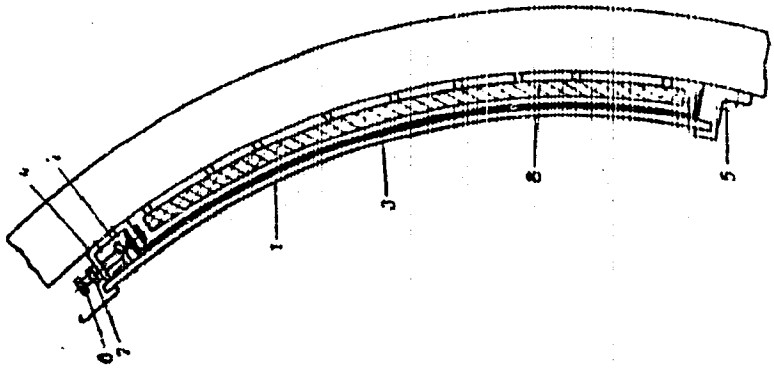
AA0052403



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19821022

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202010005-9

Composite Materials

USSR UDC: 669.715:621.002.3

SEVERDENKO, V. P., MATUSEVICH, A. S., CHUTAYEV, I. Kh., RADAYEV, M. A.

"Hardening of Aluminum by Fibers of Stainless Steel"

Moscow, Tsvetnyye Metally, No 12, Dec 73, pp 60-61.

Abstract: A specimen consisting of alternating layers of degreased steel wire and surface-treated aluminum foil was placed in an envelope of copper sheets, the edges of which were sealed by gas welding. The air was extracted from the envelope to a residual pressure of $1 \cdot 10^{-4}$-$1 \cdot 10^{-5}$ mm hg, after which the packet was heated to 450° C for 30-45 minutes, depending on packet thickness. The residual pressure in the packet before rolling was not over $5 \cdot 10^{-5}$ mm hg. Based on the experiments, a nomogram was constructed which can be used to determine the spacing of wires, foil thickness and minimum necessary degree of compression for fixed values of volumetric content and a diameter of hardening wires. Reinforced sheets measuring (1.0-3.5) by 180 by 220 mm were made. The highest strength values were achieved for a composite material consisting of aluminum plus 44% EP-322 wire.

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Composite Materials

UDC 621.771.42.669.2/.8

USSR

SEVERDENKO, V. P., MATUSEVICH, A. S., and GONCHAROV, A. F., Moscow, Minsk

"Drawing of Composite Materials Based on Aluminum and Copper"

Moscow, Izvestiya Akademii Nauk SSSR, Metally, No 2, Mar-Apr 73, pp 122-124

Abstract: A study was made of the strain hardening of aluminum-Kh18N10T composites and copper-Kh18N10T composites by means of plastic deformation at room temperature and at the temperature of liquid nitrogen. Also investigated was the possibility of plastic deformation of composite materials. The highest permissible deformation of the aluminum-25% Kh18N10T composite is 35% in drawing in a medium of liquid nitrogen and 70% in drawing at room temperature. For the copper-Kh18N10T composite with 20-60% volumetric content of threads, the maximum deformations in the case of the above-mentioned temperatures were 65% and 96%, composite. Applying drawing with subsequent aging made it possible to increase the tensile strengths of the aluminum-Kh18N10T respectively by 1.5-2 times and of the copper-Kh18N10T composite by 2-3 times, in comparison with the initial tensile strength. One figure one table, two bibliographic references.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202010005-9

USSR UDC: 621.375.421

GLUMOV, B. V., MATUSEVICH, B. S., and SYCHEV, V. A.

"Some Broad-Band Filter Circuits With Linear Phase Characteristics"

Sb. tr. Nauchno-tekhn. konferentsii prof.-prepodavat. sostava Vses. zaochn. elektrotekhn. in-ta svyazi (Transactions of the Scientific-Technical Conference of Professorial-Instructor Staff of the All-Union Correspondence Electrical Engineering Communication Institute--collection of works) No. 5, Moscow, 1970, pp 87-93 (from RZh-Radiotekhnika, No. 3, March 71, Abstract No. 3D30)

Translation: A single-branched piezoelectric filter, a differential-bridge filter, and a filter using piezoceramic resonators and LC elements are examined. A circuit and the characteristics of the filter with seven inductive windings and two transformers are given. V. Ch.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202010005-9

USSR UDC: 621.762

MATUSEVICH, I. S., All-union Power Machine Building Planning and Technological Institute

"Manufacture of Complex Shaped Metal Ceramic Products"

Kiev, Poroshkovaya Metallurgiya, No 4, 1972, pp 49-52.

Abstract: A new process for the manufacture of complex shaped metal ceramic castings is studied. The metal powder which forms the base of the alloy is mixed with a binder, producing a slip with a pasty consistency. The process is performed at low temperatures (0 to -15°C) to avoid spontaneous hardening of the slip. The slip is pressed at 200 to 1000 kg/cm^2 in steel molds heated to 50-200°C. The slip hardens completely in 10-15 minutes, after which the products are annealed. The new method allows products of any shape to be produced of metal ceramic alloys with good heat resistance. In a further modernization of the new process, investment casting methods are used to produce two-layer products consisting of an external, thin, strong, heat-resistant metal ceramic shell with an internal ductile metal core.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202010005-9

USSR

UDC 621.762.01(088.8)

MATUSEVICH, I. S.

"A Method for Producing Cermet Articles on a Metal-Metal Oxide Composition Base"

USSR Author's Certificate No 255578, filed 21 Nov 66, published 3 Apr 70 (from RZh-Metallurgiya, No 11, Nov 70, Abstract No 11G315)

Translation: A method is proposed for producing cermet articles of intricate shape and high-compactness from metal-metal oxide composition. Oxide is the hardening dispersed phase that increases the compactness, hardness, and high-temperature strength of articles. The metallic powder is mixed with a salt solution of metal (water-alcohol hydroxynitrate or Al or Cr hydroxychloride) which hardens spontaneously at room temperature. The process of preparation of the suspension is carried out at -5°, -15°. The ready suspension is compacted under pressure of 100-200 kg/cm^2 into heated (up to 100-200°) metal die pressure cast molds lubricated with SKG rubber. After solidification of the suspension, the mold is dismantled and the article is subjected to drying and calcination. During calcination the decomposition of hydroxynitrate or hydroxychloride takes place with the formation of dispersed metal oxide.

V. Chelnokov

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202010005-9

1/2 027 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--SURFACE DEFECTS IN STAINLESS STEEL CASTINGS -U-

AUTHOR--MATUSEVICH, I.S.

COUNTRY OF INFO--USSR

SOURCE--LITEINOE PROIZV., MAR. 1970, (3), 12-14

DATE PUBLISHED----MAR 70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--CAST STAINLESS STEEL, SURFACE PROPERTY, CHEMICAL COMPOSITION, CHROMIUM, NICKEL, VACUUM TECHNIQUE, STEEL DEOXIDATION, MOLDING MATERIAL, VISUAL DEFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3004/1937 STEP NO--UR/0128/70/000/003/0012/0014

CIRC ACCESSION NO--AP0132199

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202010005-9

2/2 027 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0132199

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. "DARK SPOT" CORROSION, E.G. ON THE SURFACE OF STAINLESS STEELS CONTG. CR LESS THAN 20, NI LESS THAN 10PERCENT, IS CAUSED BY OXIDATION OF THE METAL AND REACTION BETWEEN THE METAL OXIDE AND THE MOULD, WHICH INCREASE IN INTENSITY ON INCREASE OF THE MN CONTENT OF THE STEEL. IN CAN BE ELIMINATED, E.G. BY SUPPLEMENTARY DEOXIDATION OF THE STEEL WITH AL, ZR, AND SI, INCORPORATING SINTERING AGENTS (SILLIMANITE, ZR) IN THE MOULD, INCREASING THE MOULD HEATING TEMP., EMPLOYING CERAMIC MOULDS MADE FROM BASIC OXIDES OF CHROMOMAGNESITE MAGNESITE USING AS BINDER CR SUB2 O SUB3-ALCOHOL SOLUTION OF CR OXYNITRITE, AND ADDING 2-3PERCENT OF IRON SCALE TO ELIMINATE MAGNESITE SOLUBILITY OF FEO. ADDITIONAL PRECAUTIONS INCLUDE THE USE OF MOULDS OF ELECTROCORUNDUM, OR OF RUTILE IN THE CASE OF NI ALLOYS NOT CONTG. FE, AND CREATING A DEOXIDIZING OR NEUTRAL ATMOSPHERE IN THE MOULD, AND POURING AND COOLING UNDER A VACUUM, DEOXIDIZING OR NEUTRAL ATMOSPHERE.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202010005-9

UNCLASSIFIED PROCESSING DATE--11DEC70

1/2 C1E

TITLE--DIMERIZATION OF PYRIMIDINE BASED DNA OF HELA CELLS DURING ULTRAVIOLET IRRADIATION, AND REMOVAL OF THE DIMERS DURING REPARATION IN

AUTHOR-(03)-SOYFER, V.N., MATUSEVICH, L.L., GORUSHKINA, G.I.

