"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202210017-4

USSR

NETYUKHAYLO, A. P., et al, Tr. Khar'kov. otd. vod. kh-va prompredpriyatiy VNII VODGYeO, 1971, No. 9, pp 33-47

density number. Values of C_{cr} are given that determine the boundaries of five different forms (from laminar to turbulent) of the flow in the boundary layer of the separation of liquids of different density. The characteristics of the exchange of momentum through the interface are given on the basis of analysis of graphs of the distribution of total tangential stresses over the thickness of the boundary layer of the separation for the most characteristic forms of the flow in this layer. Certain statements are made concerning the determination of the coefficient of exchange of momentum k as a function of the Richardson number R^*, and the relationship $R^* = sC^{m_1}$ is proposed for calculating this number, where s and m_1 are empirical coefficients. 16 ref. V. B. Dul'nev.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202210017-4

1/2 021 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--GENERALIZED CONCEPTION OF FRACTIONAL PARENTAGE AND THE (ALPHA D) (PRIME3 HE T) DUALITY IN THE PRIME6 LI NUCLEUS -U-

AUTHOR-(03)-KUROYUMOV, I.V., NEUDATCHIN, V.G., SMIRNOV, YU.F.

COUNTRY OF INFO--USSR

SOURCE--PHYS. LETTERS (NETHERLANDS), VOL.3 18. NO.7. P.426-8 (30 MARCH 1970)

DATE PUBLISHED--30MAR70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--HELIUM, MODEL, NUCLEON INTERACTION, LITHIUM, MATHEMATIC EXPRESSION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1992/0566 STEP NO--NE/0000/70/031/007/0426/0428

CIRC ACCESSION NO--AP0111759

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202210017-4"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202210017-4

2/2 021 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0111759

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE FRACTIONAL PARENTAGE CONCEPT IS GENERALIZED FOR THE CASE OF THE NUCLEON CLUSTER MODEL. IN TERMS OF THIS, MODEL CALCULATIONS ARE MADE FOR THE PRIME6 LI NUCLEUS OF THE WAVE FUNCTIONS PHI OF MUTUAL CLUSTER MOTION ALPHA D AND PRIME3 HE T. FOURIER IMAGES OF WHICH ARE MEASURED IN THE QUASIELASTIC KNOCK OUT REACTIONS. ALSO OBTAINED ARE THE REDUCED WIDTHS THETA PRIME2 IN THE CHANNELS ALPHA D AND PRIME3 HE T. THE PRIME3 HE T CHANNEL IS ONLY SLIGHTLY DEPRESSED. THETA SUB1 PRIME2 SIMILAR TO OR EQUIVALENT TO 0.5. THE WAVE FUNCTION PHI (PRIME3 HE T) IS APPRECIABLY MORE LOCALIZED THAN THE FUNCTION PHI (ALPHA D), WHICH IS REFLECTED IN THE FORM FACTORS. FACILITY: MOSCOW STATE UNIV., USSR.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202210017-4

1/2 027 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--DWBA (DISTORTED WAVE BORN APPROXIMATION) CALCULATION OF THE AMPLITUDES OF RECTANGLE DIAGRAMS IN DIRECT NUCLEAR REACTIONS -U-

AUTHOR-(02)-MAGZUMOV, E.ZH., NEUDACHIN, V.G.

COUNTRY OF INFO--USSR

SOURCE--PHYS. LETT. B 1970, 31(3), 106-8

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--APPROXIMATION METHOD, PROTON INTERACTION, BERYLLIUM ISOTOPE, EXCITED NUCLEUS, ANGULAR DISTRIBUTION, WAVE FUNCTION, DIFFERENTIAL CROSS SECTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1985/1466 STEP NO--NE/0000/70/031/003/0106/0108

CIRC ACCESSION NO--AP0101552

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202210017-4"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202210017-4

