USSR

UDC: 577.4

METESHKIN, A. A., Ryabukha, N. D.

"Division of States of Automata Being Tested into Subsets"

Pribory i Sistemy Avtomatiki. Resp. Mezhved. Temat. Nauch.-tekhn. Sb. [Automation Systems and Devices], 1972, No 24, pp 82-89 (Translated from Referativnyy Zhurnal Kibernetika, No 11, 1972, Abstract No 11V360)

Translation: Methods of subdivision of states of automata being tested into subsets are studied. A method for subdivision is suggested, as well as expressions for calculation of test effectiveness, which can be used to plan systems for testing of computer devices.

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USSR

UDC 577.4

METESHKIN, A. A., RYABUKHA, N. D.

"Separation of the States of a Controlled Automaton Into Subsets"

Pribory i sistemy avtomatiki. Resp. mezhved. temat. nauch.-tekhn. sb. (Automation Devices and Systems. Republic Interdepartmental Thematic Scientific-Technical Collection), 1972, No. 24, pp 82-89 (from RZh-Matematika, No 11, Nov 72, Abstract No 11V360)

Translation: Methods for separating the states of a controlled automaton into subsets are investigated. A separation method and also an expression for calculating the effectiveness of the control are proposed which can be used in designing systems for the control of computer elements and devices. Authors abstract.

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1/2 020 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--DYNAMICS OF PERIPHERAL VENOUS PRESSURE IN PATIENTS FOLLOWING CEREBRAL SURGERY -U-

AUTHOR-(02)-KAPUSTIN, S.M., RYABUKHA, N.P.

COUNTRY OF INFO--USSR

SOURCE--VOP NEIROKHIR 24(1): 46-50. 1970

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--CEREBRUM, BRAIN, SURGERY, HYPERTENSION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3009/0133 STEP NO--UR/0609/70/034/001/0046/0050

CIRC ACCESSION NO--AP0138998

UNCLASSIFIED

2/2 020 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0138998

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. VENOUS PRESSURE WAS INVESTIGATED IN 91 PATIENTS AFTER BRAIN SURGERY. IN POSTOPERATIVE PATIENTS ITS MAGNITUDE WAS NOTED TO BE CLOSELY RELATED TO THE INTRACRANIAL PRESSURE, REPSIRATION AND CARDIOVASCULAR ACTIVITY. THE VENOUS PRESSURE DYNAMICS, THE ASSESSMENT OF THE GENERAL CONDITION OF THE PATIENTS, OF THE ARTERIAL PRESSURE AND RESPIRATION AID IN CORRECT PROGNOSIS. LONG TERM VENOUS HYPERTENSION IS TO BE REGARDED AS AN UNFAVORABLE PROGNOSTIC SIGN AND AS AN INDICATION FOR MORE ENERGETIC THERAPY AIMED AT REDUCING INTRACRANIAL HYPERTENSION AND NORMALIZATION OF RESPIRATION. FACILITY: S. M. KIROV LENINGRAD INST. POSTGRAD. MED., LENINGRAD, USSR.

UNCLASSIFIED

1/2 013 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--ANTIPHLOGISTIC ACTION OF IPRAZIDE AND DG 2 (2,4 DIGLUCOSYLHYDRAZINO) 6 METHYLPYRIMIDINE -U-
AUTHOR--RYABUKHA, T.K.

COUNTRY OF INFO--USSR

SOURCE--FARMAKOL. TOKSIKOL. (MOSCOW) 1970, 33(2), 199-201

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--EDEMA, ANTIINFLAMMATORY DRUG, SEROTONIN, TRYPSIN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/0182 STEP NO--UR/0390/70/033/002/0199/0201

CIRC ACCESSION NO--AP0119178
UNCLASSIFIED

2/2 013 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0119178

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IPRAZIDE AND DG 2 ADMINISTERED I.P. TO RATS AT 10PERCENT L D SUB50 (FOR MICE) HAD ANTIPHLOGISTIC ACTIVITY AGAINST FORMALIN INDUCED EDEMA OF THE REAR PAW. DG 2 HAD HIGHER ACTIVITY THAN IPRAZIDE ON EDEMA CAUSED BY TRYPSIN, SEROTONIN, OR CARRAGENAN. DG 2 BUT NOT IPRAZIDE SHOWED ANTIPHLOGISTIC ACTIVITY IN ADRENALECTOMIZED RATS. FACILITY: KIEV. NAUCH. ISSLED. INST. FARMAKOL. TOKSIKOL., KIEV. USSR.

UNCLASSIFIED

USSR

UDC 621.357.12.035.2

RYABUKHIN, A. G., YERSHOV, A. I., GRISHAYENKOV, B. G., GAVRILOV, B. A.

"Optimal Current Density for Decomposition of Water in an Electrolytic Cell with Porous Nickel Electrodes"

Tr. Kurgan. mashinostroit. in-ta (Works of the Kurgan Machine Building Institute), 1971, vyp. 17, pp 70-75 (from RZh-Khimiya, No 6 (II), Jun 72, Abstract No 6L258)

Translation: A study was made of the effect of the temperature on the magnitude of the dimensional $D_a$ for electrolysis of water in a cell with porous electrodes. It was established that there is a region of optimal size $D_a$ which expands with an increase in temperature and is limited on the one hand by the conversion of the anode from the passive state to the active state accompanied by strong corrosion and, on the other hand, by a sharp increase in the nonproductive losses.

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USSR

UDC 621.357.7:669.245'27

BONDARENKO, V. P., RYABUKHIN, A. G.

"X-Ray Diffraction Investigation of Electrolytic Alloys of Nickel with Tungsten"

Tr. Kurgan. mashinostroit. in-ta (Works of the Kurgan Machine Building Institute), 1971, vyp. 17, pp 34-36 (from RZh-Khimiya, No 6 (II), Jun 72, Abstract No 6L313)

Translation: Ni-W alloys (20-5% W) were obtained from ammonium solution. By the data from x-ray diffraction studies it was established that up to 36% of the W of the coating was a supersaturated solid solution; with higher concentrations of W in the coating occurrence of the intermetallide compound $WNi_4$ is assumed.

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USSR

UDC 621.357.7:669.245'27

BONDARENKO, V. P., RYABUKHIN, A. G.

"X-Ray Diffraction Study of the Effect of Some Parameters of Electrolysis on the Composition of Nickel Alloys with Tungsten"

Tr. Kurgan. mashinostroit. in-ta (Works of the Kurgan Machine Building Institute), 1971, vyp. 17, pp 37-41 (from RZh-Khimiya, No 6, (II), Jun 72, Abstract No 6L314)

Translation: Ni-W alloys were obtained from ammonia and ammonium citrate solutions for various currents. An x-ray diffraction study was made of the effect of the solution temperature and the coating composition on the intensity of the 111 Ni line. The maximum intensity corresponded to a temperature of 60°. With a W content of 44%, the line corresponding to reflection from the $Ni_4W$ lattice appeared on the diffraction curves.

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USSR

UDC 621.357.12.035.2

CHUPRINA, V. I., FINKEL'SHTEYN, S. D., KYAUKHIN, A. G., GRISHAYENKOV, B. G., GAVRILOV, B. A.

"Mechanism of the Protective Effect of Lithium during Anode Oxidation of Porous Nickel"

Tr. Kurgan. mashinostroit. in-ta (Works of the Kurgan Machine Building Institute), 1971, vyp. 17, pp 80-84 (from RZh-Khimiya, No 6 (II), Jun 72, Abstract No 6L259)

Translation: A study was made of the mechanism of the protective effect of Li during anode oxidation of cast porous Ni-electrodes under the conditions of electrolysis of water. It is demonstrated that effective inhibition of the process of anode oxidation of the Ni arises from the formation of a thin film containing solid solutions of $LiO_2$, NiO on the Pb electrodes.

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USSR

UDC 621.357.12.035.2

KOROVIN, N. V., GRISHAYENKOV, B. G., PANICH, R. U., GAVRILOV, B. A., RYABUKHIN, A. G.

"Some Problems of the Theory and Results of Studies of the Operation of Porous Electrodes in Devices for the Electrolysis of Aqueous Solutions of Bases"

Tr. Kurgan. mashinostroit. in-ta (Works of the Kurgan Machine Building Institute), 1971, vyp. 17, pp 42-49 (from RZh-Khimiya, No 6 (II), Jun 72, Abstract No 6L257)

Translation: A study was made of some of the operating characteristics of liquid-gas porous electrodes manufactured by the cermet procedure from carbonyl Ni powder (particle size 3-6 μ) and used in devices for electrolysis of aqueous solutions of bases. A method is proposed for determining the gas content of the operating porous electrodes by the flow rate of the electrolyte. The gas content is defined as a function of the structure of the electrode and the polarizing current density. It was demonstrated that biporous electrodes with a porosity of 70-75% with a large pore diameter of ≈60-80 μ and fine pores of 6-8 μ are optimal. By comparing the functions for the activity of the electrode and its gas content as a function of the porosity, the effect of the gas content and the porosity on the magnitude of the effective electrical conductivity of the electrolyte in the pores of the electrode was determined. The possibility of predicting the activity of the Ni electrode is demonstrated.

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USSR

UDC: 519.48

ANDRUNAKIYEVICH, V. A., Academician of the MSSR Academy of Sciences, and RYABUKHIN, Yu. M.

"Torsion in Algebras"

Moscow, Doklady Akademii Nauk SSSR, 11 January 1973, pp 265-268

Abstract: Torsion theory, the theory of ideally hereditary radicals, is now being developed for rings, moduli, and algebras over primarily parallel fields. For the purpose of considering these various examples simultaneously, the authors of the present paper select as basically algebraic a system which is not necessarily associative, over an associative ring with identity. It is proved that the torsions form a complete distributive grid. The authors note that this same result was obtained in a recent paper (R. L. Snider, Pacific J. Math., 40, No 1, 1972, p 207) for the particular case of associative rings. They find that torsions, like radicals, are often specified by an indication of the corresponding radical or semiordinary class, and they develop two theorems which characterize radical and semiordinary classes. These theorems can be extended to cover much more general classes of algebraic systems, including $\Omega$ groups.

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USSR

UDC: 539.1.074

RYABUKHIN, Yu. S.

"The Use of a Standard Ferrosulfate System in Dosimetry of Reactor Radiation"

Dozimetriya i Radiats. Protsessy v Dozimetr. Sistemakh [Dosimetry and Radiation Processes in Dosimetric Systems -- Collection of Works], Tashkent, Fan Press, 1972, pp 185-188 (Translated from Referativnyy Zhurnal Metrologiya i Izmeritel'naya Tekhnika, No 4, 1973, Abstract No 4.32.1502, from the Resume).

Translation: The effective radiation chemical yield of a ferrosulfate system is calculated by numerical integration of the local yield over the path length. The curve of the radiation chemical yield over the length of the proton path as a function of initial energy of the proton agrees well with the available literature data. The values of effective radiation chemical yield were found to be 6.4 and 6.9 ions per 100 eV for the absorbed energy of neutrons in water in the P-2 and B-3 channels. The energy corresponding to half the contribution to the dose is 350 Kev for the P-2 channel and 670 KeV for the B-3 channel. 1 figure, 8 biblio. refs.

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1/2 024 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--THE CURRENT STATE AND PROSPECTS OF NEUTRON AND NEUTRON CAPTURE THERAPY -U-

AUTHOR--RYABUKHIN, YU.S.

COUNTRY OF INFO--USSR

SOURCE--MEDITSINSKAYA RADIOLOGIYA, 1970, VOL 15, NR 5, PP 74-76

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--RADIOTHERAPY, NEUTRON IRRADIATION, RADIATION BIOLOGIC EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/1960 STEP NO--UR/0241/70/015/005/0074/0076

CIRC ACCESSION NO--AP0120603

UNCLASSIFIED

2/2 024 UNCLASSIFIED PROCESSING DATE--23OCT70
CIRC ACCESSION NO--AP0120603
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PAPER CONTAINS PROOF OF THE PROSPECT OF NEUTRON AND NEUTRON CAPTURE THERAPY. ON THE BASIS OF PERTINENT LITERATURE DATA THE AUTHOR DISCUSSES SOME MODERN APPROACHES TO THE SOLUTION OF THESE PROBLEMS, MAINLY ELABORATED IN THE LABORATORY HEADED BY THE AUTHOR. FACILITY: LABORATORIYA RADIOAKTIVNYKH MIKROELEMENTOV INSTITUTA MEDITSINSKOY RADIOLOGII AMN SSSR.