COUNTRY OF INFO--USSR

SOURCE--RADIOBIOLOGIYA 1970, 10(2), 275-8

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--DNA, BIOLOGIC CELL, UV RADIATION BIOLOGIC EFFECT, RADIATION CELLULAR EFFECT, PAPER CHROMATOGRAPHY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----FD70/605004/G02 STEP NO--UR/0205/70/010/002/0275/0276

CIRC ACCESSION NO--AP0139613 UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202010005-9

UNCLASSIFIED PROCESSING DATE--11DEC70

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CIRC ACCESSION NO--AP0139613

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. HELA CELLS WERE INCUBATED WITH THYMIDINE PRIME3 H FOR 20 HR AND THEN IRRADIATED WITH UV (MAX. 253.7 NM). THE INCUBATION CONTINUED AND SAMPLES WERE TAKEN FOR THYMIDINE-THYMIDINE DIMER RATIO DETN. BY PAPER CHROMATOG. WITH A N,BUTANOL DOUBLE BOND ACOH DOUBLE BOND WATER (80:12:30) SOLVENT SYSTEM. THE AMT. OF THYMIDINE DIMERS INCREASED LINEARLY WITH THE RADIATION DOSE UNTIL A PLATEAU WAS REACHED. A DECREASE IN DIMERS WAS OBSD. IN THE DARK INCUBATION AFTER IRRADN. FACILITY: INST. OBSHCH. GENET., MOSCOW, USSR.

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UDC 911.3.616.-02.613.12

USSR

MATUSEVICH, V. G.

"The Effect of Microclimate of Dwellings on the Human Organism During Sleep in Various Seasons"

Gigiena naselen. mest. Resp. mezhved. sb. (Hygiene for Populated Areas, Interdepartmental collection), 1970, vyp. 9, pp 192-196 (from RZh-36. Meditsinskaya Geografiya, No 1, Jan 71, Abstract No 1.36.54)

Translation: Research was conducted on the effect of a decrease in air temperature on the human organism during sleep in both summer and winter (summer temperatures from 18°C to 23°C; winter--from 12°C to 20°C with relative humidity of 40-60%; velocity of air movement -- 0.1 m/sec.). Inhalation of lower temperature air (both in summer and winter) improves the organism's oxygen supply; intensifies oxidizing processes; and speeds the onset of sleep, while providing a deeper sleep.

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USSR UDC 620.193.41 : 669.24

MATUSEVICH, V. S., LEBEDEV, A. N., FOKIN, M. N., and KONSTANTINOVA, YE. V.

"Study of Corrosion of Nickel-Molybdenum Alloy EP-496 in Hydrochloric Acid Solutions Containing a Fluorine Ion"

Moscow, Zashchita Metallov, Vol 8, No 3, May-Jun 72, pp 317-320

Abstract: For purposes of selecting a corrosion-resistant material for highly corrosive media of the system $HCl+HF+H_2O$, the authors tested nickel-molybdenum alloy EP-496 (C < 0.05, Si < 0.5, Mn < 0.5, V 1.4-1.7, Fe < 4.0, Mo 25+29 percent, the rest Ni), developed by the Central Scientific Research Institute of Ferrous Metallurgy. The tests were conducted in a 10 M HCl solution with additions of 0.2-1.0 M F^- at the boiling point (104°C). Alloy EP-496 possesses satisfactory corrosion resistance in a hydrochloric acid solution with fluoride additions. The corrosion rate and potential change slightly with the introduction of up to 1.0 M fluorine ion into the solution. The alloy corrodes at an increased rate if there are oxidizing agents in the solution. The corrosion potential of EP-496 in a 10 M HCl+0.2 M F^- solution shifts towards

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USSR

MATUSEVICH, V. S., et al., Zashchita Metallov, Vol 8, No 3, May-Jun 72, pp 317-320

positive values and the average corrosion rate rises sharply with an increase in the Fe^{3+} concentration. For purposes of corrosion protection, the authors tried a method of Fe^{3+} reduction in solution and selected the most effective reducing agents. This treatment was found to be more effective with a homogeneous oxidation mechanism than with heterogeneous oxidation. The problem was to select a reagent which permits sufficiently rapid and complete reduction of Fe^{3+} with minimum consumption of the introduced reducing agent.

Sodium hyposulfite and hypophosphite proved ineffective. The introduction of tin dichloride provides effective protection, reducing the corrosion rate to that in a solution free of an oxidizing agent. In experiments with metallic reducing agents, their protector effect on the alloy was eliminated (the experiments being staged in the absence of direct contact between specimen and the chip of the introduced metal). There was an increase in the

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USSR

MATUSEVICH, V. S., et al., Zashchita Metallov, Vol 8, No 3, May-Jun 72, pp 317-320

corrosion rate of the alloy with the introduction of a metal chip (steel St. 3) into the solution. The transition of metallic iron to the ionic state was accompanied by intensive hydrogen evolution. Metallic aluminum cuts in half the corrosion rate of the alloy. Metallic titanium was found to be an exceptionally effective corrosion inhibitor for alloy EP-496 in a hydrochloric acid-fluoride medium both in the presence and in the absence of trivalent iron ions in the solution. The optimum addition of metallic titanium for protection at certain oxidizing agent concentrations is chosen empirically.

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USSR UDC:621.313.12:539.172.12

BOL'SHOV, V. I., DUBININ, A. A., DMITRIYEV, V. M., KAPCHIGASHEV, S. P., KON'SHIN, V. A., MATUSEVICH, YE. S., POLIVANSKIY, V. P., TUPKO, V. Ya., REGUSHEVSKIY, V. I., STAVISSKIY, Yu. Ya., and YUR'YEV, Yu. S.

"Physical Investigation of the Target in an Electronuclear Neutron Flux Generator"

Moscow, Atomnaya Energiya, Vol 28, No 5, May 70, pp 388-392

Abstract: Fluxes of thermal neutrons on the order of 10^{17}-10^{18} n/cm^2·sec open new possibilities for investigations in many areas of science and technology. There is great interest in the study of the possibility for increasing neutron fluxes by using the process of multiple neutron birth upon interaction of nucleons with energies in the hundreds of MeV with heavy nuclei. This article presents the results of experiments and calculations concerning the neutron-physical characteristics

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BOL'SHOV, V. I., DUBININ, A. A., DMITRIYEV, V. M., KAPCHIGASHEV, S. P., KON'SHIN, V. A., MATUSEVICH, Y. E. S., TOLIVANSKIY, V. P., TUPKO, V. Ya., REGUSHEVSKIY, V. I., STAVISSKIY, Yu. Ya., YUR'YEV, Yu. S., Moscow, Atomnaya Energiya, Vol 28, No 5, May 70, pp 388-392

of the target in an electronuclear device for the generation of neutron fluxes. The yield of neutrons and distribution of the number of reactions in a heavy target and moderator are measured. The space-energy distribution of neutron flux in the moderator is calculated and the accumulation of transuranium elements in a system with high neutron flux is computed.

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BOL'SHOV, V. I., DUBININ, A. A., DMITRIYEV, V. M., KAPCHIGASHEV, S. P., KON'SHIN, V. A., MATUSEVICH, YE. S., POLIVANOV, V. P., TUPKO, V. Ya., REGUSHEVSKIY, V. I., STAVISSKIY, Yu. Ya., and YUR'YEV, Yu. S.

"Physical Investigation of the Target in an Electronuclear Neutron Flux Generator"

Moscow, Atomnaya Energiya, Vol 28, No 5, May 70, pp 388-392

Abstract: Fluxes of thermal neutrons on the order of 10^{17}-10^{18} n/cm^2·sec open new possibilities for investigations in many areas of science and technology. There is great interest in the study of the possibility for increasing neutron fluxes by using the process of multiple neutron birth upon interaction of nucleons with energies in the hundreds of MeV with heavy nuclei. This article presents the results of experiments and calculations concerning the neutron-physical characteristics

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BOL'SHOV, V. I., DUBININ, A. A., DMITRIYEV, V. N., KAPCHIGASHEV, S. P., KON'SHIN, V. A., MATUSEVICH, Y. E. S., TOLIVANSKIY, V. P., TUPKO, V. Ya., REGUSHEVSKIY, V. I., STAVISSKIY, Yu. Ya., YUR'YEV, Yu. S., Moscow, Atomnaya Energiya, Vol 28, No 5, May 70, pp 388-392

of the target in an electronuclear device for the generation of neutron fluxes. The yield of neutrons and distribution of the number of reactions in a heavy target and moderator are measured. The space-energy distribution of neutron flux in the moderator is calculated and the accumulation of transuranium elements in a system with high neutron flux is computed.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202010005-9

USSR UDC 539.125.52

DARUGA, V. K., and MATUSEVICH, YE. S.

"Neutron Generation in Various Substances by 46-Mev Alpha Particles"

Moscow, Atomnaya Energiya, Vol 33, No 3, Sep 72, pp 757-765

Abstract: The article gives refined data on neutron generation by alpha particles in thick targets. Preliminary results had been described in earlier articles by A. T. BAKOV et al. and V. K. DARUGA et al. Targets of Li, Be, C, Mg, Al, Ti, Fe, Co, Ni, Cu, Zn, Zr, Nb, Mo, Ag, Cd, Ta, W, Au, Pb, Bi, and U of natural isotopic composition were bombarded with a cyclotron beam of alpha particles with an energy of 46±1 Mev. The target thickness was equal to the ionization path of the alpha particle in the substance of the pertinent target or slightly greater than this path. The following were measured in the experiments: the spectra of secondary neutrons at angles of 0 and 90° relative to the beam of bombarding particles, the angular distributions in the range $\theta = 0 \div 140°$, and the absolute yields of neutrons with energies of $E_n > 0$ and $E_n \geqslant 1.8$ Mev. The following were used for the measurements: a single-crystal stilbene spectrometer with gamma-quanta discrimination

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USSR

DARUGA, V. K., and MATUSEVICH, YE. S., Atomnaya Energiya, Vol 33, No 3, Sep 72, pp 757-765

according to pulse shape, a standard "all-wave" detector with SNM-5 (BF_3) neutron counter, a ZnS(Ag)+plexiglas fast neutron counter, and a broad-band ZnS(Ag)+^{10}B detector with a polyethylene moderator.