2/2 027 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0101552

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DIFFERENTIAL CROSS SECTIONS (D SIGMA-D OMEGA) WERE CALCD. FOR PRIME9 BE(P, P PRIME) PRIME9 BE (E SUBP EQUALS 3, 7, 12, 20 MEV) AND PRIME10 B(T, P) PRIME12 B (E SUBT EQUALS 5, 10, 15, 20 MEV), DESCRIBED WITH THE RECTANGLE DIAGRAM (N., ET AL., 1968). THE DWBA WITH SURFACE INTERACTION (N. K. GLENDENNING, 1957) IS USED. THE FORM OF THE ANGULAR DISTRIBUTION IS INVARIANT AS COMPARED TO THE CASE OF THE PLANE WAVES. THE ABS. VALUES OOF THE D SIGMA-D OMEGA DECREASE RAPIDLY WITH INCREASING E SUBP(T). THE ABS. VALUES OF THE D SIGMA-D OMEGA CAN BE OBTAINED WITHIN THE PROPER ORDER OF MAGNITUDE; IN PARTICULAR, THE VALUE FOR THE (T, P) REACTION REALIZED THROUGH THE RECTANGLE DIAGRAM FOR E SUBT EQUALS 5-10 MEV IS ONLY SLIGHTLY SMALLER THAN THE USUAL D SUBMA-D OMEGA OF THE POLE (T, P) REACTIONS (1-5 MB-STERADIAN). FACILITY: INST. NUCL. PHYS., MOSCOW STATE UNIV., MOSCOW, USSR.

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202210017-4"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202210017-4

1/2 013 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--DIFFERENTIAL CROSS SECTIONS FOR QUADRANGULAR GRAPHS IN SOME DIRECT NUCLEAR REACTIONS -U-

AUTHOR-(03)-MAGZUMOV, E.ZH., NEUDACHIN, V.G., BELKIN, M.S.

COUNTRY OF INFO--USSR

SOURCE--YAD. FIZ. 1970, 11(3), 589-97

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--DIFFERENTIAL CROSS SECTION, PROTON BAMBARDMENT, TRITON BOMBARDMENT, GRAPHIC TECHNIQUE, NUCLEAR REACTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1991/1041 STEP NO--UR/0367/70/011/003/0589/0597

CIRC ACCESSION NO--AP0110731

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202210017-4"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202210017-4

2/2 013 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0110731

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. RESULTS OF THE CALCN. OF THE DIFFERENTIAL CROSS SECTIONS OF (T, P) AND (P, P PRIME) REACTIONS, DESCRIBED BY QUADRANGULAR GRAPHS, USING DISTORTED WAVES, ARE GIVEN. THE PROBLEM OF THE DEPENDENCE OF THE CROSS SECTION UPON THE ENERGY OF INCIDENT PARTICLES WAS STUDIED. THE ABS. VALUES OF CROSS SECTIONS WERE ESTD. ON THE BASIS OF A SIMPLE "OSCILLATOR" APPROXN. BY RENORMALIZATIONS OF ONE PARTICLE REDUCED WIDTHS CALCD. FROM THE EXPTL. DATA ON (D, P) AND (T, D) REACTIONS. FACILITY: INST. YAD. FIZ., MOSK. GOS. UNIV., MOSCOW, USSR.

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202210017-4"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202210017-4

1/2 019 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--POLYMER COATING OF GLASS AEROSOL BALLOONS -U-

AUTHOR-(04)-NEUGODOV, P.P., BASHURA, G.S., TELLERMAN, L.S., MOGVARELI, V.A.

COUNTRY OF INFO--USSR

SOURCE--KHIM.-FARM. ZH. 1970, 4(2), 37-42

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS, BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PLASTIC COATING, GLASS COATING, AEROSOL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/1359 STEP NO--UR/0450/70/004/002/0037/0042

CIRC ACCESSION NO--AP0125007
UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202210017-4"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202210017-4

UNCLASSIFIED PROCESSING DATE--30OCT70

2/2 019

CIRC ACCESSION NO--AP0125007

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A REVIEW WITH 15 REFS. ON THE MANUF. OF POLYMER COATED GLASS CONTAINERS FOR AEROSOLS. FACILITY: KHAR'KOV. NAUCH.-ISSLED. KHIM.-FARM. INST., KHARKOV, USSR.