UNCLASSIFIED

USSR UDC 669.721.018.9(088.8)

RYABUKHOV, S. I., KIMSTACH, G. M., PIRYAZEV, V. P., UTKIN, S. Ye., and MAYBORODA, M. V.

"Device for Production of Magnesium Alloy"

USSR Author's Certificate No 268450, Filed 30/12/66, Published 8/09/70 (Translated from Referativnyy Zhrunal-Metallurgiya, No 2, 1971, Abstract No 2 G189 P)

Translation: A device suggested for the production of an Mg alloy includes an induction furnace with a rotating mechanism and a mold. To decrease the expenditure of Mg and improve the properties of the alloy, the device is equipped with a replaceable mold, hermetically placed on the crucible of the induction furnace. A steel plate which is melted during the process of melting the alloy is placed between the induction furnace and the mold in order to decrease the free surface over the melt and eliminate cold surfaces which would condense the Mg from its vapors.

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1/2 022 UNCLASSIFIED PROCESSING DATE--09OCT70

TITLE--EFFECT OF HEAT TREATMENT ON MECHANICAL AND TECHNOLOGICAL PROPERTIES OF 19KHGS STRIP STEEL -U-

AUTHOR-(03)-RYABUSHKIN, YU.P., GREBNEV, N.P., RUSYY, V.D.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, AVTOMOBIL'NAYA PROMYSHLENNOST', NO 4, APR 70, PP 35-37

DATE PUBLISHED----APR70

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

TOPIC TAGS--CHROMIUM STEEL, MANGANESE STEEL, SILICON STEEL, LOW ALLOY STEEL, METAL HEAT TREATMENT, MECHANICAL PROPERTY, MACHINABILITY, CARGO TRUCK/(U)19KHGS LOW ALLOY STEEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1995/1516 STEP NO--UR/0113/70/000/004/0035/0037

CIRC ACCESSION NO--AP0116932

UNCLASSIFIED

2/2 022 UNCLASSIFIED

CIRC ACCESSION NO--AP0116932 PROCESSING DATE--09OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE POSSIBILITY OF INCREASING THE STRENGTH PROPERTIES OF SIDE MEMBERS OF A TRUCK FRAME MADE OF 8MM 19KHGS STRIP STEEL BY HEAT TREATMENT IS INVESTIGATED. VARIOUS TESTS WERE CONDUCTED IN ORDER TO DETERMINE THE EFFECT OF TEMPERING TEMPERATURE (200, 400 AND 600DEGREESC) ON MECHANICAL PROPERTIES OF STEEL. THEIR RESULTS PRESENTED IN GRAPHS SHOW, THAT THE STRENGTH PROPERTIES AFTER HARDENING AND TEMPERING, ARE SUBSTANTIALLY BETTER THAN THOSE OF STANDARD 19KHGS STEEL. THE BEST RESULTS WERE OBTAINED WITH TEMPERING TEMPERATURE OF 500-600DEGREESC. TESTS CONDUCTED ON TRANSVERSE AND LONGITUDINAL SAMPLES OF V TYPE, IN ORDER TO DETERMINE THE TEMPERATURE DEPENDENCE OF THE IMPACT STRENGTH SHOW A GOOD STABILITY OF HEAT TREATED STEEL, WITH RESPECT TO TEMPERATURE, IN THE RANGE OF PLUS 20 TO MINUS 80DEGREESC. THE MACHINABILITY OF HEAT TREATED STEEL WAS CHECKED BY DRILLING. THE RESULTS OF THIS INVESTIGATION SHOW THAT A SUBSTANTIAL IMPROVEMENT OF MECHANICAL PROPERTIES OF 19KHGS STEEL, AND IN PARTICULAR OF THE FRAME SIDE MEMBERS MAY BE OBTAINED BY HEAT TREATMENT.

UNCLASSIFIED

2/2 036 UNCLASSIFIED

CIRC ACCESSION NO--AP0129365 PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN PERSONS ENGAGED IN THE HYDROLYTIC INDUSTRY FOR OVER 5 YEARS, BEING EXPOSED TO AN ELEVATED CONTENT IN THE AIR OF WORK PREMISES OF ALCOHOL HYDROLYZATE, FURFUROL AND HYDROCHLORIC ACID FUMES, FUNCTIONAL CHANGES SUPERVENE IN THE ORGAN OF VISION, FINDING THEIR EXPRESSION IN A CONCENTRIC NARROWING OF THE FIELD OF VISION FOR WHITE, RED AND GREEN WITH RISING COLOUR THRESHOLDS FOR RED AND GREEN. THE THUS DISCOVERED FUNCTIONAL CHANGES APPEAR AS EARLY SIGNS OF CHRONIC IOISONING, THEIR RECOGNITION BEING OF IMPORTANCE FOR INTRODUCING HEALTH MEASURES IN THE INDUSTRY AND IN AVERTING FURTHER PROGRESS OF THE EYE PATHOLOGY. FACILITY: ANGARSKAYA GORODSKAYA BOL'NITSA NO 1, MOSKOVSKIY NAUCHNO-ISSLED. INSITUT GLAZNYKH BOLEZNEY IM. GEL'MGOL'TSA.

UNCLASSIFIED

USSR

UDC 615.31:[547.94+546.22]7.014.45

GRACHEV, S. A., CHAKCHIR, B. A., and RYABYKH, L. D., Military Medical Academy imeni S. M. Kirov, Institute of Nuclear Physics, Academy of Sciences USSR, Leningrad

"Study of the Feasibility of Radiation Sterilization of Pharmaceutical Preparations of Some Alkaloids and Sulfur Containing Substances"

Leningrad, Khimiko-Farmatsevticheskiy Zhurnal, Vol 7, No 5, May 73, pp 47-50

Abstract: The feasibility of radiation sterilization was studied on ephedrine hydrochloride, atropine sulfate, scopolamine hydrobromide, strychnine nitrate, morphine hydrochloride, codeine phosphate, proserine, cysteamine hydrochloride, and unithiol in form of injectable solutions and as powders. It was shown that the sterilizing dose of radioactivity results in a breakdown of the solutions as shown by changes in the pH, color and loss of biological activity. Alkaloid powders exhibited no changes after radiation sterilization. Deaerated solutions were also stable to the radiation but such solutions could not be prepared easily under industrial conditions. Temperature had no effect on the stability of test samples except for very low temperatures.

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USSR

UDC 541.15:615.784

CHAKCHIR, B. A., GRACHEV, S. A., RYABYKH, L. D., Military Medicine Order of Lenin Red Banner Academy Imeni S. M. Kirov, Leningrad Institute of Nuclear Physics, Acad. Sc., UzSSR

"Radiolysis of Tropane Alkaloids in Aqueous Solutions"

Tashkent, Khimiya Prirodnykh Soyedinoniy, No 3, 1972, p 401

Abstract: Yields of the decomposition products obtained from irradiation of alkaloids do not depend on the concentration of the irradiated solution. Increasing the dose of radioactivity leads to a lower yield. The breakdown products obtained from the irradiation of alkaloids show no biological activity. Tropine and tropic acid were identified among the products obtained from irradiated atropine.

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1/2 013 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--USE OF SLIME WATERS AND WATER FROM THE WASHING OF AN OXIDATE DURING THE TREATMENT OF ACID WATERS FROM SYNTHETIC FATTY ACID PRODUCTION -U-

AUTHOR-(04)-BOCHKAREV, YU.A., MAKAROV, S.V., KUDRYASHOV, A.I., RYABYKH, L.N.

COUNTRY OF INFO--USSR

SOURCE--KHIM. PROM. (MOSCOW) 1970, 46(1), 16-17

DATE PUBLISHED--------70

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

TOPIC TAGS--SLIME, WASTE WATER CONVERSION, WATER, FATTY ACID, CHEMICAL SEPARATION, AIR PURIFICATION EQUIPMENT, WATER RECOVERY, ORGANIC ACID

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1063 STEP NO--UR/0064/70/046/001/0016/0017

CIRC ACCESSION NO--AP0124720

UNCLASSIFIED

2/2 013 UNCLASSIFIED

CIRC ACCESSION NO--AP0124720 PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE VARIOUS SLIME AND WASHING WATERS FROM THE MANUFG. OF SYNTHETIC FATTY ACIDS CONTAIN 2.3-12.8PERCENT NONVOLATILE SUBSTANCES; THESE SUBSTANCES ARE SPED. AS A RESIDUE BY HEATING TO 130-40DEGREES UNDER 2-8 ATM. THE PRODUCT CONSISTS OF A MIXT. OF FREE ACIDS, LACTONES, LACTIDES, AND NA, K, FE, AND MN SALTS OF ORG. ACIDS. AFTER SEPN. OF THE RESIDUE, THE WATER MAY BE USED FOR THE WASHING OF INCOMING AIR AND FOR THE RECOVERY OF VOLATILE ORG. ACIDS.

UNCLASSIFIED

USSR

RYABYKH, S. M., MESHKOV, V. A., and ZAKHAROV, Yu. A., Tomsk Polytechnic Institute imeni S. M. Kirov

"Dissociation of $AgN_3$ Crystals by X-Radiation"

Ivanovo, Izvestiya Vysshikh Uchebnykh Zavedeniy, Khimiya i Khimicheskaya Tekhnologiya, Vol XII, No 11, 1970, pp 1,558-1,560

Abstract: The authors studied the radiolysis kinetics of silver nitride and the effect of the presence of $Pb^{2+}$ ions on the radiation stability of $AgN_3$, estimating the degree of dissociation by the amount of radiolytic nitrogen retained by the lattice.

The experimental study was made with $AgN_3$ monocrystals, both pure and with $Pb^{2+}$ admixtures, at temperatures in the 20-150°C range, with dose rate of $4.3 \cdot 10^{16}$ ev/g-sec.

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Radiation Chemistry

USSR

UDC: 541.15

RYABYKH, S. M., and ZAKHAROV, YU. A., Department of Radiation Chemistry, Tomsk Polytechnic Institute imeni S. M. Kirov

"Regularities of Gas Evolution in Radiolysis of Lead Azide"

Ivanovo, Izvestiya Vysshikh Uchebnykh Zavedeniy, Khimiya i Khimicheskaya Tekhnologiya, vol. 13, no. 12, 70, pp 1737-1739

Abstract: This communication presents results of studies of the process of gas evolution in $PbN_6$ radiolysis. The selection of $PbN_6$ as an object of study has been determined by its high sensitivity to radiation effects, simplicity and stability of its radiolysis products as well as its practical importance. The kinetic curves of gas evolution from polycrystalline lead azide subjected to radiation-induce chemical decomposition are shown in a figure. The temperature dependences of gas evolution under radiation and during post-gas evolution are shown in another figure. In the first case the activation energy is 5±1 kcal/mol, while in the second case it is 7±1 kcal. The process of accumulation of radiolytic nitrogen in the crystal lattice proceeds at a constant rate and its activation energy is 1±0.2 kcal. The presence of diffusion processes is suggested. Equations are proposed to describe the gas evolution rate in

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USSR

RYABYKH, S. M., et al., Izvestiya Vysshikh Uchebnykh Zavedeniy, Khimiya i Khimicheskaya Tekhnologiya, Vol. 13, No. 12, 70, pp 1737-1739

radiation time (dN/dt) and the post-gas evolution rate (dN/dt) $dN/dt=GIS1(1-e^{-pt})$, $(dN/dt)_{post}=pN_0e^{-p\tau}$. Here N--nitrogen molecule number; t--radiation time; G--radiation-induced chemical yield; I--absorbed dose power; S--acid surface; l--near-surface layer; $N_0$--nitrogen molecule number in the near-surface layer on termination of radiation; $\tau$--time after radiation. As computed from the equations, the yield probability of the molecule in a unit of time (p) was equal 0.24 $min^{-1}$. The thickness of the near-surface layer was about 0.5 micron at room temperature. Since the environment absorbs some of the total radiolytic gas, the experimental data on gas evolution are not recommended for use to determine the radiation-induced chemical yield.

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USSR UDC 669.293.5.018.27:669.018.2(088.8)

YELISEYEV, S. A., SHPITSBERG, A. L., and RYABYSHEVA, N. D.