The authors thank V. A. DULIN, V. G. DVUSHERSTNOV, and N. N. PAL'CHIKOV for helping in the measurements.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202010005-9

1/3 010 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--HYDROMETEOROLOGICAL SERVICE OF UKRAINA IN THE 50 YEARS OF SOVIET POWER -U-

AUTHOR-(02)-MATLSHEVSKIY, A.F., PROKH, L.Z.

COUNTRY OF INFO--USSR

SOURCE--TRUDY NR 81. HYDROMETEOROLOGICAL SERVICE OF UKRAINA IN THE 50 YEARS OF SOVIET POWER (GIDROMETEOROLOGICHESKAYA SLUZHBA UKRAINY ZA 50

DATE PUBLISHED--------70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY, BEHAVIORAL AND SOCIAL SCIENCES

TOPIC TAGS--HYDROMETEOROLOGY, MONOGRAPH

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3003/1512 STEP NO--UR/0000/70/000/000/0001/0270

CIRC ACCESSION NO--AT0130441

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CIRC ACCESSION NO--AT0130441

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TABLE OF CONTENTS: PREFACE 5. CHAPTER I METEOROLOGICAL OBSERVATIONS AND INVESTIGATIONS IN THE SOUTH OF RUSSIA IN THE PREREVOLUTIONARY TIME 7. II HYDROLOGICAL INVESTIGATIONS IN PREREVOLUTIONARY TIMES 24. III METEOROLOGICAL WORKS AND INVESTIGATIONS IN 1918-1941 29. IV HYDROLOGICAL INVESTIGATIONS IN 1918-1941 67. V HYDROMETEOROLOGICAL SERVICE OF UKRAINA DURING THE GREAT PATRIOTIC WAR 74. VI POST WAR RESTORATION AND DEVELOPMENT OF THE NETWORK OF HYDROMETEOROLOGICAL STATIONS, POINTS AND OTHER SUBDIVISIONS OF THE SERVICE 100. VII HYDROMETEOROLOGICAL OBSERVATORIES 126. VIII INTERNATIONAL RELATIONSHIPS OF THE HYDROMETEOROLOGICAL SERVICE 156. IX HYDROMETEOROLOGICAL SERVICE OF NATIONAL ECONOMY 162. X TRAINING OF SPECIALISTS 199. XI UKRAINIAN SCIENTIFIC RESEARCH HYDROMETEOROLOGICAL INSTITUTE 208. XII AGROMETEOROLOGICAL INVESTIGATIONS 213. XIII CLIMATOLOGICAL INVESTIGATIONS 222. XIV INVESTIGATIONS IN SYNOPTIC AND DYNAMIC METEOROLOGY 227. XV INVESTIGATIONS OF CLOUDS, FOGS AND THEIR ARTIFICIAL ACTIVATION 233. XVI INVESTIGATIONS OF HYDROLOGY AT SCIENTIFIC INSTITUTIONS OF THE HYDROMETEOROLOGICAL SERVICE 266. CONCLUSION 266. THE MONOGRAPH IS CONCERNED WITH THE HISTORY OF ORGANIZATION AND DEVELOPMENT OF THE UKRAINIAN HYDROMETEOROLOGICAL SERVICE WHICH APPEARED ACTUALLY IN 1919. DESCRIPTION IS GIVEN OF HYDROMETEOROLOGICAL ACTIVITIES BEFORE THE REVOLUTION OF 1917, IN THE PERIOD OF 1918-1941, DURING THE GREAT PATRIOTIC WAR AND IN THE POST WAR PERIOD.

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3/3 010 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AT0130441

ABSTRACT/EXTRACT--THE LATEST ADVANCES IN THE NETWORK OF HYDROMETEOROLOGICAL STATIONS AND POSTS, OBSERVATORIES, THE UKRAINIAN HYDROMETEOROLOGICAL RESEARCH INSTITUTE AND SOME OTHER INSTITUTIONS ARE GIVEN. THE UP TO DATE SYSTEM IS PRESENTED OF PROVIDING THE NATIONAL ECONOMY OF THE UKRAINE WITH HYDROMETEOROLOGICAL INFORMATION. THE SUMMARY IS GIVEN OF STUDIES IN AGRICULTURAL METEOROLOGY, HYDROLOGY, CLIMATOLOGY, DYNAMIC AND SYNOPTICMETEOROLOGY, MODIFICATION OF CLOUDS AND FOGS. THE BOOK WILL BE VALUABLE TO ANY READER WHO STUDIES NATURAL HISTORY OF THE REGION AND TAKES INTEREST IN WEATHER FORECAST, CLIMATE, WATER BODIES, METEOROLOGICAL CONDITIONS OF PLANT GROWTH, ETC. IT WILL BE OF USE TO SPECIALISTS IN HYDROMETEOROLOGY, IN AGRICULTURE, IN AIR, HIGHWAY, RAILWAY AND SEA TRANSPORTATION. TEACHERS, STUDENTS AND PUPILS WILL FIND IT INTERESTING TOO.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202010005-9

Hydrometeorology

MATUSHEVSKIY, G. V.

UDC 551.46:947.[illegible]

MARINE HYDROLOGIC PROCESSES

[Article by Candidates of Physical and Mathematical Sciences [illegible] and [illegible], USSR Hydrometeorological Scientific Research [illegible], State Oceanographic Institute; Moscow, Meteorologiya i Gidrologiya, [illegible], No 12, 1972, submitted 9 August 1972, pp 30-40]

A survey is presented of the Scientific Research performed in the USSR in the field of marine hydrologic forecasts.

Until the beginning of the 1920's, there were no scientifically-[illegible] methods of marine forecasting, and it is possible only to mention a [illegible] for determining the position of the edge of the ice in the Bering Sea [illegible] in 1913 by E. F. Lesgaft and the forecast of ice conditions in the [illegible] Strait compiled in 1916 by B. P. Mul'tanovskiy for the Tayeyr and [illegible].

The first steps of Soviet marine science are connected with the [illegible] of the greatest scientists L. S. Berg, K. M. Deryugin, N. M. Knipovich [illegible] Shokal'skiy. Their authority and organizational efforts helped during the first years of Soviet Power to perform marine research and, above all, [illegible] tionary work. One of the most important problems of these studies was [illegible] investigation of the invariability of individual elements of the regime [illegible] the sea and accumulation of the necessary initial observation data for [illegible] development of marine forecasting methods.

In 1923 the first results of the studies for the development of [illegible] of long-range ice forecasting were published. Thus, the papers by V. Yu. Vize on forecasting the ice conditions of the Bering Sea, the times of [illegible] ance of ice on the Gulf of Finland and the times of clearing of the [illegible] the White Sea of ice based on the methods of "world weather" and [illegible] appeared. In these studies and subsequent papers, V. Yu. Vize strived [illegible] a physical basis for the statistical relations which were obtained. [illegible] these grounds could not be sufficient since at that time the level of [illegible] and the accumulated observation data did not permit the entire complex [illegible] processes relating the factors taken as arguments to the predicted [illegible] to be traced.

A significant event in the development of marine research was the [illegible] International Polar Year in 1932. Thanks to this event, new extraordinarily

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UDC: 8.74

USSR

GLADKIKH, B. A., MATUSHEVSKIY, V. V.

"Application of the Method of Classification to Construction of a Regressive Model"

Tomsk, Kibernetika i vuz--sbornik (Cybernetics and Higher Education--collection of works), Vyp. 5, 1972, pp 78-88 (from RZh-Kibernetika, No 5, May 73, abstract No 5V788 by the authors)

Translation: The paper discusses the problem of piecewise linear approximation of a multidimensional regression problem by using classification methods.

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USSR

DMITRIYEVSKIY, V. A., MATUSHEVSKIY, V. V.

"Braverman and Dorofeyuk Classification Algorithms in Alpha Language"

Kibernetika i vuz. [Cybernetics in the University -- Collection of Works], Tomsk, Tomsk University Press, No 4, pp 184-194, (Translated from Referativnyy Zhurnal, Kibernetika, No 2, 1972, Abstract No 2 V753 by the author's).

Translation: A brief description is presented of the Braverman and Dorofeyuk classification algorithms and their realization in alpha language.

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UDC 621.039.53

USSR

SUKHOTIN, A. M., LANTRATOVA, N. YA., MATUSHKIN, V. A., POLYAKOVA, R. YE., LATERNER, S. A.

"Strength of Building Materials in N_2O_4 at High Temperatures and Pressures"

Dissotsiiruyushch. gazy kak teplonositeli i rab. tela energ. ustanovok -- V sb. (Dissociating Gases as Heat Transfer Agents and the Working Medium of Power Plants -- Collection of Works), Minsk, Nauka i Tekhn. Press, 1970, pp 122-130 (from RZh-Elektrotekhnika i Energetika, No 5, May 1971, Abstract No 50180)

Translation: Results are presented from a study of the strength of building materials in N_2O_4 at temperatures to 700° C and pressures to 150 absolute atmospheres under static conditions. A loss in weight is observed at a temperature of 100° C for all the tested materials. On making the transition to higher temperatures, the losses of weight of all the materials decrease and are gradually replaced by an increase in weight. The surface of the stainless steel samples is covered with dense oxide films. Increasing the pressure increases the corrosion rate by tens of times. There are 5 illustrations, 4 tables and a 3-entry bibliography.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202010005-9

USSR UDC 536.7

SUKHOTIN, A. M., LANTRATOVA, N. YA., MATUSHKIN, V. A., POLYAKOVA, R. YE., and LATERNER, S. A.