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202210017-4"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202210017-4

USSR UDC: 615.014.83:666.25

NEUGODOV, P.P., BASHURA, G.S., TELLERMAN, L.S., MDGVARELI, V.A., Khar'kov Scientific Research Chemico Pharmaceutical Institute, Kharkov, Ministry of Health Ukrainian SSR

"Coating Glass Aerosol Cylinders With Protective Polymeric Films"

Moscow, Khimiko-Farmatsevticheskiy Zhurnal, Vol 6, No 2, Feb 70, pp 37-42

Abstract: Glass cylinders, when manufactured to quality standards, can withstand very high pressure, usually exceeding 40 kg/cm^2. Optimal cylinder configuration ensuring the best combination of strength and use convenience was determined experimentally -- the shape of a spindle with flat bottom and top opening for the valve. However, cylindrical and oval shapes also meet basic requirements. Plastic coatings of powdered polymers are deposited and the cylinders are placed in an oven to fuse the coating, and then cooled. Optimal thickness of the coatings varies from 0.8 to 1 mm, rupture strength is 96 kg/cm^2, and relative elongation is 180-250 percent.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202210017-4

1/2 011 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--REMOVAL OF COMBUSTIBLES AND SULFUR COMPOUNDS FROM CARBON DIOXIDE -U-

AUTHOR-(02)-NEUPOKOYEV, G.I., KOLBASIN, A.YA.

COUNTRY OF INFO--USSR

SOURCE--NEFTEPERERAB. NEFTEKHIM. (MOSCOW) 1970, (1), 31-3

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CARBON DIOXIDE, UREA SYNTHESIS, SULFUR, CHEMICAL PURIFICATION, CATALYST/(U)481 COPPER CATALYST

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/1818 STEP NO--UR/0318/70/000/001/0031/0033

CIRC ACCESSION NO--AP0118782

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202210017-4"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202210017-4

2/2 011 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0118782

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CO SUB2 WAS PURIFIED TO CONTAIN SMALLER THAN OR EQUAL TO 1 MG S COMPDS.-M PRIME3 AND SMALLER THAN OR EQUAL TO 0.01 VOL. PERCENT COMBUSTIBLE COMPDS. IN 1 STEP AT 10-12 ATM AND SPACE VELOCITY SMALLER THAN OREQUAL TO 1000 HR PRIME NEGATIVE1. THE PROCESS INCLUDED A FURNACE TO HEAT THE GASES TO 320DEGREES AND A REACTOR WITH CATALYST 481-CU, WHICH HAS A CALCD. LIFE OF 1.5-2.0 YEARS WITHOUT REGENERATION. THE PURIFIED CO SUB2 WAS SUITABLE FOR UREA SYNTHESIS.

FACILITY: SALAVAT. NKHK, SALAVAT, USSR.

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202210017-4"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202210017-4

1/2 014 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--EFFECT OF AN AMMONIA-CARBON DIOXIDE RATIO ON THE DEGREE OF CONVERSION OF CARBON DIOXIDE INTO UREA, AND REASONS FOR THE APPEARANCE

AUTHOR-(02)-NEUPOKOYEV, G.I., IBRAGIMOV, F.KH.

COUNTRY OF INFO--USSR

SOURCE--KHIM. PROM. MOSCOW, 1970, 46(3), 194-5

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--AMMONIA, CARBON DIOXIDE, UREA, WATER, CHEMICAL SYNTHESIS, CHEMICAL PRODUCT PRODUCTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/0585 STEP NO--UR/0064/70/046/003/0194/0195

CIRC ACCESSION NO--AP0119503

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202210017-4"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202210017-4

2/2 014 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0119503

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DEGREE OF CONVERSION OF CO SUB2 INTO UREA AT 185-90DEGREES AND 190-5 ATM INCREASES SHARPLY WHEN THE NH SUB3:CO SUB2 MOLE RATIO IS INCREASED FROM (3.2=3.5):1 TO (4.0-4.3):1 AND INCREASES VERY SLIGHTLY AT HIGHER RATIOS; IT DECREASES WITH INCREASING EXCESS OF H SUB2 O IN THE REACTOR, E.G. AT AN NH SUB3:CO SUB2 RATIO OF 4.1:1 THE DEGREE OF CONVERSION DECREASES FROM 69 TO 62PERCENT WHEN THE EXCESS OF WATER IS INCREASED FROM 0.4 TO 2.2 MOLE-MOLE. THE APPEARANCE OF AN EXCESS OF H SUB2 O IN THE REACTOR IS DUE TO ENTRAINMENT OF WATER WITH GASES FROM THE RECTIFICATION AND DESORPTION COLUMNS AND, TO A LESSER EXTENT, FROM THE WASHING COLUMNS.