"Niobium-Base Alloy"

USSR Authors' Certificate No 263160, Cl. 40 b, 27/00, (C22c), filed 16 Jan 69, published 29 May 70 (from RZh-Metallurgiya, No 12, Dec 70, Abstract No 12 I867 by V. KISHENEVSKIY)

Translation: The Nb-base alloy with elevated resistance to relaxation up to 700° is intended to function as the elastic sensing element of instruments. The alloy contains the following (in %): Mo 2.5-10, Ti 1-4, Zr 1-4, C 0.02-0.4, Cr 0.1-5, and Y 0.01-0.1. In the hardened state (vacuum-hardening from 1500-1700° and aging at 900-1000°) the relaxation of stress on an 0.3-mm strip at 700° in 200 hours, given an initial stress of 44 kg/mm$^2$, is 6-7%. Mechanical properties in the hardened and soft state are given.

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Heat Treatment

USSR

UDC: 669.293

YELISEYEV, S. A., SHPITSBERG, A. L., RYABYSHEVA, N. D., KALACHEV, I. B., and SAVINOV, A. T.

"Alloys With A Niobium Base for Elastic Sensing Elements"

Moscow, Tsvetnyye Metally, No 7, Jul 70, pp 61-62

Abstract: The purpose of the experiments described by this article was to develop alloys which can be used as elastic sensing elements at temperatures above 500-550°, the present-day limit. Taking up where an earlier article left off (Yeliseyev, S. A., et al, Tsvetnyye metally, No. 12, 1968) the authors processed two alloys consisting of various proportions of refractory elements Mo, Zr, Ti, Cr, C, Nb, and N+O. The proportions of the last two were the same in both cases, the proportion of Nb being standard. The alloys were given two smeltings in a vacuum electric-arc furnace with soluble electrodes, and the ingots were given hot and cold deformations for conversion into sheets 0.3 mm thick. Investigating the effect of thermal processing on these sheets, the authors found that they could get effective hardening by a vacuum procedure consisting of tempering in oil and subse-

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USSR

YELISEYEV, S. A., et al., Tsvetnyye Metally, No 7, Jul 70, pp 61-62

quent aging. From their experiments, the authors concluded that the alloys can be toughened, with niobium as the basis, through vacuum processing with tempering in the 1400-1800° C range, and aging at 950-1050° C. Theyfound also that they can develop alloys that can work as elastic sensing elements at temperatures of 800°.

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UNCLASSIFIED

TITLE--EFFECT OF CHROMIUM ALLOYING ON ELECTRON STRUCTURE AND ORDERING IN NI SUB3 MN ALLOY -U-

PROCESSING DATE--09OCT70

AUTHOR-(04)-FADIN, V.P., RYABYSHKINA, G.A., PANIN, V.YE., PRUSHINSKIY, V.V.

COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., FIZ. 1970, 13(2), 44-51

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS, MATERIALS

TOPIC TAGS--ELECTRON STRUCTURE, CHROMIUM ALLOY, NICKEL ALLOY, MANGANESE ALLOY, MODEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1993/1916

STEP NO--UR/0139/70/013/002/0044/0051

CIRC ACCESSION NO--AT0114356

UNCLASSIFIED

2/2 022 UNCLASSIFIED

CIRC ACCESSION NO--AT0114356 PROCESSING DATE--09OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A STUDY OF PARAMETERS WHICH CHARACTERIZE THE STATE OF THE ALLOYS (RESISTANCE R, INTERNAL INDUCTION SATN., B SUBS, ABS. THERMAL EMF. S) AND OF THE NEUTRON DIFFRACTION DIAGRAMS WAS USED TO DET. THE EFFECT OF CR ALLOYING ON THE STRUCTURE OF THE D BAND AND ON THE ORDERING PROCESSES. THE ADDN. OF CR DECREASES THE VALUES OF B SUBS FOR THE DISORDERED ALLOY AS WELL AS THE CHANGE IN B SUBS UPON ORDERING. THUS, THE ANTIFERROMAGNETIC INTERACTION OF THE ATOMS IN THE MN-CR PAIRS IS GREATER THAN IN THE MN-MN PAIRS. THE NEUTRON DIFFRACTION DATA SHOW THAT EVEN FOR SMALL AMTS. OF CR (SIMILAR TO 9 AT PERCENT) A HIGH DEGREE OF LONG RANGE ORDER IS ESTABLISHED IN THE ALLOY. THE VALUES OF R ARE GREATER IN THE ORDERED THAN IN THE DISORDERED ALLOY DUE TO THE INCREASE IN THE D. OF THE ELECTRON STATES IN THE 3D BAND OF THE ORDERED ALLOYS RESULTING IN AN INCREASED PROBABILITY FOR THE SCATTERING OF THE 4S ELECTRONS IN THE 3D BAND. THE VALUE OF S EQUALS F(R) INDICATES THAT THERE IS A CLOSED FERMI SURFACE IN BOTH THE DISORDERED AND ORDERED ALLOYS FOR LOW CR CONCNS. (SMALLER THAN 6 AT. PERCENT) AND AN OPEN FERMI SURFACE FOR HIGHER CONCNS. FOR ALLOYS WITH LOW CR CONCNS. THE MODEL WITH A RIGID 3D BAND IS APPLICABLE. LARGER CONCNS. PERTURB THE STRUCTURE OF THE 3D BAND. FACILITY: SIB. FIZ.-TEKH. INST. IM. KUZNETSOVA, TOMSK, USSR.

UNCLASSIFIED

1/2 026 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--THE HEMOSTATIC EFFECT OF PRESERVED BLOOD AND BK8 SERUM -U-

AUTHOR-(03)-KALCHENKO, I.I., LYS, P.V., RYABYY, P.A.

COUNTRY OF INFO--USSR

SOURCE--KHIRURGIYA, 1970, NR 4, PP 48-54

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--BLOOD COAGULATION, DIGESTIVE SYSTEM DISEASE, HEMORRHAGE, ERYTHROCYTE, BLOOD TRANSFUSION, PRESERVED BLOOD

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1983/1238 STEP NO--UR/0531/70/000/004/0048/0054

CIRC ACCESSION NO--AP0054133

UNCLASSIFIED

2/2 026 UNCLASSIFIED

CIRC ACCESSION NO--AP0054133 PROCESSING DATE--18SEP70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ARTICLE SETS FORTH DATA ON CHANGES OF THE BLOOD COAGULATION SYSTEM IN PATIENTS WITH GASTROINTESTINAL HEMORRHAGES OF ULCEROUS ETIOLOGY, HEMOPHILIA, WERLHOF'S DISEASE, AFTER TRANSFUSION OF PRESERVED BLOOD AND ERYTHROCYTIC SUSPENTION OF DIVERSE STORAGE LIFE, AS WELL AS THE INFLUENCE OF BK8 SERUM ON THE BLOOD COAGULATION. BLOOD COAGULATION INDICES WERE DYNAMICALLY STUDIED AFTER A SINGLE 6NTRODUCTION OF TRANSFUSION MEDIA IN 119 PATIENTS, OF THIS NUMBER IN 96 PATIENTS WITH GASTROINTESTINAL HEMORRHAGE OF ULCEROUS ETIOLOGY, IN 12, WITH WERLHOF, DISEASE AND IN 11, WITH HEMOPHILIA. AN ANALYSIS OF THE RESULTS DERIVED HAS SHOWN THAT TRANSFUSION OF PRESERVED BLOOD WITH A STORAGE LIFE UP TO 2 WEEKS TO PATIENTS WITH GASTROINTESTINAL HEMORRHAGES OF ULCEROUS ETIOLOGY EXERTS A GOOD HEMOSTATIC EFFECT, THE ERITHROCYTIC SUSPENSION IS NOT ENDOWED WITH SUCH AN ACTION. TRANSFUSION OF NATIVE PLASMA AND PRESERVED BLOOD IN A QUANTITY OF 220 TO 250 ML TO PATIENTS WITH HEMOPHILIA AND WERLHOF'S DISEASE IS INADEQUATE FOR THE COMPLETE ELIMINATION OF COAGULATION DISTURBANCES CHARACTERISTIC OF THESE DISEASE. IT BECOMES NECESSARY TO INCREASE THE DOSE OF THESE HEMOSTATIC SUBSTANCES AND SHORTEN THE INTERVALS BETWEEN TRANSFUSIONS. THE TRANSFUSION OF BK8 SERUM CAUSES IN THE RECIPIENT NOTICABLE BLOOD COAGULATION DISTURBANCES IN ALL THREE PHASES. INASMUCH AS NORMALIZATION OF THE BLOOD COAGULATION IN MOST CASES TAKES PLACE THREE DAYS AFTER TRANSFUSION OF THE SUBSTITUTE, ONE SHOULD TAKE DUE CONSIDERATION OF THIS FACT DURING TRANSFUSIONS TO PATIENTS SUBJECT TO OPERATIVE TREATMENT.

UNCLASSIFIED

USSR

UDC: 621.382.032.27

SANDULOVA, A. V., GONCHAROV, V. P., SYDIR, B. I., and RYBAK, V. M.

"Ohmic Contacts for GaSb Monocrystals"

Moscow, Pribory i tekhnika eksperimenta, No 4, July-August, 1972, pp 216-218

Abstract: This paper describes a practical method for welding ohmic contacts to n and p type monocrystals of GaSb. The device used in this method is a little stand with a self-contained oven which keeps the flux, under the surface of which the welding is done, molten. To avoid strong local heating, which leads to the formation of acceptor impurities and the consequent reduction in quality of the contact, the crystal is given preliminary heating to 300° C. The contacts used for the p-type crystal were gold wires measuring 30 microns in diameter. A diagram and description of the stand is given together with such details as the method of reducing the contact resistance. A photograph of the contact welds is reproduced, and the volt-ampere characteristic of the ohmic contact, showing its perfect linearity, is plotted. The authors are associated with the Lvov Polytechnical Institute.
1/1

USSR

UDC: 533.932

KULIK, V. Ya., KULIK, P. P., RYABYY, V. A., Moscow Aviation Institute imeni S. Ordzhonikidze

"Diffusion Cross Section of Scattering of Electrons by Cesium Atoms"

Moscow, Teplofizika Vysokikh Temperatur, Vol 10, No 4, Jul/Aug 72, pp 715-723

Abstract: The electrical conductivity of a weakly ionized cesium plasma is measured to determine the effective electron—cesium atom diffusion cross section at temperatures between roughly 1000 and 2000°K where there is the greatest uncertainty as to the diffusion cross section of cesium. An attempt is made to systematize published theoretical and experimental data on the electron—cesium atom diffusion cross section by analysis within the framework of the Chapman-Eskog kinetic theory. Satisfactory mutual agreement is observed between the most creditable experimental data and the predictions of scattering theory. The authors thank E. M. Karule, R. K. Peterkop and other staff members of the Department of Theoretical Physics of the Institute of Physics, Academy of Sciences of the Latvian SSR, and also L. A. Vaynshteyn for constructive criticism on the problems dealt with in the paper.

1/1

USSR

UDC 534.647

MOSKALIK, L. M., and RYADCHIKOV, V. Ye.

"A Low-Frequency Vibration-Measuring Apparatus"

Moscow, Vibratsion. Tekhnika (Vibration Engineering) 1972, pp 118-122 (from Referativnyy Zhurnal -- Metrologiya i Izmeritel'naya Tekhnika, No 1, 1973, Abstract No 1.32.441)

Translation: A 12-channel low-frequency vibration-measuring device, type 12EVA-5 has been developed for investigations of construction stability, which is intended for measuring and registering vibratory motion with amplitudes of 0.01-25mm with a frequency of 1.5-200cps at 12 points simultaneously. Like the 4EVA-4M apparatus developed earlier, it contains strain accelerometers and vacuum-tube amplifiers with a double integrated signal. The structural scheme of the vibration-measuring apparatus and its basic technical data are given. A miniature accelerometer, type V-6, with a silicon resistance strain-gauge glued on the flat, ring-shaped spring, is used in the 12EVA-5 apparatus. Due to the spring construction and the use of semiconductor resistance strain gauges the monitor has a low overall size and weight and a high sensitivity in comparison to minitors types V-3 and V-4. (2 illustrations)
1/1

USSR

UDC 621.762.001

GRISHINA, A. I., NOVIKOVA, L. V., RYADINSKAYA, I. M.

"Study of the Fine Structure of Specimens of Nickel Powder Produced by Impact Loading"

Metallovedeniye i Prochnost' Materialov, T. 3 [Metal Science and the Strength of Materials, Vol 3 -- Collection of Works], Volgograd, 1971, pp 309-314, (Translated from Referativnyy Zhurnal, Metallurgiya, No 5, 1972, Abstract No 5 G471 by S. Krivonosova).