"Strength of Structural Materials in N_2O_4 at High Temperatures and Pressures"

Dissotsiiruyushch. Gazy kak Teplonositeli i Rab. Tela Energ. Ustanovok (Dissociating Gasses as Heat Transfer Media and Working Fluids of Power Installations -- collection of works), Minsk, Nauka i Tekhn. Press, 1970, pp 122-130 (from Referativnyy Zhurnal-Yadernyye Reaktory, No 4, 1971, Abstract No 4.50.136)

Translation: In connection with the possibility of using N_2O_4 as a coolant for an atomic power plant, the corrosion resistance of structural materials is studied in an equilibrium mixture of gaseous oxides of nitrogen at temperatures up to 700°C and pressure up to 150 atm. Tests of the corrosion resistance of metal materials in N_2O_4 under static conditions were performed at temperatures of 100 and 500° and pressures of 20 and 50 atm. At 100°, weight loss was observed for all materials tested. At high temperatures, the weight losses of all materials decreased and were gradually replaced by weight gain. The surface of stainless steel specimens is covered by a

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USSR

SUKHOTIN, A. M., et al., Dissotsiiruyushch. Gazy kak Teplonositeli i Rab. Tela Energ. Ustanovok, Minsk, Nauka i Tekhn. Press, 1970, pp 122-130 (from Referativnyy Zhurnal-Yadernyye Reaktory, No 4, 1971, Abstract No 4.50.136)

compact oxide film. Increasing the pressure increases the rate of corrosion by over 10 times. 4 figures; 4 tables; 3 biblio. refs.

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UDC:669.187.6

USSR

MATUSHKINA, I. I., KLYUYEV, A. M., DEDUSHEV, L. A., KOSYREV, L. K., VOLKOV, S. Ye., and SHARAPOV, A. A.

"Thermal Inertia in Electric Slag Remelting"

Proizvodstvo Chernykh Metallov [Production of Ferrous Metals--Collection of Works], No 75, Metallurgiya Press, 1970, pp 167-169

Translation: The influence of stopping (for 1-5 min) the electric slag process on the final macrostructure of ingots of high-chrome heat-resistant steel type EI961, high-chrome manganese steel type EI835, and type ShKh15 ball bearing steel is studied.

The surface of the ingots produced is satisfactory with slight corrugations in the areas where the process was stopped. Obviously, the corrugations are caused by local disruption of the dynamic equilibrium between heat input and outflow.

However, the stopping of the process within the limits studied does not cause appearance of macrostructural defects, since under the conditions of electric slag remelting the metal bath has significant thermal inertia. 1 table.

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USSR

[redacted], Director of the Division of Polar Medicine, Arctic and Antarctic Research Institute

"The First Polar Medical Station"

Moscow, Pravda, 18 Mar 72, p 3

Translation: Our planet's polar regions are acquiring ever greater significance in the life of man. The answers to many of nature's secrets are hidden here; here lie valuable ore deposits, raw chemical materials, and fuels. The Soviet North has ceased to be an unpeopled wasteland, the edge of eternal silence. With every year, the "population" of Antarctica is growing. The Seventeenth Soviet Antarctic Expedition, which is now keeping watch on the sixth continent, is much larger than all preceding ones.

Mastering our Far North and expanding Antarctic research presents many problems to medical science and practice. How, for example, in the adaptation of the human organism to unusual and difficult Arctic and Antarctic conditions progressing? What are the possible complications, how should they be avoided, and how should the acclimatization process be alleviated?

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USSR

MATUSOV, A. L., Pravda, 18 Mar 72, p 3

Such questions have long interested the doctors on Soviet Arctic and Antarctic expeditions. Of course, the first work in this field was episodic and merely a scientific survey of the problems of polar medicine. But gradually, medical and biological research became more systematic and extensive. Today, it is clear that man's acclimatization process in polar zones, particularly in Antarctica, is extremely complex. The organism's adaptation to extreme conditions is accomplished through reorganization of the functions of many internal organs and nervous regulatory systems. For example, the contracting capacity of the cardiac muscle and its electrical activity are impaired; blood pressure changes. Serious shifts also occur in the respiratory and thermoregulatory systems. Even endogenous metabolic processes are affected and immunity is reduced. Significant changes also occur in nervous activity and in man's psychic condition.

Additionally, the human organism possesses enormous resources and capacities for adaptation and normal activity under our planet's most severe and harsh natural conditions. It is necessary only to help him mobilize his resources.

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USSR

MATUSOV, A. L., Pravda, 18 Mar 72, p 3

This once again convinces us of the necessity for long-term, indepth, and multifaceted research of the acclimatization process. The first steps in this direction have already been taken. Today, at each of the six Antarctic stations, two or three doctor-researchers are at work. They are doing prophylactic work, treating the ill, and performing operations. In complex circumstances, electrocardiograms and analysis results are broadcast by radio from Antarctica to our Division of Polar Medicine and we invite the finest specialists in the country for consultation. Besides practical work, the doctors at Antarctic stations conduct serious scientific research according to previously worked out programs.

The next step in expanding our knowledge about acclimatization of the human organism will be the work of the Seventeenth Soviet Antarctic Expedition. It includes 15 specialists in the field of medicine and biology who represent the country's major scientific institutes. They are conducting research at all the Soviet Antarctic stations.

However, a special role is allotted to the medics at the Molodezhnaya Observatory. The first practical scientific medical center in the history of polar

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USSR

MATUSOV, A. L., Pravda, 18 Mar 72, p 3

research has been established here. The excellent building (excellent not only by Antarctic standards) which has been put into operation provides all the opportunities for conducting both medical and prophylactic work as well as multifaceted medical and biological scientific research. The personnel at the medical center are a psychophysiologist, a surgeon, and a therapist. There are about 20 rooms at their disposal: the doctor's reception room, a treatment room, an x-ray laboratory, a pharmacy, an isolation room, an infirmary, a preoperating room, an operating room, a sterilization room, a stomatology room... The medical center is equipped with the latest equipment and apparatus, including three computers.

There are several directions in the research plans of the medical center and of specialists working at other stations on the sixth continent: microbiology, hygiene, and pathological manifestations in the acclimatization process of polar workers. The researchers are interested in a wide number of problems: which diseases are met with most often, and what is the relationship between illness and age, profession, polar experience, time of year, and geographic and climatic conditions which distinguish each Antarctic station. Finally, the psychophysiological direction will be studying the nervous system under

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USSR

MATUSOV, A. L., Pravda, 18 Mar 72, p 3

different conditions, the functioning ability of sensory organs, and the psychological compatibility of people in microcollectives.

Biological research in Antarctica will undoubtedly bring science closer to establishing the bases for polar medicine. This will be of the utmost value for mastering the most severe regions of our planet.

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UDC 616-03(99)

USSR

MATUSOV, A. L.

"Sick Rates Among Members of the Soviet Antarctic Expeditions"

Moscow, Antarktika, Doklady Komissii, No 11, 1972

Translation of abstract: The Polar Medical section of the Order of Lenin Arctic and Antarctic Institute analyzed the incidence of disease among members of the expeditions spending the winter in the Antarctic. They found a definite relationship between the frequency and severity of some diseases and the age and occupation of the explorers.

The small number of diseases resulting in loss of efficiency is indicative of the very satisfactory condition of the groups, excellent medical screening of candidates for the expeditions, improvement in the living conditions of the explorers in thier winter quarters, and great skill of the physicians serving with the Antarctic expeditions.

Study of the structure of the overall morbidity of the explorers showed that five nosological entities (traumas, dental diseases, skin diseases, diseases of the peripheral nervous system, and neuroses) account for about 70% of all the initial visits for medical care.

Continued and more detailed study of human pathology under the

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MATUSOV, A. L., Antarktika, Doklady Komissii, No 11, 1972

extreme conditions of the Antarctic will widen our knowledge of the influence exerted by unfavorable environmental factors on the human body and make a definite contribution to the study of human adaptation in the earth's polar regions.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202010005-9

UDC: 8.74

USSR

MATUSOV, Yu. A., KABANOV, V. S., YANKOVA, M. P.

"Forming a Plan for Prospective Developments"

Tr. Leningr. inzh.-ekon. in-ta (Works of Leningrad Engineering Economics Institute), 1972, vyp. 94, pp 99-102 (from RZh-Kibernetika, No 5, May 73, abstract No 5V792 by V. Mikheyev)

Translation: The paper describes a procedure for forming the plan for prospective developments, which consists in compiling plans in separate scientific and technical areas. Compilation of a plan for a scientific and technical area is preceded by a comparative analysis of correspondence of the expected consumer demand to the possibilities of the sector within the framework of the given scientific and technical area.

The prospective plan of developments is modeled by a "goal-decision" graph whose initial vertices correspond to possible scientific decisions (physical principles, design and technological decisions), while the terminal vertices correspond to the specific goals of the developments (new ele-

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MATUSOV, Yu. A. et al., Tr. Leningr. inzh.-ekon. in-ta, 1972, vyp. 94, pp 99-102

ments, blocks, assemblies, devices), while the arcs correspond to possible ways of realizing the formulated tasks. A consolidated flowchart is presented for an algorithm for forming a plan of prospective developments, and its individual blocks are described.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202010005-9

UDC 621.438

USSR

MATUSOVA, M. K. and TARASOV, V. N.