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USSR

MAKSIMOVA, YE. V., et al, Khimiya v sel'skom khozyaystve, Vol 9, No 8, 1971, pp 45-46

concentrations as plant growth regulators. Low sage was treated with heteroauxin (0.01 and 0.001%), GMK (0.03 and 0.04%) and CCC (0.1 and 0.01%) in the full blooming stage. The experimental results indicate GMK and CCC as most effective growth regulators for low sage. The seed crop increased almost two-fold. Besides, the absolute weight of the seeds was 30% higher. China aster was treated with KANU (0.01 and 0.001%), heteroauxin (0.03 and 0.04%), GMK (0.03 and 0.04%) and CCC (0.1 and 0.01%). Most effective was the treatment of China aster in the full blooming stage with CCC (0.1%) and GMK (0.03%). The former increased the seed crop by a factor of 1.9 (against the control plant) and the latter--by a factor of 1.8. The absolute weight of the seeds was 8-10% higher. Treatment of floral plants with growth regulator was found to have a positive effect on both the vegetative and generative organs.

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USSR

UDC 631.547:635.9

MAKSIMOVA, YE. V., NEUPOKOYEVA, N. K., Tree Planting and Landscaping Sector, Rostov Scientific Research Institute of the Academy of Municipal Services imeni K. D. Pamfilov

"Effect of Plant Growth Regulators on the Yield of Low Sage and China Aster"

Moscow, Khimiya v sel'skom khozyaystve, Vol 9, No 8, 1971, pp 45-46

Abstract: Floral cultures are regarded as having a low value for farming; as a result, floral-seed crops on the farms in the southwest zone of RSFSR are generally one half to one third of crops elsewhere. High-quality seeds may be produced with the aid of plant growth regulators. The diversity of data on this subject necessitates specific requirements for individual cases with due regard for the biological characteristics of a given floral culture. This study concerns the transplant cultivation of low sage (Salvia Spleudeus) and China aster (Callistephus chiuensis) and application of heteroauxin potassium alpha-naphthoate (KANU) maleic acid hydrazide (GMK) and chlorocholine chloride (CCC) in various

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202210017-4

USSR UDC: 681.2:621.317.326

ABROSIMOV, I. L., KRYNIN, N. M., NEUSTROYEV, L. S., and SHUMEYKO, L. V.

"Device for Measuring Instantaneous Values of Pulse Voltages"

Moscow, Izmeritel'naya Tekhnika, No. 7, 1970, pp 48-50

Abstract: The instrument was developed by the VNIIFTRI /expansion unknown/ and uses the compensation method with an electron-beam null indicator. It is highly accurate for pulse voltages of microsecond and nanosecond duration. The null indicator consists of an oscillograph tube, the screen of which has an opening at the center instead of a luminescent screen, and an electron multiplier behind the screen. The opening is on the electrical axis of the electron gun. The signal to be measured and a compensating signal of opposite polarity are applied to the vertically deflecting plates of the indicator, with a sawtoothed voltage applied to the horizontally deflecting plates. The path sketched by the beam is thus the difference between the measured and compensating signals as a function of time. When the difference is close to zero, the electrons are directed through the opening to the first dynode of the multiplier. When the beam center coincides with the opening, the pulse at the output of the unit is a maximum; with a deviation of the beam away from the opening, the output amplitude is reduced. Known

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202210017-4

USSR

ABROSIMOV, I. L., et al, Izmeritel'naya Tekhnika, No. 7, 1970, pp 48-50

as the IIN-3M, the instrument measures the instantaneous values of pulses ranging in duration from 0.1 to 10,000 μs and in amplitude from 0.1 to 100 volts.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202210017-4

USSR

N

UDC: 621.317.726

KRYVIN, N. M., NEUSTROYEV, L. S.