Translation: An x-ray study is presented of specimens produced by impact loading. The level of strain hardening of various zones decreases upon transition from the surface to the center of the specimen. With impact loading, the temperature of the central portion of the specimen is increased significantly, leading to melting of the powder and full relief of strain hardening (increasing temperature resulting from intensity of plastic deformation of the powder). 4 Figures; 1 Biblio. Ref.

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Acc. Nr: AP0051918

Ref. Code: UR0219

PRIMARY SOURCE: Byulleten' Eksperimental'noy Biologii i Meditsiny, 1970, Vol 69, Nr 2, PP 66-68

# CHANGED ACTIVITY OF SOME HYDROLYTIC ENZYMES IN THE TISSUE CULTURE OF BONE MARROW MACROPHAGES DURING INTRACELLULAR PARASITIZING OF SALMONELLA TYPHOSA

*F. L. Legtes, Yu. Ya. Tendetnik, O. Ye. Ryadneva, I. P. Kudinkina*

Central Research Institute of Epidemiology, Moscow

In protracted tests the fermentative reaction of reticulo-endothelial cells inoculated with typhoid bacilli was studied in a bone marrow tissue culture. Penetration of the causative agent into the cytoplasma of macrophages and other cells in the initial period of intracellular parasitism of the bacteria (1—2 days) was accompanied by the raised activity of lysosome enzymes — acid phosphatase and catepsine C, with subsequent fall of their activity and destruction of the lysosomes. The activity of cytoplasmatic enzymes — alisterase, aminopeptidase, alkaline phosphatase — was down already in the early phase of phagocytosis. In infected cells obtained in immune animals the activity of lysosome enzymes continued longer than in the cells taken in normal animals.

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REEL/FRAME
19820401

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USSR

UDC 621.373.826:550.3

RYADOV, V. Ya. and FURASHOV, N. I.

"Investigating the Absorption in Atmospheric Windows Transparent to Waves of 0.3-0.5 mm"

Moscow, V sb. X Vses. konf. po rasprostr. radiovoln. Tezisy dokl. (Tenth All-Union Conference on the Propagation of Radio Waves; Report Theses--collection of works) "Nauka," 1972, pp 48-51 (from RZh--Radiotekhnika, No 10, 1972, Abstract No 10D358)

Translation: Results are reported of atmospheric absorption measurements in windows transparent to $\lambda \simeq 0.32$, 0.35, 0.45, and 0.49 mm, under field conditions, through the method of humidity variation. The presence of singularities of absorption close to $1/\lambda = 22$ cm$^{-1}$ is established. The theoretical computations show that such a singularity may belong either to dimer spectra or to a rotating monomer spectrum in an excited oscillatory state. Two illustrations, one table, bibliography of 10, A. L.

1/1

USSR

RYADOV, V. Ya. and FURASHOV, N. I. UDC 621.317.1

"Measuring the Absorption Coefficient of Atmospheric Water Vapor in the Region of Resonance for the Line $\lambda = 0.398$ mm"

Moscow, V sb. X Vses. konf. po rasprostr. radiovoln. Tezisy dokl. (Tenth All-Union Conference on the Propagation of Radio Waves; Report Theses--collection of works) "Nauka," 1972, pp 57-60 (from RZh--Radiotekhnika, No 10, 1972, Abstract No 10A472)

Translation: The equipment and method of measuring the absorption coefficient of water vapor in the region of the 0.398 mm line corresponding to the rotatory transition $2_2 - 2_0$ are described. The width and intensity of this line were measured directly from its contour. During the measurement process, the absolute humidity of the air varied in the interval 2-15 g/m$^3$. A. K.

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USSR

UDC: 621.371.166.2

RYADOV, V. Ya. and FURASHOV, N. I.

"Investigating the Absorption Spectrum of Radio Waves by Atmospheric Water Vapor in the 1.15-1.5 mm Range"

Gor'kiy, Izvestiya VUZ--Radiofizika, No 10, 1972, pp 1469-1474

Abstract: The portion of the spectrum ranging from 1.0 to 1.5 mm corresponds to a highly transparent atmospheric window, and its investigation is therefore important to transmissions at this wavelength as well as to perfecting the theory of microwave radiation in the atmosphere. This paper gives the results of a detailed quantitative investigation into the absorption spectrum of water vapor in the air in the 1.15-1.55 mm range. The measurements were made under field conditions by the method of varying humidity over a transmission distance of 2.94 km through the use of a reflected beam; the length of the direct and reflected beams were about 1.5 km with an angle of about 0.5° between them. A flat metal mirror with a diameter of 700 mm and capable of rotation was responsible for the reflection, and the plane of the direct and reflected beams was about 2-3 meters above the ground level. The radiation source was a backward-wave tube with an output power of 100-300 mW.

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USSR

RYADOV, V. Ya., et al, Izvestiya VUZ--Radiofizika, No 10, 1972, pp 1469-1474

Curves of the absorption as a function of the wavelength show its values to be about twice as high as those computed for $H_2O$ monomers, and show also that the experimentally obtained distribution of the water vapor absorption with respect to the wavelength offers no evidence of the peculiarities alleged by earlier investigators. A curve for the absorption coefficient of the water vapor as a function of the water vapor concentration for the center atmospheric window wavelength of 1.4 mm is also plotted. The authors thank P. P. Prygunov, A. I. Khvostova, A. V. Povarov, and V. F. Vasil'yev for their assistance with the measurements, and to M. V. Zinicheva for her computations on the computer as well as to S. A. Zhevakin for his comments on the measurement results.

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USSR

RYADOV, V. Ya. and FURASHOV, N. I. UDC: 621.371.166.2

"Investigating the Radio Wave Absorption in the Atmospheric Window Transparent to $\lambda = 0.73$ mm"

Gor'kiy, Izvestiya VUZ--Radiotekhnika, No 10, 1972, pp 1475-1485

Abstract: A description is given of absorption measurements of radio waves in the range of 0.71 to 0.76 mm, the first time such measurements have been made in this range with a source of monochromatic radiation and over a large distance. The purpose of these experiments was to verify and improve the precision of measurement data already available for the transparency of the atmosphere for wavelengths of 0.73 mm. The transmissions were made with a backward wave tube of 2-5 mW output power. The antenna consisted of a parabolic mirror with a 900 mm diameter and an elliptical reflector 100 mm in diameter, the connection between the BWT oscillator and the antenna being realized by a waveguide of 1.2X2.4 $mm^2$ cross section and a pyramidal horn. The horn output was modulated at a frequency of 10 Hz. A diagram is given together with curves comparing theoretical data with those obtained

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USSR

RYADOV, V. Ya., et al, Izvestiya VUZ--Radiotekhnika, No 10, 1972, pp 1475-1485

by the present experiments. The authors thank A. V. Povarov and N. I. Shashkin for their help with the measurements, M. B. Zinicheva for her calculations on the electronic computer, and S. A. Zhevakin for his comments.

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USSR

UDC 576.851.55.086

RYAGIN, S. T., and MYKYTYUK, P. V., Belaya Tserkov' Agricultural Institute, Belaya Tserkov'

"Application of the Immunofluorescence Serological Method for the Detection and Identification of the Botulism Agent"

Kiev, Mikrobiologicheskiy Zhurnal, Vol 33, No 5, Sep/Oct 71, pp 613-618

Abstract: The immunofluorescence method was applied on an experimental basis for the detection and identification of Cl. botulinum of types A, B, C, D, and E. The indirect procedure of fluorescent antibodies proposed by Weller and Coons was followed. Dry antirabbit fluorescent serum; antibotulinum agglutinating rabbit sera of the five types; and smears taken from the organs of infected guinea pigs were used. Kitt-Tarozzi medium was used to culture the pathogen to obtain smear prints. By applying the immunofluorescence method, all types of Cl. botulinum could be detected in pathological material taken from the guinea pigs, but only types C, D, and E could be identified, while identification of types A and B required toxin neutralization with antitoxic sera. Use of the procedure described resulted in a considerable saving of time as compared with older methods.

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USSR

UDC 619:616-073.537:576.851.49

RYAGIN, S. T., Professor, and MIKITYUK, P. V., Aspirant, Belotserkovskiy Agricultural Institute

"Identification of Clostridium botulinum by the Immuno Fluorescent Antibody Method"

Moscow, Veterinariya, No 12, 1971, pp 92-93

Abstract: An attempt was made to identify all types of Cl. botulinum by using the indirect fluorescent antibody method of Weller and Coombs.

Dry antirabbit fluorescent serum anti-botulinus sera types A, B, C, D, and E, with comparatively high agglutinating characteristics were used.

Cl. botulinum specimens were labeled with fluorescent anti-species serum in dilation of 1:32, while control specimens were prepared in a variety of ways, for example with immune serum that did not contain any antibodies to the investigated antigens.

Specific luminescence, either bright green or medium green, was observed with all Cl. botulinum types studied. Luminescence was absent in control specimens.

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USSR

RYAGIN, S. T., and MIKITYUK, P. V., Veterinariya, No 12, 1971, pp 92-93

The fluorescent antibody method can be used for tentative identification of all types of Cl. botulinum in microscope preparations, but an additional neutralization reaction is necessary for identification of types A and B.

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172 009 UNCLASSIFIED

TITLE--EVALUATION OF NONAQUEOUS SOLVENT AUTOPROTOLYSIS CONSTANTS -U-

PROCESSING DATE--27NOV70

AUTHOR-(04)-KRESHKOV, A.P., ALDAROVA, N.SH., SMOLOVA, N.T., RYAGUZOV, A.I.

COUNTRY OF INFO--USSR

SOURCE--ZH. FIZ. KHIM. 1970, 44(4), 1126-7

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ALIPHATIC ALCOHOL, GLYCOL, KETONE, DICARBOXYLIC ACID, SOLVENT ACTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3007/0795

STEP NO--UR/0076/70/044/004/1126/1127

CIRC ACCESSION NO--AP0136229

UNCLASSIFIED

2/2 009 UNCLASSIFIED

CIRC ACCESSION NO--AP0136229 PROCESSING DATE--27NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTOPROTOLYSIS CONSTS., PK SUBS, WERE ESTD. FOR A NO. OF ALIPHATIC ALCS. (MEOH TO OCTANOL), GLYCOLS, AND KETONES FROM THE LINEAR RELATIONSHIP PK SUBS VS. PK SUBA, WHERE PK SUBA WAS THE ACID CONST. OF A DICARBOXYLIC ACID IN A GIVEN SOLVENT GROUP, AND FROM THE EXPRESSION PK SUBS EQUALS E SUBS -K SUBES, WHERE E SUBS IS THE RELATIVE ACIDITY SCALE AND K SUBES THE COEFF. OF THE RELATIVE ACIDITY SCALE. THE K SUBES VALUES FOR THE SOLVENTS DECREASED IN THE ORDER KETONES GREATER THAN ALCS. GREATER THAN GLYCOLS GREATER THAN H SUB2 O. FACILITY: MOSK. KHIM.-TEKHNOL. INST. IM. MENDELEEVA, MOSCOW, USSR.

UNCLASSIFIED

UNCLASSIFIED

017

PROCESSING DATE--30OCT70

TITLE--EFFECT OF ACETONITRILE AND WATER ON THE DIFFERENTIATING ACTION OF ACETONE WITH RESPECT TO PHTHALIC ACID ISOMERS -U-

AUTHOR-(04)-KRESHKOV, A.P., GURETSKIY, I.YA., SMOLOVA, N.T., RYAGUZOV, A.I.