"Results of an Investigation of Axial Turbine Stages"

Kazan', Izvestiya Vysshikh Uchebnykh Zavedeniy--Aviatsionnaya Tekhnika, No 3, 1973, pp 84-89

Abstract: An analysis is made of the results of tests conducted on a number of turbine stages that were investigated on the basis of a model air turbine at $M_1 = 0.6$ and $Re = 6 \cdot 10^5$. There is ascertained the influence of the law of blade twisting, the ratio $\frac{d_{cp}}{l_2}$, and the value of the radial gap upon the efficiency of stages with bound and unbound working blades. In the analysis, use was made of some experimental data obtained at the Central Scientific Research, Planning and Design Boiler and Turbine Institute; BITM (Bryansk Institute of Transportation Machinery /?/); Moscow Power Engineering Institute; Moscow Aviation Institute imeni Sergo Ordzhonikidze; LPI (Leningrad /L'vov?/ Polytechnic Institute; Khar'kov Polytechnic Institute); KAI (Kazan' /Kuybyshev?/ Aviation Institute); and the Central Scientific Research Institute of Aircraft Engines. 2 tables. 6 figures. 13 references.

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USSR

SHARKOVSKIY, V. A., AKUTIN, M. S., KERBER, M. L., SHCHEGLOV, L. L., MATVELASHVILI, G. A., PUKHOVITSKAYA, A. N., MILL', L. I., GREBENNIKOV, A. V., OSTROVSKAYA, A. YE., and DYMARSKAYA, YE. L.

"New Types of Aminoplastics"

Moscow, Plasticheskiye Massy, No 12, Dec 70, pp 53-54

Abstract: The article describes synthesis of fiberglass plastics based on carbamide binders. These binders include a carbamide oligomer modified by polyvinylacetate emulsion during synthesis, and ures-benzoguanamine-formaldehyde oligomer. Fiberglass textolites based on these oligomers and TS-8/3-250 glass treated with lubricant 752 are mechanically strong. In addition to its excellent strength properties, the plastic based on urea-benzoguanamine-formaldehyde oligomer is also water-resistant.

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UNCLASSIFIED PROCESSING DATE--16OCT70

1/2 032

TITLE--SYNTHESIS AND STUDIES OF POLYMERS WITH PHENANTHRIDINE AND DIAZAPYRENE RINGS -U-

AUTHOR-(03)-KOLESNIKOV, G.S., FEDOTOVA, O.YA., MATVELASHVILI, G.S.

COUNTRY OF INFO--USSR

SOURCE--VYSOKOMOL. SOEDIN. SER A 1970, 12(3), 536-47

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--HETEROCYCLIC NITROGEN COMPOUND, POLYNUCLEAR HYDROCARBON, POLYAMIDE COMPOUND, POLYMER, CHLORINATED ORGANIC COMPOUND, THERMAL STABILITY, THERMAL DEGRADATION, PLASTIC MECHANICAL PROPERTY, POLYMER STRUCTURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED STEP NO--UR/0459/70/012/003/0536/0547

PROXY REEL/FRAME--1995/1201

CIRC ACCESSION NO--AP0116666

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202010005-9

UNCLASSIFIED PROCESSING DATE--16OCT70

2/2 032

CIRC ACCESSION NO--AP0116666

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CYCLODEHYDRATION OF POLY(2,4,BIPHENYLYLENE AMIDES) (I) AND POLY(2,2,BIPHENYLYLENE AMIDES) (II) (PREPD. FROM 2,4 AND 2,2,DIAMINOBIPHENYL AND TEREPHTHALOYL CHLORIDE) WAS STUDIED IN THE PRESENCE OF POCL SUB3 IN PHNO SUB2 AT 100-30DEGREES FOR 1-5 HR. CYCLODEHYDRATION OF I AND II GAVE POLY(PHENANTHRIDINYLENE AMIDE) (III) AND POLY(4,9,DIAZAPYRENYLENE ARYLENE) (IV) OF HIGH THERMAL STABILITY AND RESISTANCE TO OXIDATIVE THERMAL DEGRADATION. THERMAL CYCLODEHYDRATION OF I AND II IN VACUO AT 250-320DEGREES GAVE SOME PHENANTHRIDINE RINGS. THE MECH. PROPERTIES, SOLY., AND THERMAL STABILITY OF III AND IV WERE MAINLY DETD. BY THE STRUCTURE OF THE STARTING AMINES. FACILITY: MOSK. KHIM.-TEKHNOL. INST. IM. MENDELEEVA, MOSCOW, USSR.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202010005-9

UNCLASSIFIED PROCESSING DATE--30OCT70

1/2 016

TITLE--SYNTHESIS OF AROMATIC POLYAMIDES BASED ON 2,4 AND 2,2 PRIME DIAMINOBIPHENYLS -U-

AUTHOR-(04)-KOLESNIKOV, G.S., FEDOTOVA, O.YA., NATVELASHVILI, G.S., GUTSALYUK, E.V.

COUNTRY OF INFO--USSR

SOURCE--VYSOKOMOL. SOEDN., SER. A 1970, 12(3), 528-35

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--POLYAMIDE COMPOUND, AMINE, POLYNUCLEAR HYDROCARBON, THERMAL STABILITY, POLYMER STRUCTURE, POLYCONDENSATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

STEP NO--UR/0459/70/012/003/0528/0535

PROXY REEL/FRAME--1995/1186

CIRC ACCESSION NO--AP0116651

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202010005-9

UNCLASSIFIED PROCESSING DATE--30OCT70

2/2 016

CIRC ACCESSION NO--AP0116651

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AROMATIC POLYAMIDES (I) WERE PREPD. BY LOW TEMP. POLYCONDENSATION IN ACNME SUB2 OF 2,2 PRIME DIAMINOBIPHENYL AND 2,4,DIAMINOBIPHENYL AND SEVERAL AROMATIC ACID CHLORIDES, E.G., ISOPHTHALOYL AND TEREPHTHALOYL CHLORIDES AND 2,6,PYRIDINEDICARBOXYLIC ACID DICHLORIDE. I HAD SOFTENING POINTS OF 110-300DEGREES. POLY(2,4,BIPHENYLYLENE AMIDES) AND POLY(2,2 PRIME BIPHENYLYLENE AMIDES) (E.G. II) EXHIBITED SUPERIOR THERMAL STABILITY AND RESISTANCE TO OXIDATIVE THERMAL DEGRADATION. THE EFFECTS OF POLYMER STRUCTURE ON PHYSICOMECH. AND CHEM. PROPERTIES ARE DISCUSSED.

FACILITY: MOSK. KHIM. TEKHNOL. INST. IM. MENDELEEVA, MOSCOW, USSR.

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Acc. Nr.: AP0041159 Ref. Code: UR 0121

USSR UDC 621.923.5:621.922.023

FRAGIN, I. YE., FOMIN, A. A., ~~MATVEYEVA, L. YE.~~

"The Honing of Hardened Cylinder Sleeves by Large-Grained Abrasive Blocks"

Moscow, Stanki i Instrument, No 1, 1970, pp 21-24

Abstract: The article deals with a study of the honing of hardened cylinder sleeves with large-grained abrasive blocks in order to determine the influence of the honing conditions and the structure of the blocks upon their wear and specific consumption, the productivity of the honing process and the errors in the shape of the opening. The purpose of the study was to determine the optimum grain size and hardness for the abrasive blocks. The research included investigation of the influence of specific pressure upon metal removal and block wear, the influence of the speed of the reciprocal motion upon metal removal and block wear, investigation of the influence of the peripheral velocity upon metal removal and

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block wear, determination of the relationship of ovality correction upon the cutting conditions, the effect of the machining time upon productivity and ovality correction.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202010005-9

Microelectronics

USSR UDC 621.3.049.75

VORONA, A. V., MATVEYCHUK, A. I., SAPEGIN, F. M.

"A Holder for a Printed-Circuit Base"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 2, Jun 71, Author's Certificate No 290495, division H, filed 1 Apr 68, published 22 Dec 70, p 170

Translation: This Author's Certificate introduces a holder for printed circuit bases. The device contains a base and a spring. As a distinguishing feature of the patent, the mass of the holder is reduced and access is provided to both sides of the printed-circuit base. The base of the holder is made in the form of a split ring equipped with an inner triangular channel for the printed-circuit base, and an outer channel of any shape which accommodates a spring-loaded split ring.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202010005-9

USSR UDC: 621.396.6-181.5

PARFENYUK, V. M., VORONA, A. V., ZHDANOV, A. N., MATVEYCHUK, A. I.

"A Device for Charging Evaporators"

USSR Author's Certificate No 270433, filed 20 Jan 67, published 13 Aug 70 (from RZh-Radiotekhnika, No 1, Uan 71, Abstract No 1V222 P)

Translation: This Author's Certificate introduces a device for charging evaporators such as vacuum atomizing chambers. The device contains a ratchet drum, a trough and a shield. As a distinguishing feature of the patent, the operational reliability of the device is improved by fastening the shield to the trough, the housing of the device is coupled through leaf springs to a rotating lever, and the ratchet drum is fitted with a socket which accommodates a plunger.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202010005-9

UDC 519.2

USSR

MATVEYCHUK, M. S.