"The IIN-3M Pulse Voltage Meter"

Dokl. Nauchno-tekhn. seminara "Metrol. i radioelektron." Tezisy, Ch. 1 (Reports of the Scientific and Technical Seminar on Metrology in Radio Electronics. Summaries, Part 1), Moscow, 1970, pp 33-35 (from RZh-Radiotekhnika, No 7, Jul 70, Abstract No 7A184)

Translation: The IIN-3M meter designed for measuring instantaneous periodic pulse voltages in the microsecond range is based on a compensation principle. The instantaneous pulse voltage is compensated by a DC voltage which is read out. As a compensation indicator, the unit uses a special CRT with high amplitude resolution. This CRT is a null indicator. The design of this indicator is briefly described. The instrument has a range of 0-100 V for a pulse duration from 1 μsec to 1 msec with an error of 0.2% (+5 mV). The power taken from the line by the instrument is no more than 700 W. The weight is 85 kg. E. L.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202210017-4

USSR

UDC 541.14

NEUSTROYEV, S. A., and SOKOLOV, Ye. B., Moscow Institute of Electronic Engineering

"Mechanism for the Action of an Electron Beam on Organic Photoresists"

Moscow, Uspekhi Khimii, Vol 41, No 9, Sep 72, pp 1713-1734

Abstract: The article considers phenomena which affect the possibility of obtaining a given line width for a photoresist, including conversions that take place on the exposure of the photoresist to light, the occurrence of chemical reactions during electron bombardment and the interaction of an electron beam with photoresist and substrate. The conversion of a positive photoresist (naphthoquinone diazide) during luminous irradiation follows two competing reaction schemes: a) decomposition of the light-sensitive component and conversion of the resist into a water-soluble compound; b) deacylation of the resist with ketenes with the subsequent appearance of insoluble compounds, observed during heating of the resist. The reaction products after electron irradiation have the same composition as after luminous irradiation. The electrons passing through the photoresist layer lose a great deal of energy. The high characteristic energy loss values for the electrons passing through organic compounds indicate electronic excitation

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202210017-4

USSR

NEUSTROYEV, S. A., and SOKOLOV, Ye. B., Uspekhi Khimii, Vol 41, No 9, Sep 72, pp 1713-1734

of molecules. Secondary electron emission for a solid is characterized by the presence of two groups of electrons: a) slow electrons with energies of a few electron volts and b) electrons with energies over 60 ev. The gist of the mechanism for the internal irradiation of a resist is the fact that electrons, passing through the resist, excite molecules of the resist with subsequent fluorescence and phosphorescence.

There is a detailed discussion of the conditions for the irradiation of a photoresist with an electron stream, the effect of the substrate material (metal, dielectric) on the width of the resultant line and edge definition, and the question of what kind of composition a photoresist should have to satisfy the requirements for the further miniaturization of electronic devices. The phenomenon of internal irradiation is also observed in negative resists. Irradiation is accompanied by cross-linking, which proceeds by a free-radical polymerization mechanism.

The use of an electron beam in industry depends on the solution of the following questions:

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202210017-4

USSR

NEUSTROYEV, S. A., and SOKOLOV, Ye. B., Uspekhi Khimii, Vol 41, No 9, Sep 72, pp 1713-1734

1) The role of the substrate material, which affects the process of the exposure and formation of the resist film, including the action of secondary electron emission.

2) The part played by radicals and ions forming as a result of electron bombardment in chemical reactions in photoresists.

3) Reduction in energy consumption for resist exposure.

4) The search for resists which are more sensitive to electron irradiation and, in addition, do not have the capacity for internal irradiation.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202210017-4

USSR

UDC 621.374.5

NEUSTROYEV, S. N., BARBASOV, V. M., PLAVSKIY, I. A., SOLOV'YEV, A. K.