CCUNTRY OF INFO--USSR

SOURCE--ZH. ANAL. KHIM. 1970, 25(3), 451-7

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ACETONITRILE, ACETONE, PHTHALIC ACID, ISOMER, CALCULATION, ELECTROLYTE, POTENTIOMETRIC TITRATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/2056

STEP NO--UR/0075/70/025/003/0451/0457

CIRC ACCESSICN NO--AP0125643

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--30OCT70

2/2 017

CIRC ACCESSION NO--AP0125643

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN EQUATION FOR CALCG. THE PK OF ELECTROLYTES IS SUGGESTED WHICH CAN BE APPLIED ONLY IF THE POTENTIOMETRIC TITRN. IS ACCOMPANIED BY PPT. FORMATION. BY MEANS OF THIS EQUATION, THE PK OF O, M, AND P,PHTHALIC ACIDS WERE CALCD. THE EFFECTS OF H SUB2 O AND MECN ON THE DIFFERENTIATING ACTION OF ME SUB2 CO WITH RESPECT TO PHTHALIC ACID ISOMERS WERE STUDIED. H SUB2 DECREASES THE ACTION AND MECN HAS NO ESSENTIAL EFFECT ON THE DIFFERENTIATING ACTION OF ME SUB2 CO. THIS WAS TAKEN INTO ACCOUNT DURING THE DEVELOPMENT OF THE METHOD FOR ANALYZING MIXTS. OF PHTHALIC ACID ISOMERS IN A MIXED ME SUB2 CO,MECN,H SUB2 O SOLVENT. FACILITY: MOSCOW CHEM.-TECHNOL. INST., MOSCOW, USSR.

UNCLASSIFIED

USSR UDC: 669.71.472(088.8)

RYAGUZOV, V. N.

"Aluminum Electrolyzers"

USSR Author's Certificate Number 351926, Filed 11/08/70, Published 27/09/72 (Translated from Referativnyy Zhurnal Metallurgiya, No 8, 1973, Abstract No 8G177).

Translation: An aluminum electrolyzer is suggested with a continuous, self-roasting carbon anode, with apertures for liberation of gas from beneath its base. In order to organize liberation of gasses from beneath the base of the anode and to simplify the design of the electrolyzer, the anode carries rows of steel nonconsumable pipe, the lower ends of which are placed over the electrolyte, while the upper ends are connected to the hollow counterforce beams of the anode shell. To decrease the forces of adhesion between the pipes and the sintered portion of the anode body, they are made with outer diameter decreasing toward the bottom and equipped with twisting devices at the top. Metal consumable sheets are installed between the pipes. To decrease the resistivity of the anode body, the metal consumable sheets are electrically connected to the anode conductor. Nonconsumable steel cross pieces are connected between the pipes along the longitudinal and transverse axes of the

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202720012-3"

USSR

Ryaguzov, V. N., USSR Author's Certificate Number 351926, Filed 11/08/70, Published 27/09/72.

anode, with apertures in the upper portion of the cross pieces to allow circulation of the liquid anode mass. In order to decrease the forces of adhesion of the nonconsumable steel cross pieces to the sintered portion of the anode body, the cross pieces are made with smaller diameter at the bottom. 2 figures.

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Public Health, Hygiene and Sanitation

USSR

UDC 614.73:[621.311.25:621.039

ARKHANGEL'SKAYA, I. G., TSUKANOV, I. F., VERBITSKIY, B. V., and RYAKHOVSKIY, A. V., Institute of Biophysics, Moscow

"Characteristics of Radioactive Aerosols in the Atmosphere of Premises of the Novo-Voronezh Atomic Electric Power Station"

Moscow, Gigiyena Truda i Professional'nyye Zabolevaniya, No 3, 1970, pp 41-43

Translation: One of the possible factors of the effect of the industrial environment on personnel employed at the atomic electric power station (APS) is the contamination of premises with radioactive aerosols. We determined the concentration of these aerosols in air in the principal industrial premises during various periods of work at the Novo-Voronezh APS, studying the isotope composition of the aerosols, and the doses emitted by them in critical organs of service personnel. To determine the aerosol contents, air samples were collected on filters made of FPP fabric, followed by radiometric determination on the DP-100 apparatus, with the S1-25 counter. The amount of aerosols was calculated by the known method. About 500 samples were collected.

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USSR

ARKHANGEL'SKAYA, I. G., et al, Gigiyena Truda i Professional'nyye Zabolyevaniya, No 3, Mar 70, pp 41-43

Table 1

Concentration of long lived β-active aerosols in the atmosphere of the APS premises

| | Concentration ($n \cdot 10^{-13}$ curie/l) | |
|---|---|---|
| | Energy conditions | Stopped reactor |
| Continuously used premises ..... | 2-7 | 1.2-4.2 |
| Periodically used premises ..... | 4-5.2 | 1.2-2.3 |
| Unused premises ..... | | 1.2-15 |

The concentrations and isotope composition of aerosols varied. None of the premises tested showed aerosol concentrations exceeding the acceptable air limits for work premises during the test period.

Table 1 shows the content of long lived β-active aerosols in the air of production premises.

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ARKHANGEL'SKAYA, I. G., et al, Gigiyena Truda i Professional'nyye Zabolevaniya, No 3, 1970, pp 41-43

Analysis of the decomposition curves of aerosol samples showed that in 95-99% of all cases, they consisted of relatively short-lived isotopes with $T_{eff}$= 20-25 min. Only 1-5% of the activity corresponded to the fraction of the long-lived component (the filters were read after 24 hrs of storage).

The isotope composition of aerosols was determined radiochemically and by means of $\gamma$-spectrometry. It was determined that the relatively short-lived aerosols consist primarily of $Rb^{88}$ and $Cs^{137}$ (up to 70%). In addition, this short-lived fraction contains rare earth elements (up to 17%) and barium group elements (about 7%). Thus, the dominant input into the activity of the short-lived component is due to $Rb^{88}$ -- a product of the breakdown of "fission" gas $Kr^{88}$.

The long-lived fraction of aerosols consits mainly of elements of induced activity of the heat carriers such as: $Fe^{59}$, $Zr^{95}$, $Zr^{97}$ and $Co^{60}$ (V. M. Kozlov and co-authors).

The levels due to the activity of individual isotopes during normal utilization of the APS, with consideration for repairs, were calculated (N. G. Gusyev) and

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ARKHANGEL'SKAYA, I. G., et al, Gigiyena Truda i Professional'nyye Zabolevaniya, No 3, 1970, pp 41-43

reported in units of maximum permissible load (MPL) per organ in question. According to data from the International Commission on Radiological Protection, the exposure period in all calculations was considered to be one hr. All reports on dose levels are this time period. Lungs were selected as the critical organ for dose calculation of relatively short-lived components.

The average annual concentration of short-lived aerosols reaches $10^{-11}$ curie/l, and the average annual concentration of the long-lived ones -- $5 \cdot 10^{-13}$ curie/l. Tables 2 and 3 show the concentrations and dose levels in critical organs due to the relatively short-lived and long-lived components of the aerosols, respectively. It follows from these data that the dose levels in critical organs were not high, amounting to hundredths of MPL. Due to the fact that personnel servicing the station use individual protective masks during work to safeguard the breathing organs, the actual levels should be even lower.

Thus the concentrations of aerosols and the doses of internal irradiation of service personnel were for all practical purposes considerably lower than the maximum permissible level during various work periods at the station.

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USSR

ARKHANGEL'SKAYA, I. G., et al, Gigiyena Truda i Professional'nyye Zabolevaniya, No 3, 1970, pp 41-43

Table 2

Concentration (curie/l) of individual short-lived aerosol components and their dose in critical organs.

| Isotope | Concentration | Dose load (in units of maximum permissible load) | Critical organ |
|---|---|---|---|
| $Rb^{88}$ | $3.9 \cdot 10^{-12}$ | $3.9 \cdot 10^{-3}$ | Lungs |
| $Rb^{89}$ | $5 \cdot 10^{-15}$ | $6.3 \cdot 10^{-8}$ | Lungs |
| | | $1.6 \cdot 10^{-4}$ | Bones |
| $Fe^{131}$ | $1 \cdot 10^{-13}$ | $3.4 \cdot 10^{-6}$ | Lungs |
| | | $1.1 \cdot 10^{-2}$ | Thyroid gland |
| $Cs^{138}$ | $3.3 \cdot 10^{-12}$ | $3.3 \cdot 10^{-3}$ | Lungs |
| $Ba^{141}$ | $3 \cdot 10^{-13}$ | $6.6 \cdot 10^{-5}$ | Lungs |
| $Ba^{142}$ | $5.6 \cdot 10^{-13}$ | $1.9 \cdot 10^{-4}$ | Lungs |
| RE elements | $1.7 \cdot 10^{-12}$ | $3.6 \cdot 10^{-5}$ | Lungs |

Note. Rubidium and caesium MPC is $10^{-9}$ curie/l; MPC of other elements is not available.

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USSR

ARKHANGEL'SKAYA, I. G., et al, Gigiyena Truda i Professional'nyye Zabolevaniya, No 3, 1970, pp 41-43

Table 3

Concentration (curie/l) of individual long-lived aerosol components and their accumulation in critical organs.

| Isotope | Concnetration | MPC | Dose accumulation (in MPC units) | Critical organ |
|---|---|---|---|---|
| $Cr^{51}$ | $1 \cdot 10^{-14}$ | $2 \cdot 10^{-9}$ | $5 \cdot 10^{-6}$ | Lungs |
| $Fe^{59}$ | $7 \cdot 10^{-14}$ | $3 \cdot 10^{-11}$ | $2.4 \cdot 10^{-3}$ | Spleen |
| $Co^{60}$ | $5 \cdot 10^{-15}$ | $9 \cdot 10^{-12}$ | $5.6 \cdot 10^{-4}$ | Lungs |
| $Sr^{89}$ | $5 \cdot 10^{-15}$ | $3 \cdot 10^{-11}$ | $1.7 \cdot 10^{-4}$ | Bones |
| $Y^{91}$ | $1 \cdot 10^{-14}$ | $8.10^{-9}$ | $1.3 \cdot 10^{-6}$ | Lungs |
| $Zr^{95}$ | $1.1 \cdot 10^{-13}$ | $1 \cdot 10^{-9}$ | $1.1 \cdot 10^{-4}$ | Lungs |
| $Zr^{97}$ | $5 \cdot 10^{-15}$ | $9 \cdot 10^{-11}$ | $5.6 \cdot 10^{-5}$ | Lungs |
| $Ru^{106}$ | $5 \cdot 10^{-15}$ | $6 \cdot 10^{-12}$ | $8.4 \cdot 10^{-4}$ | Lungs |
| $Cs^{137}$ | $1 \cdot 10^{-14}$ | $1 \cdot 10^{-11}$ | $1.0 \cdot 10^{-3}$ | Lungs |
| $La^{140}$ | $5 \cdot 10^{-15}$ | $1 \cdot 10^{-10}$ | $5 \cdot 10^{-5}$ | Gastro-intestinal tract |
| $Ce^{144}$ | $1 \cdot 10^{-14}$ | $6 \cdot 10^{-12}$ | $1.7 \cdot 10^{-3}$ | Lungs |

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USSR

ARKHANGEL'SKAYA, I. G., et al, Gigiyena Truda i Professional'nyye Zabolevaniya, No 3, 1970, pp 41-43

The levels of contamination of the atmosphere in production premises may be lowered substantially by improving the quality of cleaning of heat carriers from radioactive products, by improving the hermetic sealing of the units, so that the dose of internal irradiation for service personnel at APS may be brought to the minimum.

LITERATURE

GUSYEV, N. G., Maximum permissible levels of ionizing radiation. M., 1961.

GUSYEV, N. G., (Edit) et al, Dosimetric and radiometric methods. M., 1966.

USSR UDC 575.111:575.24:576.858

RYAPIS, I. V., KOROL', V. V. SUCHKOV, Yu. G., and DOMARADSKIY, I. V.,
Rostov-na-Donu Scientific Research Antiplague Institute

"The Use of Auxotrophic Mutants to Study the Possibility of Mutual Conversion of Cysteine and Methionine in Pasteurella pestis"

Moscow, Genetika, No 9, 1971, pp 155-159

Abstract: Treatment of P. pestis with N-nitroso-N-methylurea yielded 139 auxotrophic mutants, of which 35 required sulfur-containing amino acids - 28 $cys^-$, 6 $met^-$, and 1 $met^-(cys^-)$. After one year of storage, 25 mutants reverted to the original phenotype, 13 being cysteine-dependent. There was a high frequency of occurrence of revertants in 4 of 11-cysteine-dependent mutants. All the $met^-$ mutants remained auxotrophs and only rarely reverted to the original phenotype. The mutants were indistinguishable from the parent strain in cultural, morphological, and biochemical properties except for one of the cysteine-dependent mutants, which did not form typical colonies on Hottinger's agar and fermented mannose, xylose, arabinose, and galactose slowly. Study of the capacity of the mutants to grow on media with cysteine and methionine precursors showed that they differ in nutritional requirements. The cysteine-cystathionine-homocystine-methionine reaction is apparently catalyzed by the prototrophic variant of P. pestis in both directions.