"Random Norms and Properties of Probability Measures in Orthoprojectors Connected to a Factor"

V sb. Veroyatnostn. metody i kibernet. (Probability Methods and Cybernetics -- collection of works), Vyp. 9, Kazan', Kazan' University, 1971, pp 73-77 (from RZh-Kibernetika, No 9, Sep 72, Abstract No 9V26)

Translation: Let M be a factor of a finite class in a complex Hilbert space H, M^P be the set of orthoprojectors of the ring M, $E^{\hat{A}}_x$ be the continuous unit expansion on the left of the operator $\hat{A} = (AA^*)^{1/2}$, m be the probability dimension in the logic M^P. In the space M, the random norm is introduced by the expression $||A||(x) = m(E - E^{\hat{A}}_x)$, $x \in R$. It is demonstrated that $A \to ||A||$ satisfies the triangle inequality

$$||A + B||(x) \leq \inf_{t \in [0,1]} \min \{||A||(tx) + ||B||(x - tx), 1\}, \quad x \in R,$$

when and only when m is the relative dimensionality.

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UNCLASSIFIED PROCESSING DATE--20NOV70

1/2 025

TITLE--SLOW COLLISIONS IN A THREE BODY SYSTEM INVOLVING COULOMB INTERACTION III. SCATTERING LENGTHS FOR COLLISION PROCESSES BETWEEN HYDROGEN

AUTHOR-(02)-MATVEYENKO, A.V., PONOMAREV, L.I.

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL EKSPERIMENTAL'NOY I TEORETICHESKOY FIZIKI, 1970, VOL 58, NR 5, PP 1640-1645

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--COLLISION, COULOMB INTERACTION, HYDROGEN, PARTICLE SCATTER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/0023 STEP NO--UR/0056/70/058/005/1640/1645

CIRC ACCESSION NO--AP0127673

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202010005-9

UNCLASSIFIED PROCESSING DATE--20NOV70

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CIRC ACCESSION NO--AP0127673

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SCATTERING LENGTHS AND THE LIMITS OF APPLICABILITY OF THIS CONCEPT ARE DETERMINED FOR SYMMETRIC CHARGE EXCHANGE PROCESSES IN HYDROGEN MESOATOMS (PRIMED) BY APPLYING THE PHASE FUNCTION TECHNIQUE. THE VALUES OF THE SCATTERING LENGTHS FOR ALL THREE PROCESSES IN EVEN (A SUBG) AND ODD (A SUBU) CHANNELS ARE PRESENTED IN THE TABLE. FACILITY: OB"YEDINENNYY INSTITUT YADERNYKH ISSLEDOVANIY. FACILITY: INSTITUT TEORETICHESKOY FIZIKI, AKADEMII NAUK UKRAINSKOY SSR.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202010005-9

Acc. Nr AP0048460 Abstracting Service: CHEMICAL ABST. 5/70 Ref. Code UR0449

M

105268h Negative magnetoresistance of n-gallium antimonide. Matyuenko, A. V.; Parfen'ev, R. V.; Shalyt, S. S. (Inst. Poluprov., Leningrad, USSR). *Fiz. Tekh. Poluprov.* 1970, 4(1), 191-4 (Russ). The magnetoresistance, the Hall effect, and the elec. resistivity of n-type GaSb single crystal with carrier concn. of $1.7 \times 10^{17}/cm^3$ were studied. Neg. magnetoresistance was found in transverse and longitudinal weak magnetic fields at 1.4-140°K. This phenomenon may be explained as assocd. with an addnl. scattering of current carriers on localized electron spins. L. Koudelka

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202010005-9

1/2 013 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--NEUTRON DIFFRACTION STUDY OF THE STRUCTURE OF TITANIUM OXYCARBIDES -U-

AUTHOR-(05)-ZUBKOV, V.G., MATVEYENKO, I.I., DUBROVSKAYA, L.B., BOGOMOLOV, G.D., GELD, P.V.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK. SSSR 1970, 191(2), 323-5

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--TITANIUM CARBIDE, NEUTRON DIFFRACTION, ELECTRIC RESISTANCE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1995/1114 STEP NO--UR/0020/70/191/002/0323/0325

CIRC ACCESSION NO--AT0116580

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202010005-9

2/2 013 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AT0116580

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ELEC. RESISTANCE WAS MEASURED AT 298DEGREESK FOR A SERIES OF SAMPLES OF TIC SUBX O SUBY (X PLUS Y EQUALS 1), AND TIC SUB0.44 O SUB0.57 WAS STUDIED BY NEUTRON DIFFRACTION. THE SAMPLES WERE PREPD. BY A METHOD DESCRIBED EARLIER (L. PIVOVAROV ET AL., 1967). THE CONCN. DEPENDENCE OF THE RESISTANCE IS CHARACTERISTIC FOR ORDERED SYSTEMS, AND THIS WAS SUPPORTED BY THE NEUTRON DIFFRACTION DATA. THE O AND C ATOMS ARE IN AN ORDERED POSITION IN THE NONMETALLIC SUBLATTICE. FOR COMPNS. THAT ARE NOT EQUI AT., THE ATOMS OF THE EXCESS COMPONENT OCCUPY UNIQUE POSITIONS IN THE STATISTICALLY VACANT POSITIONS FOR THE DEFICIENT COMPONENT. FACILITY: INST. KHIM., SVERDLOVSK, USSR.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202010005-9

So: JPRS 59985
7 SEP 73

UDC 621.396.628:523.164

PARAMETERS OF THE RT-22 KRAO RADIOTELESCOPE ANTENNA AT WAVELENGTHS OF 3 AND 1.35 CENTIMETERS

[Article by L.R. Barbrakh, M.I. Grigor'yeva, V.A. Efimov, L.R. Kogan, V.I. Fostenko, L.I. Matveyenko, I.G. Moiseyev, and Yu. G. Monin of the Institute of Space Research of the USSR Academy of Sciences; Moscow, Izvestiya Vysshikh Uchebnykh Zavedeniy — Radiofizika, Russian, Vol 16, No 5, 1973), submitted 3 July 1972, pp 675-679]

A two-reflector antenna system in the 3-centimeter wave band was developed in 1966 in order to improve the KrAO [Crimean Astrophysical Observatory] RT-22 radiotelescope[1] and, to provide maximum sensitivity, it was tuned and its basic electrical parameters at 3.34 centimeters were determined. In developing the illuminating system of the KrAO's RT-22, the operating experience of the FIAN[2] [Physics Institute imeni P. N. Lebedev of the USSR Academy of Sciences] RT-22 was considered and certain changes in its system parameters were introduced: the diameter of the secondary reflector D_2 = 1,500 millimeters, and the system's secondary focus was chosen as 200 millimeters from the vertex of the paraboloid with a view to insuring minimal losses in the millimeter waveband. These circumstances limited the longitudinal dimension of the irradiator in the 3-centimeter wave band. The two-reflector irradiator has a comparatively small longitudinal dimension, which is why it was chosen. Its scheme was tried out on an analogical antenna, the FIAN RT-22[2], and gave satisfactory results.

The radiation patterns of the two-reflector irradiator in the E and H planes and the cross-polarization characteristic at the 3.34 centimeter wavelength are shown in figure 1. The irradiator's dispersion coefficient, computed per the radiation pattern, does not exceed β = 0.2.

Preliminary tuning of the antenna was done on the sun, final tuning on radio sources of small angular size. A radiometer with a parametric amplifier was used in tuning at the

MATVEYENKO, L.I.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202010005-9

1/2 022 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--ON THE RELATION BETWEEN THE PULSAR NP 0532 AND A RADIO SOURCE OF SMALL ANGULAR DIAMETER -U-

AUTHOR-(02)-MATVEYENKO, L.I., LOTOVA, N.A.

COUNTRY OF INFO--USSR

SOURCE--ASTRONOMICHESKII ZHURNAL, VOL. 47, NO. 3, 1970, P. 483-486

DATE PUBLISHED--------70

SUBJECT AREAS--ASTRONOMY,ASTROPHYSICS

TOPIC TAGS--PULSAR, COSMIC RADIO SOURCE, SPECTRUM, NEBULA, RADIO EMISSION, SUPERNOVA

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----FD70/605012/C01 STEP NO--UR/0033/70/047/003/0483/0486

CIRC ACCESSION NO--AP0140258

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202010005-9

2/2 022 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0140258

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IT IS SHOWN ON THE BASIS OF THE SPECTRA AND THE PULSE DURATION, THAT THE SOURCE OF SMALL ANGULAR DIAMETER IN CENTRAL PART OF THE CRAB NEBULA MAY BE ASSOCIATED WITH THE PULASR AND HIS MAGNETOSPHERE. THE RELATION POSITION OF PULSAR ALONG THE LINE OF SIGHT WITH RESPECT TO THE CENTER OF THE NEBULA IS ESTIMATED FROM THE ROTATION OF PLANE POLARISATION OF RADIO EMISSION OF THE NEBULA AND FROM TOTAL NUMBER OF ELECTRONS ON THE LINE OF SIGHT. THE PULSAR LIES WITHIN THE NEBULA WITH THE UNCERTAINTIES IN THE VALUES OF THE PARAMETERS OF MEDIUM AND POSITION THE SHELL OF THE NEBULA. THE SIZE OF PULSAR IN THE SUPERNOVA REMNANT VELA X IS ALSO ESTIMATED. FACILITY: AKADEMIIA NAUK SSR, FIZICHESKII INSTITUT, MOSCOW, USSR.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202010005-9

USSR

UDC: 51:801

MATVEYENKO, V. A.