"An Amplitude-Time Converter"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 5, Feb 72, Author's Certificate No 327584, Division H, filed 8 Jun 70, published 26 Jan 72, p 165

Translation: This Author's Certificate introduces a nanosecond pulse amplitude-time converter which contains an input emitter-follower, a discharge device, a storage capacitor, a discharge current stabilizer and a pulse shaper. As a distinguishing feature of the patent, the linearity and stability of the conversion factor are improved and the dynamic range of convertable amplitudes is extended by connecting the storage capacitor to the output of the emitter-follower through a series circuit made up of a differentiating stage and a charging device based on a diode-transistor switching circuit. The input of the pulse shaper is connected to the storage capacitor through a series circuit made up of a decoupling stage and a nonlinear differentiating stage.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202210017-4

1/2 038 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--MOTION OF GAS AT A GIVEN SPATIAL DISTRIBUTION OF PRESSURE -U-

AUTHOR--NEUVAZHAYEV, V.YE.

COUNTRY OF INFO--USSR

SOURCE--PRIKLADNAIA MATEMATIKA I MEKHANIKA, VOL. 34, JAN.-FEB. 1970, P. 17-23
DATE PUBLISHED----------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--IDEAL GAS, GAS FLOW, GAS PRESSURE, PRESSURE DISTRIBUTION, DIFFRACTION EQUATION SYSTEM, ASYMPTOTIC SOLUTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1988/1546 STEP NO--UR/0040/70/034/000/0017/0023

CIRC ACCESSION NO--AP0106292
UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202210017-4"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202210017-4

USSR UDC 612.014.3:/612.6+612.6.051/:576.858.75.081.35:576.8.095.383

KUZ'MINA, S. V., and NEUSTROYEVA, V. V., Institute of Biological Physics, Academy of Sciences USSR, Pushchino-na-Oke, Moscow Oblast', and Institute of Epidemiology and Microbiology imeni N. F. Gamaleya, Academy of Medical Sciences USSR, Moscow

"Comparative Study of the Mitotic Activity and Chromosome Aberrations in Cell Culture Lines Contaminated With Mycoplasma and Decontaminated"

Moscow, Byulleten' Eksperimental'noy Biologii i Meditsiny, Vol 72, No 11, Nov 71, pp 101-103

Abstract: A 3-year study was conducted of the mitotic activity and the level of chromosome aberrations in MED-14 and MED-15 mouse fibroblast cell culture lines contaminated with mycoplasma and the same lines decontaminated by means of antibiotics. It was established that the presence of mycoplasma lowered the mitotic activity of the cells and increased the level of chromosome aberrations in them. In recent years it was found that the great majority of normal and tumor cell culture lines were infected with Mycoplasmataceae. The level of chromosome aberrations in uncontaminated MED-14 and MED-15 lines is sufficiently high; it was found that cultures of these lines, on prolonged cultivation in vitro, underwent spontaneous malignization, acquiring the

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2/2 038 UNCLASSIFIED PROCESSING DATE--30OCT70
CIRC ACCESSION NO--AP0106292
APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202210017-4"

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. INVESTIGATION OF THE ONE DIMENSIONAL MOTION OF A PERFECT GAS UNDER THE INFLUENCE OF DISTRIBUTED PRESSURE DESCRIBED AS THE INITIAL PRESSURE MULTIPLIED BY MASS TIMES L TO THE MINUS ONE POWER, WHERE THE EXPONENT L IS GREATER THAN ZERO. ATTENTION IS GIVEN TO DISPERSION AND SYMMETRICAL MOTION PROBLEMS WHICH ARE FORMALLY SELF SIMILAR FOR ANY VALUE OF L. HOWEVER, AT VALUES OF L GREATER THAN ONE, THE RESULTING SYSTEM OF ORDINARY DIFFERENTIAL EQUATIONS DOES NOT HAVE A SOLUTION CORRESPONDING TO THE GIVEN BOUNDARY CONDITIONS. THIS IS ASSOCIATED WITH THE FACT THAT INFINITE ENERGY IS CONCENTRATED NEAR THE ZERO MASS POINT. IF THE ENERGY IS TAKEN AS FINITE BY CHANGING THE PRESSURE PROFILE NEAR THE ZERO MASS POINT, THEN THE PROBLEM IS NOT SELF SIMILAR, BUT AS TIME APPROACHES INFINITY IT ASYMPTOTICALLY TENDS TO THE SELF SIMILAR SOLUTION. FOR THE CASE OF L EQUAL TO A SMALLER THAN ONE, THE PROBLEM HAS A SELF SIMILAR SOLUTION FOR ANY VALUE OF L.