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AA0044795 R UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent,

2/70

243706 THE PHASE OF SIGNALS CONTROL CIRCUIT has oscillator (1) synchronizes the frequency of oscillators (2) and (3). Part of the power of oscillator (3), through phase shifter (4), goes to detector (5) which receives also reference signal from oscillator (2). On the output of phase detector appears the signal of error which, through compensation element (6), passes to unit (7) which adjusts reactance of oscillating circuit of oscillator (3) in such a way that the difference in phases on outputs of oscillators (2) and (3)

will be equal to the shift of phase produced by phase shifter (4).

17.11.67 as 1198059/26-9. N.G.ANDROSYUK & A.A. RYANOLOV (8.10.69.) Bul 17/14.5.69. Class 21e. Int.Cl.G 01 r.

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AUTHORS: Androsyuk, N. G.; Ryapolov, A. A.

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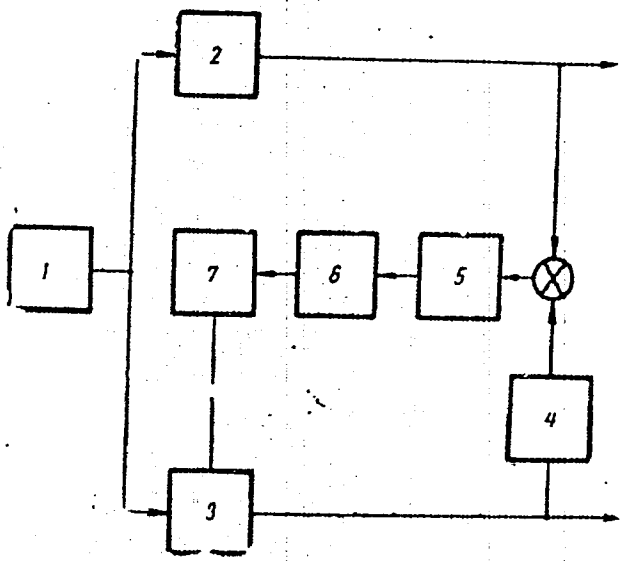
AA0044795

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19771622

USSR

UDC 531.76/77

RYAPOLOV, V. A., KRYUKOV, L. V., KULIKOV, S. V., CHISTYAKOV, B. V., PERFIL'YEV, L. M., and OREL-KHOMYAKOV, G. A.

"A Device for Indicating the Direction of Rotation of a Stepping Motor"

USSR Author's Certificate No 363922 kl G 01 p 13/00, filed 17 Oct 70, published 21 Mar 73 (from RZh Avtomatika Telemekhanika i Vychislitel'naya Tekhnika, No 11, Nov 73, abstract No 11 A 387P)

Translation: A device is proposed for indicating the direction of rotation of a stepping motor, containing a differentiating element and valves. To simplify and improve the reliability of the apparatus, one of the valve inputs is connected to each phase winding of the step motor; the other input is connected through the differentiating element to the following phase winding of the stepping motor, while the outputs of the valves are combined and connected to the output terminal. One illustration.

1/1

UDC 62-531.4

USSR

YEFREMENKO, V.T., ZHURAKOVSKIY, T.D., MOROZOV, L.G., PERFIL'EV, L.M., RYAPOLOV, V.A., SVIRIDOV, G.S., TAREYEVA, V.N.

"Positional Tracking Drive"

USSR Author's Certificate No 262659, Filed 14/10/68, Published 19/05/70, (Translated from Referativnyy Zhurnal Avtomatika, Telemekhanika i Vychislitel'naya Takhnika, No 12, 1970, Abstract No 12 A274P by T.R.)

Translation: A positional tracking pneumatic drive is patented, consisting of a power cylinder divided by a piston into two working cavities connected to the high-pressure channel through calibrated chokes. The power cylinder shaft contains a fluid distributor consisting of a cylindrical plunger with spiral grooves connected to the low-pressure chamber and through apertures in the shaft of the power cylinder with its working cavities. The distributor is rotated by the controller through the required angle. As the distributor rotates, a pressure difference is developed in the power cylinder cavities, acting on the piston until the holes in the shaft are moved to a symmetrical position relative to the distributor slots. The rotation of the sensor is converted to forward movement of the power cylinder shaft by the drive system. One figure.

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USSR

UDC 621.373.531.1(088.8)

KULIKOV, S. V., RYAPOLOV, V. A., KRYUKOV, L. V., CHISTYAKOV, B. V.

"Multivibrator with a Synchronization Circuit"

USSR Author's Certificate No 251614, Filed 27 Jun 68, Published 3 Feb 70 (from RZh-Radiotekhnika, No 9, Sep 70, Abstract No 9G255P)

Translation: This author's certificate introduces a multivibrator with a synchronization circuit containing basic and auxiliary transistors, switching and starting transistors, a stabilitron and the synchronization circuit resistors. In order to decrease the delay of the synchronized pulses, the base of one of the basic transistors is connected to the collector of the switching transistor of the synchronization circuit. The base of the latter is connected via a resistor to the collector of the starting transistor and via a semiconductor diode to the collector of the second transistor of the multivibrator the base of which is connected via the stabilitron and the resistor to a common point of the semiconductor diode and the collector of the starting transistor of the synchronization circuit.

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1/2 018 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--THE SYNTHESIS OF THE OPTIMAL CONTROL SYSTEMS OF THE POWER AND THE ENERGETIC PLANTS FOR SPACE VEHICLES USING NUCLEAR ENERGY -U-

AUTHOR-(05)-BUDNER, V.A., BUGROVSKY, V.V., KANIOVSKY, S.S., MARTIANOVA, T.S., RYASANOV, J.A.

COUNTRY OF INFO--USSR, FRANCE

SOURCE--INTERNATIONAL FEDERATION OF AUTOMATIC CONTROL, SYMPOSIUM ON AUTOMATIC CONTROL, 3RD, TOULOUSE, FRANCE, MAR. 2-6, 1970, PAPER. 33 P.

DATE PUBLISHED-------70

SUBJECT AREAS--SPACE TECHNOLOGY, NAVIGATION

TOPIC TAGS--AUTOMATIC CONTROL SYSTEM, SPACECRAFT NUCLEAR PROPULSION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/0005 STEP NO--FR/0000/70/000/000/0033/0033

CIRC ACCESSION NO--AT0117305

UNCLASSIFIED

2/2 018 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AT0117305

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ANALYSIS OF THE CHARACTERISTICS AND PRINCIPLES OF A COMPLEX, AUTOMATIC CONTROL SYSTEM USED FOR NUCLEAR PROPULSION OF SPACE VEHICLES. SPECIAL ATTENTION IS GIVEN TO A SINGLE, COMPLEX AUTOMATIC CONTROL SYSTEM WITH A VARIABLE STRUCTURE, USING OPERATIONAL REGIMES AND AN INBOARD DISCRETE CONTROL SETUP. AS AN EXAMPLE, THE REALIZATION OF A SYSTEM FOR STABILIZING THE OPERATIONAL REGIME OF A THERMIONIC GENERATOR IS PRESENTED.

UNCLASSIFIED

Radiation Chemistry

USSR

UDC 546.98'221.09:542.973.2:546.791.6

SOKOLOVA, I. D., SAVEL'YEVA, V. I., GROMOV, B. V., RYASHENTSEVA, M. A., and MINACHEV, Kh. M.

"Utilization of Palladium Sulfide as a Catalyst During the Reduction of the Uranyl Ion"

Leningrad, Zhurnal Prikladnoy Khimii, Vol 45, Vyp 9, 1972, pp 1938-1941

Abstract: Paladium sulfide acts as a catalyst in the reduction of U(VI) to U(IV) by formaldehyde without using radiation. Approximately 75% of the U is reduced in a $SO_4^=$ solution, 50% in an $NO_3^-$, and 35% in a $Cl^-$ soln. Addition of HF increases the yield to 100% and 90% for $SO_4^=$ and $NO_3^-$, respectively. The difference in yield is due to complexing of U(IV) by the anions; the more effectively free U(IV) is complexed, e.g. removed from solution, the further the reduction will proceed to completion. The reduction is strongly temperature-dependent. At about 60°C the yield jumps sharply from about 5% to about 75% then rapidly levels off. Unlike the metallic platinum and palladium catalysts, which rapidly lose their activity, the palladium sulfide surface does not become poisoned and may be used many times without regeneration.

1/1

SMOROTIN, A. I. R'YASHKIN, N. Ya.

"Solution of a System of Linear Algebraic Equations by the Method of Optimal Exclusion"

Algoritmy i Algoritmich. Yazyki [Algorithms and Algorithmic Languages -- Collection of Works], No 5, Moscow Acad. Sci. USSR Computer Center, 1971, pp 15-17, (Translated from Referativnyy Zhurnal, Kibernetika, No 3, 1972, Abstract No 3 V544 by the author's).

Translation: A description is presented of an ALGOL-60 procedure, a realization of an algorithm for solution of a system of linear algebraic equations by the method of optimal exclusion. In contrast to other solution systems, this method does not require simultaneous storage of the entire matrix of coefficients of the system in main memory. The algorithm is designed for solution of systems of linear algebraic equations of high order.

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USSR

BIRSHTEYN, A. A., RYASIK, E. N.

"Information Compression"

Tr. Leningr. Inzh.-Ekon. In-ta [Works of Leningrad Institute of Engineering and Economics], 1972, No 92, pp 33-41 (Translated from Referativnyy Zhurnal Kibernetika, No 4, 1973, Abstract No 4V649, by V. Mikheyev).

Translation: A method is suggested for compression of information discretely representing a function of many variables by elimination of repetition of identical numerical values of functions corresponding to different combinations of arguments. The essence of the method consists in creation of an ordered file of particular values of functions and arguments, in which the series of particular values of arguments are composed of a series of non-repeating particular values of functions, while the address of each particular value of a function is equal to the sum of the ordinal numbers of the arguments corresponding to it. This is achieved by establishing the regularity between the series of arguments and functions causing a change in any argument by one step to result in a change in the corresponding particular value of the function by one step. Depending on the type of error, absolute or relative, fixed in the function, and the type of the function, the method has two

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USSR

Birshteyn, A. A., Ryasik, E. N., Tr. Leningr. Inzh.-Ekon. In-ta, 1972, No 92, pp 33-41.

versions: the first calls for compression of a file of information discretely representing a function of many variables of the form a) $Y = \pm kA \pm \phi B \pm \ldots \pm \gamma D$ or b) $Y = \pm A^{K} B P \pm C^{Z}$, defined with a fixed absolute error; the second calls for compression of a file of information discretely representing a function of many variables of the form $Y = A^{X} B^{K} \ldots D^{Z}$, defined with fixed relative error.

Acc. Nr. AP0048369 Abstracting Service: INTERNAT. AEROSPACE ABST Ref. Code: 5-70 2R0293

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A70-24318 # Model for the motion control in an arbitrary medium (Model' upravleniia dvizheniem v sluchainoi srede). V. A. Riasin. *Kosmicheskie Issledovanila*, vol. 8, Jan.-Feb. 1970, p. 146, 147. In Russian.

Analysis of a model for the reentry of a spacecraft into the atmosphere. Steady Gaussian process with a mathematical expectancy equal unity is assumed to behave according to the Markov process. An expression for the optimal control of the spacecraft is presented. Z.W.

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USSR

UDC 669.15.018.44

NOVICHKOV, P. V., POSTNIKOV, V. S., and RYASKOV, S. A.