"Derivation of the Particle 'Only' From Restrictive Verbs"

V sb. Mash. per. i prikl. lingvist. (Machine Translation and Applied Linguistics--collection of works), vyp. 14, Moscow, 1971, pp 96-113 (from RZh--Kibernetika, No 6, Jun 72, Abstract No 6V612)

Translation: The paper is an analysis of the semantics of a group of verbs with restrictive meaning (to limit, to be confined, to summarize, to bring together, to concentrate, to exhaust, to get rid of, etc.). The semantic characteristics of the verbs are represented in terms of the system of meanings in the Zholkovskiy-Mel'chuk conception.

The first part of the paper is a description of the semantic structure of individual verbs in the given list, beginning with the word which is the most explicit with respect to semantics -- "to limit" [ограничить]. The initial verbs -- in their minimum analysis and with participants of their situation -- are represented as a generalized graph with given vertices. A complete variant of the pattern is possible ("John limits the participation of Peter in work on the subject of checking incoming materials"), as well as a number of incomplete variants -- degenerate patterns -- ("They

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USSR

MATVEYENKO, V. A., Mash. per. i prikl. lingvist., vyp. 14, Moscow, 1971, pp 96-113

limited Peter to three minutes", etc.).

The second part of the work deals with the problem of correcting the meaning of a given word with the meanings of other words in a sentence. The author introduces the rule: if two meanings belonging to two words of a text contradict each other, then the implicitly expressed meaning is cancelled out.

The third part of the article is devoted to reorienting the initial semantic graph toward another vertex or segment. In this regard, the corresponding relation has the capacity for setting apart a meaning -- a predicate which becomes the main vertex of the new graph. A demonstration is given of transition from the general pattern to specific semantic-syntactic structures. The work ends with a specific description of the lexical co-occurrence of the particle "only" derived as a result of transformation of restrictive verbs. T. Nikolayeva.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202010005-9

1/2 012 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--DETERMINATION OF EXCESS REACTIVITY -U-

AUTHOR-(02)-SHULEPM, V.S., MATVEYENKO, V.I.

COUNTRY OF INFO--USSR

SOURCE--AT. ENERG. 1970, 28(4), 355

DATE PUBLISHED--------70

SUBJECT AREAS--NUCLEAR SCIENCE AND TECHNOLOGY, PHYSICS

TOPIC TAGS--WATER MODERATED REACTOR, NUCLEAR REACTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3008/0593 STEP NO--UR/0089/70/028/004/0355/0355

CIRC ACCESSION NO--AP0137678

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2/2 012 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0137678

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FOR DETG. THE EXCESS REACTIVITY IN A WATER MODERATED REACTORS WITH A REFLECTOR, THE METHOD PROPOSED EARLIER (S. KRASIK AND A. RADKOVSKII, 1955) WAS APPLIED BY INTRODUCING A CORRECTION DELTA DEFINED AS DELTA EQUALS P SUB2 MINUS P SUB1, WHERE P SUB2 WAS THE CALCD. EXCESS REACTIVITY OF THE FULL SIZE REACTOR ACCORDING TO THE ABOVE METHOD AND P SUB1 WAS THE VALUE DETD. FROM EQUATION P SUB1 EQUALS INTEGRAL OF PRIMEHO SUBHM (SINULETP-SINULETHO)(H, R SUBKION PLUS P(H SUBM, R SUBO)F WHERE H SUBO AND R SUBO WERE THE LENGTH AND RADIUS OF THE FULL SIZE REACTOR, RESP., H SUBH WAS THE MIN. EXPTL. CRIT. HEIGHT OF THE ACTIVE ZONE, AND R SUBK WAS THE CRIT. RADIUS AT THE HEIGHT H OF THE ACTIVE ZONE. A SIMILAR EQUATION WAS RECOMMENDED FOR INHOMOGENEOUS ACTIVE ZONE; THE RESULTS CALCD. BY APPLYING VARIOUS APPROXNS. ARE GIVEN.

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USSR

UDC: 533.9...16

BASOV, N. G., ZARITSKIY, A. R., ZAKHAROV, S. D., KRYUKOV, P. G., MATVEYETS, Yu. A., SENATSKIY, Yu. V., FEDOSIMOV, A. I., CHEKALIN, S. V.

"Producing High-Power Light Pulses on Wavelengths of 1.06 and 0.53 μm and Using Them to Heat a Plasma. II. A Neodymium Glass Laser With Conversion of Emission to the Second Harmonic"

Moscow, Kvant. elektronika--sbornik (Quantum Electronics--collection of works), "Sov. radio", 1972, pp 50-55 (from RZh-Fizika, No 6, Jun 73, abstract No 6G375)

Translation: Investigations of processes of heating by means of laser sources with different wavelengths are of considerable importance for explaining mechanisms of energy transfer in laser heating of a plasma. This paper tells of the development of a high-power light source for heating experiments with emission on two wavelengths: the wavelength of a neodymium laser (1.06 μm) and its second harmonic (0.53 μm). An efficiency of greater than 50% in converting 1.06-μm emission to the second harmonic is achieved in a KDP crystal. The emission energy on the 0.53-μm wavelength is 10 j with a pulse duration of 1.0 ns. Part I, see RZhFiz, 1973, 5G239.

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USSR

UDC 621.378.325 + 543.46

BASOV, N.G., ZARITSKIY, A.R., ZAKHAROV, S.D., KRYUKOV, P.G., MATVEYETS, YU.A., SENATSKIY, YU.V., FEDOSIMOV, A.I., CHEKALIN, S.V.

"Achievement Of Powerful Light Pulses At A Wavelength Of 1.06 And 0.53 Micron And Their Use For Plasma Heating. II--Nd-Glass Laser With Conversion Of Radiation To The Second Harmonic"

Kvantoveya elektronika (Quantum Electronics), Moscow, No 6(12), 1972, pp 50-55

Abstract: The construction is described and the characteristics presented of a multistage Nd-glass laser. The laser assembly consists of the following: 1) Active elements of GLS-1 neodymium glass, 700 mm long with ends cut at a Brewsterian angle; 2) Resonator mirror; 3) Cells with clearing absorber; 4) Aperture diaphragms; 5) Selectors of longitudinal types of oscillations in oscillator; 7) Lenses; and 8) Electrooptical gate with a laser discharger. A driving oscillator assembled according to the scheme of an oscillator with self-synchronization of modes serves as the source of short light pulses in the device. The length of the oscillator resonator, formed by two mirrors with reflection coefficients of 100 and 20 percent, amounts to 6 m. Cells with a nonlinear absorber -- a solution of No. 3955 dye in nitrobenzene -- were in contact with an opaque mirror. Two selectors of axial modes in the form of

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BASOV, N.G., et al, Kvantovaya elektronika, Moscow, No 6(12), pp 50-55

(4)

inclined Fabry-Perot interferometers were used for narrowing of the generation spectrum. With the aid of these interferometers the generation spectrum was narrowed to ~0.05 Å and in so doing the pulses emitted by the oscillator were expanded to 1 nanosec. In the KDP crystal the radiation at the output is converted into a second harmonic with an efficiency greater than 50 percent. The radiation energy at a 0.53 micron wavelength amounts to 10 joule. The authors thank M.F. Stel'makh, I.S. Rez, A.I.Kovrigin, and V.P.Polev for assistance in conducting experiments with KDP crystals. 3 ill. 16 ref. Received by editors, 25 Oct 1971.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202010005-9

USSR

UDC 543.46 + 621.375.325

BASOV, N.G., ZARITSKIY, A.R., ZAKHAROV, S.D., KROKHIN, O.N., KRYUKOV, P.G., MATVEYETS, YU.A., SENATSKIY, YU.V., FEDOSIMOV, A.I.

"Achievement Of Powerful Light Pulses At 1.06 And 0.53 Micron Wavelengths And Their Use For Plasma Heating. I. Experimental Study Of The Processes Of Radiation Reflection During Laser Heating Of Plasma At Two Wavelengths"

Kvantovaya elektronika (Quantum Electronics), Moscow, No 5(11),1972, pp 63-71

Abstract: The experimental results are presented of calorimetric, temporal, spectral and polarization measurements of radiation reflected back from plasma which is heated by nanosecond laser pulses with a wavelength of 1.06 and 0.53 micron with fluxes at targets of various materials exceeding 10^{14} watt/cm^2. The results discussed represent the first attempt to study laser heating of plasma which is produced at solid targets in the green region of the spectrum. It is found that plasma absorption of the heating light at a 0.53 micron wavelength is three times greater than at a 1.06 micron wavelength. The authors express their appreciation to V.B. Rozanov for discussion of the results of the work. 3 fig. 19 ref. Received by editors, 25 Oct 1971.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202010005-9

USSR UDC 621.375.82

KRYUKOV, P. G., MATVEYETS, YU. A., SENATSKIY, YU. V., FEDOSIMOV, A. I., CHEKALIN, S. V., and SHATBERASHVILI, O. B.

"On Mechanisms for Radiation Energy and Power Limitation During the Amplification of Ultrashort Pulses in Neodymium Glass Lasers"

V sb. Kvant. elektronika (Quantum Electronics -- Collection of Works), No 2(14), Moscow, "Sov. Radio," 1973, pp 102-105 (English summary) (from RZh-Fizika, No 10, Oct 73, Abstract No 10D834 from authors' abstract)

Translation: It is shown that a limitation of the energy and power of ultrashort pulses during amplification in Nd glass lasers sets in as a result of the nonlinear interaction of the laser radiation with the optical medium of the laser itself. Emerging as limitation mechanisms here are breakdowns due to self-focusing in the case of the propagation of light beams close to parallel through the amplifier, and spectrum broadening and radiation scattering in the case of divergent beams.