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USSR

KUZ'MINA, S. V., and NEUSTROYEVA, V. V., Byulleten' Eksperimental'noy Biologii i Meditsiny, Vol 72, No 11, Nov 71, pp 101-103

capacity to produce tumors of the sarcoma type in mice of the line from which they were derived.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202210017-4

1/2 024 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--COMPOUNDS OF CERIUM (III) OXALATE WITH HYDRAZINE -U-

AUTHOR-(04)-BEZDENEZHNYKH, G.V., KRYLOV, YE.I., SHAROV, V.A., NEUYMIN, A.D.

COUNTRY OF INFO--USSR

SOURCE--ZH. NEORG. KHIM. 1970 15(3) 629-32

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--TERNARY FLUID SYSTEM, IR SPECTROSCOPY, HYDRAZINE, OXALATE, CERIUM COMPOUND, METAL COMPLEX COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1994/1871 STEP NO--UR/0078/70/015/003/0629/0632

CIRC ACCESSION NO--AP0115690

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202210017-4"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202210017-4

UNCLASSIFIED PROCESSING DATE--13NOV70

2/2 024

CIRC ACCESSION NO--AP0115690

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SYSTEM CE SUB2-(C SUB2 O SUB4)SUB3. 10.3H SUB2 O-N SUB2 H SUB4 -H SUB2 O WAS STUDIED BY IR SPECTROSCOPY. THE COMPLEXES ARE FORMED (MU SUBEFF, CURIE TEMP.): CE SUB2 (C SUB2 O SUB4). 6N SUB2 H SUB4. 7.4H SUB2 O, 2.61, 18DEGREES; CE SUB2(C SUB2 O SUB4)SUB3. 4N SUB2 H SUB4. 9H SUB2O (I), 2.37, MINUS 40DEGREES; CE SUB2(C SUB2 O SUB4)SUB3. 3N SUB2 H SUB4. 10.26 SUB2 O, 2.51 MUB, MINUS 10DEGREESK. H SUB2 O CONTENT OF THESE COMPLEXES CHANGED EASILY. THE IR SPECTRA OF THE COMPLEXES ARE GIVEN AND A PARTIAL INTERPRETATION OF THEIR BANDS IS TABULATED. IT IS ASSUMED THAT I HAS ONLY BIDENTATE N SUB2 H SUB4 AND THE REMAINING 2 COMPDS. HAVE MONO AND BIDENTATE N SUB2 H SUB4 LIGANDS.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202210017-4

1/2 018 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--OXIDATION OF A NICKEL ELECTRODE IN CONTACT WITH A SOLID OXIDE ELECTROLYTE DURING ANODIC POLARIZATION -U-

AUTHOR-(04)-GLUMOV, M.V., CHEBOTIN, V.N., PALGUYEV, S.F., NEUIMIN, A.D.

COUNTRY OF INFO--USSR

SOURCE--ELEKTROKHIMIYA 1970, 6(3), 391-4

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--NICKEL, ELECTROLYTIC OXIDATION, METAL ELECTRODE, ELECTROLYTE, ZIRCONIUM OXIDE, ANODE POLARIZATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/0856 STEP NO--UR/0364/70/006/003/0391/0394

CIRC ACCESSION NO--AP0124519
UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202210017-4"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202210017-4

UNCLASSIFIED PROCESSING DATE--30OCT70

2/2 018

CIRC ACCESSION NO--AP0124519

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A DETAILED ANAL. IS GIVEN OF PHENOMENA OCCURRING AT THE INTERFACE NI ELECTRODE SOLID ELECTROLYTE 0.9 ZRO SUB2 PLUS 0.1 Y SUB2 O SUB3 DURING ELECTROCHEM. OXIDN. OF THE ELECTRODE. THE CHANGES OF THE ANODIC POTENTIAL OF THE ELECTRODE AFTER APPLYING THE POLARIZATION CURRENT WERE DETD. INVESTIGATIONS WERE MADE BY THE OSCILLOGRAPHIC METHOD IN A 0.3 CO PLUS 0.7 CO SUB2 ATM. AT 1000DEGREES. TO PROVIDE SATISFACTORY CONTACT BETWEEN THE ELECTRODE AND THE ELECTROLYTE, THE CONTACTING SURFACES WERE GROUND TO FIT. THE GREAT CHANGE OBSERVED IN THE RELATION BETWEEN OVERVOLTAGE AND THE CURRENT WAS CAUSED BY THE PASSAGE OF IONS THROUGH THE FORMED OXIDE FILM (NIO) DURING THEIR DISCHARGE. CONSIDERING THE DIFFICULTLY OF ESTABLISHING A SATISFACTORY CONTACT BETWEEN SOLIDS, GOOD AGREEMENT WAS OBTAINED BETWEEN EXPTL. AND THEORETICAL DATA. FACILITY: INST. ELEKTROKHIM., SVERDLOVSK, USSR.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202210017-4