"A Study of Ways of Increasing the Low-Temperature Relaxation Stability of Steels of the Austenitic Class"

V sb. Strukturn. i razmern. stabiliz. met. i detaley mashin (Structural and Dimensional Stabilization of Metals and Machine Parts -- Collection of Works), Moscow, 1970, pp 82-91 (from RZh-Metallurgiya, No 3, Mar 71, Abstract No 3I616 by V. Olenicheva)

Translation: A study was made of the relaxation stability and low-temperature creep of Kh12N2T2 (EP452) and Kh12N22T3MR (EI696M) austenitic steels with intermetallide strengthening which were subjected to thermomechanical treatment (TMT), as well as austenitic steel with carbide strengthening Kh18N10T after deformation and aging. The elastic aftereffect method was used to obtain numerical criteria characterizing relaxation stability. The optimum relaxation stability was shown by the following treatment regimes: for steel EP452 -- two-time TMT (hardening +1.5% deformation X 10 hr X 650° + 1.5% deformation X 10 hr X 650°; for steel EI696 M -- three-time TMT (hardening +1.5% deformation X 10 hr X 650° +1.5% deformation X 10 hr X 650° +1.0% deformation X 10 hr x 650°); for steel Kh18N10T -- strain aging (hardening + 51% deformation +600° X 1 hr). Four illustrations. Bibliography with 26 titles. Five tables.
1/1

USSR

UDC: 539.14.144

KRYUKOVA, L. N., RYASNYY, G. K., and SOROKIN, A. A., Scientific-Research Institute of Nuclear Physics, Moscow State University imeni M. V. Lomonosov

"Studying the Disturbed Angular Correlation of $^{181}Ta$ in the Hf-Ni Alloy"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, Vol 37, No 9, 1973, pp 1818-1821

Abstract: The authors measure disturbed angular gamma-gamma-correlations using a $^{181}Hf$ source in the form of a 0.3 at. % wt. Ni alloy made by the arc melting method. A value of $H_{eff}=91 \pm 2$ conversion electrons is obtained from the differential measurements for the 133-482 kev cascade on Ta nuclei. This is in agreement with known data. The parameters of the experimental curve show that approximately 45 percent of the Hf atoms of the given source are at matrix lattice points. This is close to that value which was achieved by sources which were produced by the implantation method. It is obvious that significantly smaller (or null) fields are acting on the nuclei of atoms not located at lattice points. In further studies, the $HfFe_2$ or $(Hf_xZr_{1-x})Fe_2$ type intermetallides should be used.

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USSR

POZHELA, YU. K., RYAUKA, V. L., et al (Institute of Semiconductor Physics, Lithuanian Academy of Sciences)

"Dispersion of Magnetoplasma Waves in $Bi_{0.92}Sb_{0.08}$ Under Hydrostatic Pressure"

Vilnius, Litovskiy Fizicheskiy Sbornik, No 4, 1973, pp 535-543

Abstract: The dispersion of magnetoplasma waves (MPW) in single crystalline $Bi_{0.92}Sb_{0.08}$ under hydrostatic pressures P = 0 and P = 7 kbar was investigated. The external magnetizing field $B_z$ parallel to the wave vector k was oriented along one of the crystalline axes. Experiments were carried out by means of the size resonance technique at 77°K. Propagation of MPW at P = 0 is associated with electrons of strongly anisotropic ellipsoids in the extremum $L_a$. Holes of the extremum $T_{45}$ participate in MPW dispersion only when $B_z \parallel k$ is oriented along trigonal axis $C_3$. From experimental results the concentration of electrons ($n = 8 \cdot 10^{22} m^{-3}$) participating in the MPW propagation was determined, and values of electron cyclotron mobilities $\mu^e_{c_3} = 5 m^2 \cdot V^{-1} \cdot sec^{-1}$ and $\mu^e_{c_2} = 45\ m^2 \cdot V^{-1} \cdot sec^{-1}$ were calculated for the cases

USSR

POSHELA, YU. K., et al., Litovskiy Fizicheskiy Sbornik, No 4, 1973, pp 535-543

$B_z \parallel C_3$ and $B_z \parallel C_2$ respectively. At P = 7 kbar a decrease of approximately 60% in the electron concentration was observed. This decrease is associated with transfer of holes from the extremumTT-$_{45}$ into the extremum L under the influence of pressure. Under a hydrostatic pressure of 7 kbar an increase of electron cyclotron mobilities (40% in the case of $B_z \parallel C_3$) and their anisotropy were observed.

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AA0043361

UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent,

2/70

243963 DECODER comprising pulse transformers (1) connected through a diode matrix with working loads (2), controlled by the address register triggers (3). The pulse transformers secondary windings (4), connected in pairs in series opposing and with voltage doubling, are connected in series with the diode matrix wires and with a common stabilising resistor (5). Each pulse transformer primary windings (6) are connected with the outputs (7) of the corresponding address register trigger. The synchronising shaper element (8) converts a potential into a pulse.

Each transformer is controlled by one trigger and a corresponding pair of active shaper elements (8), which convert by means of clock pulses the potential code recorded in the triggers into a pulse code.

21.12.62 as 809328/25-8 (10.6.69)
Bul 17/14.5.69. Class 42m4. Int.Cl.G 06f.

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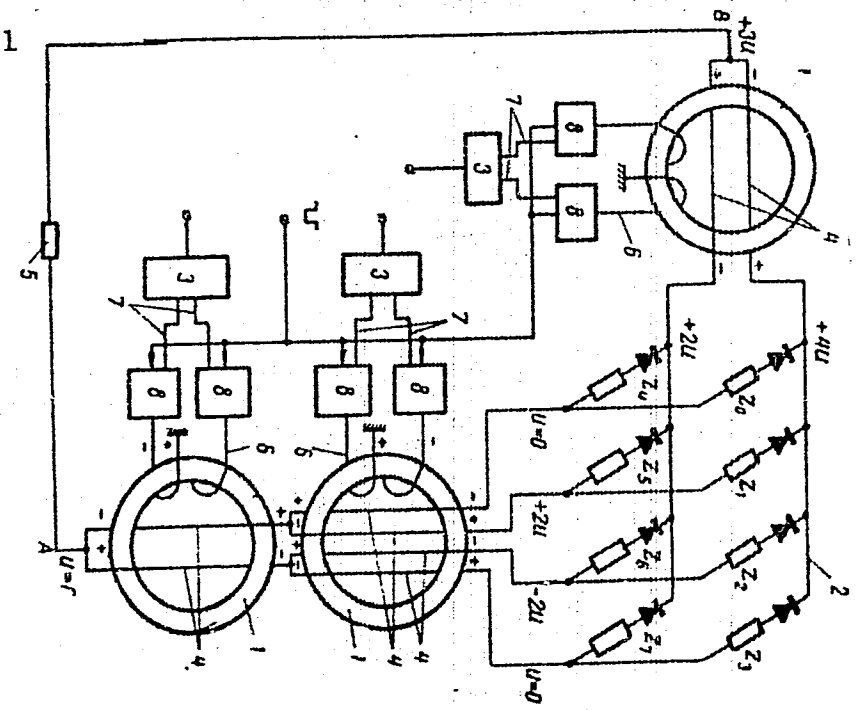
19761613

AA0043361



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19761614

USSR UDC [537.226+537.311.33]:[537+535]

POZHELA, YU. K., RYAUKA, V. L., and TOLUTIS, R. B.

"Dimensional Resonances of Helicon Waves in Axially Compressed n-Ge"

Lit. fiz. sb. (Collection of Lithuanian Works on Physics), 1971, 11, No 2, pp 253-261 (summaries in Lithuanian and English) (from RZh-Fizika, No 10, Oct 71, Abstract No 10YE785 by authors)

Translation: An investigation was made of the effect of axial compression P on the frequency of dimensional resonances $\omega'$ of helicon waves in n-Se. Curves of $\omega'/B$ as a function of the induction of magnetic field B were calculated for axial compression P in the [110] and [1$\bar{1}$0] crystallographic directions when k//B//[110], as well as P//[111] when k//B//[111]. It was established that the form of curves $\omega'/B=f(B)$ and the absolute values of $\omega'/B$ with variation of P reflect the redistribution of current carriers among groups with different mobility. Dependences $\omega'/B=\gamma r(P)$ were experimentally obtained with the above-mentioned orientations P, B, and k. It was found that the quality factor of the helicon resonator depends on the magnitude and direction of P relative to the crystallographic axes. The experimental results confirm the theoretical calculations.

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1/2 017 UNCLASSIFIED PROCESSING DATE--11DEC70

TITLE--USE OF ALTERNATING CURRENT DURING THE PREPARATION OF METAL SALTS. II. THE A.C. ELECTROCHEMICAL DISSOLUTION OF NICKEL IN HYDROCHLORIC ACID

AUTHOR-(03)-RYAZANOV, A.I., PETRENKO, S.D., DOMANOVA, YE.G.

COUNTRY OF INFO--USSR

SOURCE--ZH. PRIKL. KHIM. (LENINGRAD) 1970, 43(4), 836-42

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--INORGANIC SALT, CHEMICAL SYNTHESIS, ELECTRIC FIELD EFFECT, HYDROCHLORIC ACID, SOLUBILITY, CHEMICAL REACTION RATE, OXALIC ACID, NICKEL CHLORIDE, ALTERNATING CURRENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3004/0967 STEP NO--UR/0080/70/043/004/0836/0842

CIRC ACCESSION NO--AP0131552

UNCLASSIFIED

2/2 017 UNCLASSIFIED PROCESSING DATE--11DEC70

CIRC ACCESSION NO--AP0131552

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE USE OF A.C. (50 HZ) FOR DISSOLVING NI (MARK N,0 OR N,1) IN HCL WAS STUDIED AS A FUNCTION OF ACID CONCN. AND C. D. THE OPTIMUM ACID CONCN. WAS 4-6N. THE SOL. OF NICL SUB2 DECREASED AS THE ACID CONCN. INCREASED. OXALIC ACID INCREASED THE RATE OF DISSOLN. (AT HCL CONCN. OF 4-6N) BY CONVERTING NICL SUB2 TO NI OXALATE AND HCL. DURING 1 COMPLETE A.C. CYCLE, 4 ELECTRODE PROCESSES CAN OCCUR, 2 ANODIC AND 2 CATHODIC. FOR DISSOLN. TO OCCUR, THE EFFICIENCY OF THE ANODIC DISSOLN. PROCESS MUST BE GREATER THAN THE EFFICIENCY OF THE CATHODIC DEPOSITION PROCESS.

UNCLASSIFIED

1/2 007 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--ACTIVITY COEFFICIENTS OF SEPARATE IONS -U-

AUTHOR--RYAZANOV, M.A.

COUNTRY OF INFO--USSR

SOURCE--ZH. FIZ. KHIM, 1970, 44(2), 312-16

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--ACTIVITY COEFFICIENT, HYDRATION, ION THEORY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1987/0865 STEP NO--UR/0076/70/044/002/0312/0316

CIRC ACCESSION NO--AP0104301

UNCLASSIFIED

2/2 007 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0104301

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ON THE BASIS OF THE INTRODUCED CONCEPT OF ION SIMILARITY, A NEW SYSTEM OF RELATIVE ACTIVITY COEFFS. OF SEP. IONS IS EXPLAINED. THE EXPRESSION FOR THE CRITERION OF ION SIMILARITY IS DERIVED. THE DERIVED CRITERION IS A QUANT. CHARACTERISTIC OF THE CAPABILITY OF THE ION TO UNDERGO POS. OR NEG. HYDRATION.

UNCLASSIFIED

USSR

UDC: 621.385.002.54(088.8)

RYAZANOV, V. G., ROMANYUK, R. F., KHEYFETS, A. D., IKONNIKOV, Yu. N.

"A Wobbulator for Vacuum Resonators in Discriminators"

USSR Author's Certificate No 256093, filed 10 Apr 67, published 3 Apr 70 (from RZh-Radiotekhnika, No 11, Nov 70, Abstract No 11D100 P)

Translation: This Author's Certificate introduces a wobbulator for vacuum resonators in discriminators. The device contains a rotating plate located in the face end of the resonator. To improve reliability and simplify operation, the rotating plate is separated from the vacuum resonator by a hermetically sealed cap, and is equipped with rotators which operate mechanically, are transparent to radio waves, and are connected to the resonator. Resumé.

1/1

USSR

UDC 577-391

RYAZANOV, V. M., SHIRYAYEV, V. G., PARKHOMENKO, I. M., and KUDRYASHOV, Yu. B., Biophysics Department, Moscow State University

"Role of Phospholipids in Radiation Lesions of Mammals Differing in Radiosensitivity"

Moscow, Vestnik Moskovskogo Universiteta, No 3, 1973, pp 36-41

Abstract: Lipid metabolism and antioxidant activity of phospholipids were studied in various organs of the highly radioresistant Mongolian gerbil Meriones unguiculatus ($LD_{50/30}$ 1180 rad) and much more radiosensitive guinea pig Cavia porcella ($LD_{50/30}$ 190 rad). Both groups of animals were exposed once to whole-body irradiation at 700 r. Irradiation caused a significant decrease in the phospholipid content of the brain, liver, and small intestine within 2 hours. The decrease persisted or intensified thereafter in the guinea pigs but gave way to an increase in the gerbils. Irradiation also altered the composition of the animals' total lipids, increasing the percentage of phospholipids in the gerbils but decreasing it markedly per unit of tissue weight in the guinea pigs. Antioxidant activity of the phospholipids decreased sharply in the guinea pigs but increased in the gerbils. The high degree of resistance to ionizing radiation exhibited by

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202720012-3"

USSR

RYAZANOV, V. M., et al., Vestnik Moskovskogo Universiteta, No 3, 1973, pp 36-41

gerbils is attributed to the increased phospholipid content of the liver after exposure and intensified antioxidant activity of the phospholipids. These reactions prevent "intestinal death," which results from the use of 400 to 500 rad in guinea pigs (compared to a dose of 1500 rad or more in gerbils).