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USSR

UDC: None

KRYUKOV, P. G., MATVEYETS, Yu. A., CHEKALIN, S. V., and SHATBERASHVILI, O. B.

"Forming Ultrashort Laser Pulses With a Two-Component Medium"

Moscow, Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, vol 16, No 3, 1972, pp 117-120

Abstract: The purpose of this letter is to investigate the possibility of forming single ultrashort laser pulses using a medium which amplifies and is a nonlinear absorber with fast relaxation time in the light-transmission state. Since such a medium is absorbent for weak signals and amplifying for strong, powerful amplification, discrimination is exerted on the input pulse. If the relaxation time for the absorber is low enough, the already short pulse derived from a laser with autosynchronization can be made even shorter. A diagram of the experimental arrangement for this investigation is given and comparison diagrams of the pulse before and after passage through the two-component medium are shown. Associated with the P. N. Lebedev Physics Institute of the USSR Academy of Sciences, the authors express their gratitude to S. A. Churilova, A. N. Zherikhin, and Ye. V. Kurganova for their assistance with the experimental work.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202010005-9

MATVEYETS, YU. A.

8 Jan 73

ACADEMY OF SCIENCES OF THE USSR

P. N. LEBEDEV PHYSICAL INSTITUTE

Preprint № 82

DIRECT PHOTOCOLOR HOLOGRAPHIC EXPLORATION OF A

[illegible]

[illegible]

Presented at the Conference on Zeeland

Optics, Minsk, 27 June - 2 July, 1972

[illegible]

[illegible]

[illegible]

[illegible]

[illegible], USSR, 1972

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DURATION [illegible] FORMATION OF A [illegible]

[illegible] RADIATION

N.G.[illegible] x), [illegible] xx), P.G.[illegible] x),
[illegible] x), [illegible] xxx), [illegible] xxx),
[illegible] x), [illegible] xxx)

INTRODUCTION

Presently the mode-locked Nd-glass lasers are the subject of extensive research efforts aimed at the determination of their radiation shape and duration. As the expected single pulse duration is $\lesssim 10^{-10}$ sec, all the conventional diagnostic techniques (wide-band oscilloscopes with coaxial photocells, ordinary image converter [illegible]) fail to provide detailed information on the radiation pulse shape.

There are some indirect methods (Ref. 1-3) for evaluating the duration of the laser [illegible] pulses (1-7). Unfortunately, these methods based upon the measurement of second and higher-order correlation functions are unable to give unambiguous results unless some assumptions are made concern-

x) P.N.Lebedev Physics Institute of the Academy of Sciences of the USSR

xx) All-Union Research Institute of Optical-Physical Measurements

xxx) I.V.Kurchatov Institute of Atomic Energy

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202010005-9"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202010005-9

USSR

ZARITSKIY, A. R., ZAKHAROV, S. D., KRYUKOV, P. G., MATVEYEV, YU. A., and FEDOSIMOV, A. I., Physics Institute imeni P. N. Lebedev, Academy of Sciences USSR

"Variations in Back-Scattered Radiation Spectrum During Laser Heating of Plasma"

Moscow, Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 15, No 4, 20 Feb 72, pp 184-186

Abstract: It is known that strong back-scattering of laser light occurs during the high-power laser radiation heating of a plasma with the use of solid targets. The authors measured the spectrum of the laser light reflected by the plasma. The targets used were LiD, $(CD_2)_n$, heavy ice, Al. The radiation source was a self-mode-locking Nd laser consisting of a master oscillator and a six-stage amplifier. The plasma heating and spectral measurements were carried out on the fundamental frequency (λ = 1.06 microns), as well as on the second harmonic frequency (λ = 0.53 micron). The measurements were

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USSR

ZARITSKIY, A. R., et al., Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 15, No 4, 20 Feb 72, pp 184-186

made on a grating spectrograph with f = 130 cm. The back-scattered radiation spectrum was found to have a large number of equidistant lines, situated generally both in the Stokes and the anti-Stokes part of the spectrum. This is due to the presence at the line of incident radiation from weak satellites, the distance between which equals the interval between the lines of reflected light. The observed process is of a stimulated character. Its explanation may be related to the phase modulation of high-power light pulses in the plasma layer.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002202010005-9

1/2 022 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--EXCRETION OF CORTICOSTEROIDS WITH THE URINE IN PATIENTS WITH INFECTIOUS HEPATITIS FOLLOWING HYDROCORTIZONE TESTS -U-

AUTHOR--MATVEYEV, A.A.

M

COUNTRY OF INFO--USSR

SOURCE--TERAPEVTICHESKIY ARKHIV, 1970, VOL 42, NR 5, PP 15-16

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

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ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHOR STUDIED THE EXCRETION OF 17,OXICORTICOSTEROIDS (17-OCS) WITH THE URINE IN PATIENTS WITH INFECTIOUS HEPATITIS AFTER INTRAMUSCULAR AND INTRAVENOUS INTRODUCTION OF CORTICOSTEROID HORMONES. AFTER SINGLE INTRAMUSCULAR INTRODUCTION OF HYDROCORTIZONEACETATE (FROM 50 TO 200 MG) NO EXCRETION OF 17-OCS WITH THE URINE WAS SEEN. AFTER INTRAVENOUS INTRODUCTION OF 50-100 MG OF HYDROCORTIZONE AT THE ACME OF THE DISEASE IN THE URINE FOR 21 HOURS WAS 5PERCENT OF THE INTRODUCED DOSE OF THE HORMONE; DURING RECONVALESCENCE EXCRETION OF 17-OCS IN THE SAME PATIENTS INCREASED UP TO 10PERCENT OF THE INTRODUCED DOSE. A LOW LEVEL OF 17-OCS EXCRETION AT THE ACME IN ENTERAL AND PARTENTERAL INTRODUCTION OF PREDNIZOLONE WITH SUBSEQUENT INCREASE OF CORTICOSTEROID EXCRETION WITH IMPROVEMENT OF THE PATIENTS CONDITION WAS NOTED. THE RESULTS OBTAINED POINT OUT THE RETENTION OF CORTICOSTEROIDS IN THE ORGANISM OF PATIENTS WITH HEPATITIS ESPECIALLY DURING THE ACME OF THE DISEASE. THERE IS AN OPINION THAT THE DEGREE OF CORTICOSTEROID RETENTION AFTER HORMONE INTRODUCTION APPARENTLY REFLECTS THE REQUIREMENTS OF THE PATIENT IN CORTICOSTEROID HORMONES AND THIS CIRCUMSTANCE MAY SERVE AS A BASIS FOR A MORE RATIONAL USE OF HORMONES IN HEPATITIS IN ACCORDANCE WITH THE REQUIREMENTS OF THE ORGANISM IN CORTICOSTEROIDS DURING DIFFERENT PERIODS OF THE DISEASE.

FACILITY: KAFEDRA INFEKTSIONNYKH BOLEZNEY VITEBSKOGO MEDITSINSKOGO INST.

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USSR UDC 615.477:616-089.29

ADRIANOV, YU. M., ZEL'TSER, A. YA., MATVEYEV, A. P., and FARMENOV, A. L.,

"Prosthetic Arm With Electrohydraulic Drive Mechanism"

USSR Author's Certificate No 320281, filed 17 Dec 69, Published Dec 71 (from Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 34, Dec 71, Abstract No 61f 1/06)

Translation of Russian Abstract: A prosthetic arm with electrohydraulic drive mechanism is described. It includes an artificial wrist, forearm and shoulder sockets, a nonreversible pump, hydrocylinders, an electric motor and battery, overflow valve, compensation reservoir, valve distributors, and electronic control units. It is distinguished by the fact that, in order to regulate grasping force and ensure parallel operation of the working parts, hydraulic resistance is established in it parallel to the hydraulic relay element, for example in the form of a constant choke with advance regulation. This interacts with the elastic wrist element which is made in the shape of a spring and connected by a coupling rod to the hydrocylinder ram and the lever elements of the wrist mechanism. For each pair of movements, two value distributors are installed with control coils containing two support elements.

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Soviet Inventions Illustrated, Section II Electrical, Derwent,

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243944 PERMEABILITY TESTER FOR FABRICS contains an elastic chamber for the water supply to the tested fabric and clamps for keeping the test piece in position. The test is carried out by filling the container 1 with a given quantity of liquid and narrow end is held by a clamp. If necessary the sample is glued on to a both air and water non-permeable film 6, with a hole in the middle 7. The test piece is placed in such a way that the hole is right over the cent e of the ring 2.

A hose is connected to a vacuum pump, creating a vacuum in cavity 3 and the atmosphere pressure presses the ring against the sample fabric, causing the squeezed out liquid to overflow into the lower part of the chamber.

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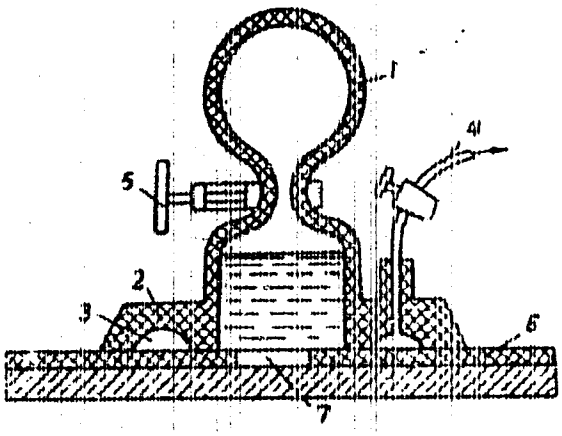

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