Radiobiology

USSR UDC 577-391

RYAZANOV, V. M., and STAKANOV, V. A., Chair of Biophysics, Moscow State University

"The Role of Phospholipids in Irradiation Injury of Mammals with Different Degrees of Radiosensitivity"

Moscow, Vestnik Moskovskogo Universiteta, Seriya 6, Biologiya, Pochvovedeniye, No 6, Nov/Dec 71, pp 107-108

Abstract: Prior to their exposure to a 700 rad dose of radiation, white rats and guinea pigs were found to have the same overall percentages of phospholipids in the tissues of their livers, brains, and small intestines, although the phospholipid content of total lipids was higher in guinea pigs than in rats. Following irradiation, this index declined steadily in guinea pigs, but in white rats it increased, remained constant for 4-5 days, then dropped. As for the overall phsopholipid content, it showed a significant decrease in both species. This corroborates a known fact that oxidizing chain reactions occur after exposure to radiation and result in the formation of lipid radiotoxins and the breakdown of natural phospholipid antioxidants. This fact also helps to explain the decrease in the antioxidizing activity of phospholipids which was observed in both species.

USSR

UDC 539.3

AL'TSHULER, L. V., RYAZANOV, V. T., SPERANSKAYA, M. P., Moscow

"Influence of Heavy Impurities on Detonation Mode of Condensed Explosives"

Zhurnal Prikladnoy Mekhaniki i Tekhnicheskoy Fiziki, No 1, 1972, pp 122-125.

Abstract: The influence of heavy metal additives on the detonation modes of condensed explosives was studied. A significant reduction in detonation pressure was noted. This effect is explained by the development of modes with increased detonation velocities, not satisfying the Chapman-Jouguet condition. An additional reduction in pressures was noted for compositions with a high content of metal, caused by the cooling influence of the impurities. The experimental results are compared with calculations performed in the additive approximation. The author's concentrate on the influence of the addition of heavy metal additives to the parameters of detonation waves, ignoring the gas dynamics of the detonation products.

USSR UDC 62.50(082)

RYAZANOV, Yu. A. [Editor]

"Automatic Regulation and Control"

Avtomaticheskoye Regulirovaniye i Upravleniye [English Version Above], 1971, 102 pages, (Translated from Referativnyy Zhurnal Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 11, 1971, Abstract No 11 A2 K by I. Sh).

Translation: This collection contains 21 articles: specifics of the operation of a tracking system (S) modeling a stand with a mechanical elastic coupling; accuracy of linear pulse S; estimation of the accuracy of a third-order linear pulse S; method of investigation of control processes of dynamic S; regularization of one unstable problem of optimal filtration; approximation methods of calculation of spectral density for one type of random vibration; investigation of one nonlinear control S by the method of conjugate functions; investigation of the stability of a dynamic S with elastically attached masses; selection of the parameters of a dynamic S with variable parameters; specifics of the operation of the electromechnical convertor of a modeling stand; estimation of dispersion of a regulated coordinate with random, stable perturbations; investigation of the dynamic characteristics of pipes; investigation of one measuring S; specifics of remote recording of results of weighing; the use of logic elements for conversion of

USSR UDC 62.50(082)

RYAZANOV, Yu. A., Avtomaticheskoye Regulirovaniye i Upravleniye, 1971, 102 pages.

scale division values; investigation of the dynamic characteristics of a hydraulic actuating mechanism; specifics of the operation of a combined link with controllable time constant; design of the structure of photoelectric sighting devices; investigation of the power effect of a stream on a valve in fluidics and pneumatic measuring devices; specifics of determination of forces acting on a valve in a pneumatic device in the 0-2 μ clearance range; selection of tolerances and fittings of smooth couplings in machines operating under conditions of the far north.

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USSR UDC: 621.372.822:621.317.023(088.8)

SHVAROV, I. K., IVANCHINOV-MARINSKIY, N. N., RYAZANOV, Yu. A.

"An Installation for Adiabatic Compression"

USSR Author's Certificate No 277889, filed 5 Jun 69, published 17 Nov 70 (from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6A309 P)

Translation: This Author's Certificate introduces an installation for adiabatic compression which contains a high-pressure tank and a tube. As a distinguishing feature of the patent, the unit is designed to provide matching of a microwave channel to the tube without disrupting its working mode. A knife-like string is installed along the diameter of the tube, ending on one side in a coaxial short-circuiting piston, and on the other in a coaxial plug. In the tube between the high-pressure tank and the knife-like string is an outside jumper which passes the working gas.

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UDC 613.63:632.95:613.155.3

USSR

RYAZANOVA, R. A., DRUZHININA, V. A., NEVSTRUYEVA, V. V., Candidates of Medical Sciences, Moscow Scientific Research Institute of Hygiene imeni Erisman

"Experimental Data Providing a Basis for the Maximum Permissible Concentration of Zineb in the Air in Work Areas"

Moscow, Gigyena i Sanitariya, No 8, 1972, pp 42-45

Abstract: A study was made of the biological effect of zineb following entry of it into the body through the respiratory system and unprotected skin. Both single and chronic exposures were considered. The studies were performed on 100 mice, 200 rats, 20 rabbits and 4 guinea pigs. In a chronic experiment zineb in the concentrations of 200 and 20 mg/m$^3$ caused a change in functional state of the organism of the experimental animal: a reduction in body weight, a reduction in number of leukocytes, content of total and protein SH-groups, a tendency toward a reduction in cholinesterase activity and an increase in the summation of the threshold index by comparison with the initial (background) and data from the control group of animals. An inverse relation was dected between the accumulation of radioactive phosphorus ($P_{32}$) in the tissues and the zineb concentration. In a study of the estral cycle of female rats, zineb in a concentration of 20 mg/m$^3$ caused prolonging of the diestrus phase

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USSR

RYAZANOVA, R. A., et al., Gigiyena i Sanitariya, No 8, 1972, pp 42-45

and atypical alternation of stages. Mating of the females with experimental males took place against a background of intoxication which did not exclude manifestation of both embryotropic and gonadotropic effects. Sterility of males and resorption of fetuses by the females resulted from zineb exposure. There were marked effects on embryo and postnatal weight of baby rats when the mother had been subjected to 20 $mg/m^3$ of zineb during pregnancy.

Thus, zineb concentrations of 200 and 20 $mg/m^3$ are considered toxic, and a concentration of 5 $mg/m^3$ is considered threshold. In view of the effect of the compound on gonads and embryogenesis, a maximum permissible concentration of 0.5 $mg/m^3$ of zineb in the air of work areas is recommended.

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USSR UDC 614.7:615.285.7:632.95]:613.2

SHITSKOVA, A. P., YELIZAROVA, O. N., and RYAZANOVA, R. A., Moscow Scientific Research Institute of Hygiene imeni F. F. Erisman

"The Pesticide Cycle in the Environment and Problems of Food Hygiene"

Moscow, Gigiyena i Sanitariya, No 11, 1970, pp 7-10

Abstract: Practical experience with pesticides shows that soil suffers the severest contamination. Organochlorine compounds can be detected in soil long after their initial application, for example, heptachlor and hexachloran are detected after 9-11 years. Trace amounts were found in the lower soil horizons 9-18 months after their initial application, pointing to the possible migration of pesticides via rainwater from upper layers to deeper layers, and their possible entrainment in ground water which is a source of potable water supplies. Soil composition and structure are important in the accumulation of toxic chemicals in rhizomes. For example, the greatest amount of lindane is detected in carrots grown on sandy loam, and the least -- in carrots grown on chernozem soil, though five times more toxic chemicals were applied in the latter case. From our data, potatoes grown in different soils acquired disagreeable organoleptic properties when carbathion was applied in several cases and adversely affected experimental animals.

USSR

SHITSKOVA, A. P., et al, Gigiyena i Sanitariya, No 11, 1970, pp 7-10

More toxic preparations are in use in treating forest tracts, meadows, and industrial crops, and the amounts applied are being increased. This leads to contamination of forest flora and fauna. To illustrate, after a forest was treated with lindane, the residual amount of the pesticide in grass and leaf samples was 2 mg/kg; in 30-60 days this decreased to 0.2 mg/kg.

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ELECTRICAL ENGINEERING

Machinery

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UDC: 621.373.42

USSR

KONSTANTINOV, V. A., MOROZOV, A. V., RYAZANOVA, R. V.

"An Electromechanical Ultralow-Frequency Generator"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 6, 1970, p 45, patent No 262213, filed 28 Oct 68

Abstract: This Author's Certificate introduces an electromechanical ultralow-frequency generator which contains an electric drive with controllable speed of rotation, a selsyn pair in the transformer connection mode, speed reducers and a demodulator. As a distinguishing feature of the patent, the range of frequencies which can be generated is extended, design is simplified and the reliability of the device is improved by connecting the electric motor to the rotors of both selsyns through separate speed reducers with different gear ratios. The synchronization windings of the selsyns are interconnected through an additional switch.

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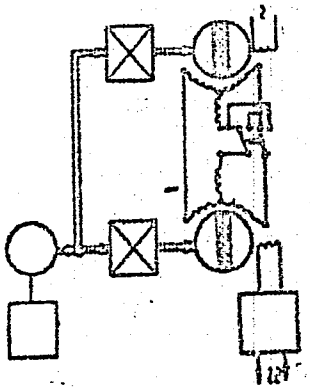
USSR

KONSTANTINOV, V. A., et al, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 6, 1970, p 45, patent No 262213, filed 28 Oct 68



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RYAZANTSEV, A.A.

Xi-5. OBTAINING COMPENSATED MATERIALS IN THE MERCURY TELLURIDE AND CADMIUM TELLURIDE SYSTEM

[Article by N. V. Vladimirov, Ye. V. Kalashnikova, V. L. Korkov, G. A. Kuzmina, V. N. Matveev, A. A. Ryazantsev, N. A. Solnikolenova, L. N. Khabarov; Novosibirsk, III Simpozium po Fotoelektricheskim Yavleniyam v Poluprovodnikakh Kristallov i Priborakh, Russian, 12-17 June 1972, p 135]

In this paper a study is made of the possibility of obtaining materials with maximum compensation of the characteristic electrically active states.

The large crystalline and monocrystalline bars were obtained by the Bridgeman method. Determination of the composition along the bar permitted some refinement of the position of the solidus line on the diagram of state.

A study was made of the compensation of electrically active centers by alloying in a melt and by annealing the crystals in the vapors of the components. The properties of the materials obtained were determined both by optical and by galvano-magnetic measurements.

There is a detailed discussion of the problem of determining the composition of solid solutions by different methods.

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RYAZANTSEV, A.A.

SPS 5938
6-73

XI-8. T-X PROJECTION OF THE PHASE DIAGRAM OF THE InAs-CdTe SYSTEM

[Article by Ye. A. Dalgurova, G. I. Dashinova, A. A. Ryazantsev, E. P. Khabrov, Irkutsk, Novosibirsk, III Simpozium po Protsessam Rosta i Sinteza Poluprovodnikovykh Kristallov i Plenok, Russian, 12-17 June 1972, p 15-]

The method of differential thermal analysis was used to construct the T-X projection of the diagram of state of the InAs-CdTe system. The projection of the simple eutectic type. The eutectic point corresponds to a composition of 33 ± 2 mol.% CdTe at 874 ± 2°C. The solid solution region reaches 30 mol% CdTe at the eutectic temperature. By using the liquidus curve and bars drawn by the Bridgeman method, it is possible to determine the position of the solidus in the system. The composition of the solid phase along the solidus curve for the given liquidus temperature. In addition, the solidus points were determined for temperatures of 796, 826 and 845°C with the help of x-ray phase analysis. The results of the analysis coincide within the limits of the experiment.

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