1/2 019 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--STRUCTURE AND ELECTRICAL CONDUCTIVITY IN ZIRCONIUM DIOXIDE YTTRIUM OXIDE COPPER (I) OXIDE, ZIRCONIUM DIOXIDE YTTRIUM OXIDE BISMUTH OXIDE,

AUTHOR-(04)-KOTLYAR, A.G., NEUYMIN, A.D., PALGUYEV, S.F., STREKALOVSKIY, V.N.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 6(3), 532-6

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--ELECTRIC CONDUCTIVITY, ZIRCONIUM DIOXIDE, YTTRIUM COMPOUND, COPPER OXIDE, BISMUTH OXIDE, NICKEL, SOLUBILITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/1825 STEP NO--UR/0363/70/006/003/0532/0536

CIRC ACCESSION NO--AP0118789

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202210017-4"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202210017-4

2/2 019 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0118789

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SOLUBILITIES OF THE OXIDES OF CU AND BI, AS WELL AS OF METALLIC NI IN A ZRO SUB2 PLUS Y SUB2 O SUB3 MIXT. AT THE RATIO ZRO SUB2:Y SYB2 O SUB3 EQUALS 90:10 ARE VERY INSIGNIFICANT. INTRODUCTION OF CU SUB2 O INTO THE ZRO SUB2-Y SUB2 O SUB3 MIXT. IN AMTS. GREATER THAN 5 MOL. PERCENT IS ACCOMPANIED BY THE APPEARANCE OF ELECTRONIC CONDUCTION CAUSED BY THE COND. OF CU OXIDES ARRANGED ALONG THE BOUNDARIES OF THE RZO SUB2 PLUS Y SUB2 O SUB3 GRAINS IN THE FORM OF THIN FILMS AND FORMING THROUGH BRIDGES AT A RELATIVELY SMALL CONTENT OF THE ADDN. IN (ZRO SUB2 PLUS Y SUB2 O SUB3) PLUS NI MIXTS., THE ELECTRONIC COMPONENT OF THE COND. ENERGIES ONLY AT GREATER THAN 40 WT. PERCENT NI. THE ELEC. COND. OF THE 2 PHASE MIXTS. (SOLID SOLN. OF ZRO SUB2 PLUS Y SUB2 O SUB3 AND NI) THEREBY DEPENDS STRONGLY ON THE FREQUENCY OF THE ELEC. CURRENT THROUGH THE SAMPLE. FACILITY: INST. ELEKTROKHIM., IRKUTSK, USSR.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202210017-4

1/2 034 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--TEMPERATURE EFFECT ON OXYGEN PRESSURE DURING THE FORMATION OF CALCIUM VANADIUM BRONZE -U-

AUTHOR-(03)-VOLKOV, V.L., FOTIYEV, A.A., NEUYMIN, A.D.

COUNTRY OF INFO--USSR

SOURCE--ZH. FIZ. KHIM. 1970, 44(3), 609-12

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--VANADIUM, BRONZE, ENTROPY, THERMODYNAMIC PROPERTY, ELECTROMOTIVE FORCE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/1892 STEP NO--UR/0076/70/044/003/0609/0602

CIRC ACCESSION NO--AP0118854

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202210017-4"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202210017-4

2/2 034 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0118854

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BY EMF. MEASUREMENTS THE TEMP. DEPENDENCE OF THE EQUIL. O PRESSURE IN THE REACTION CAV SUB2 O SUB6 PLUS 5 V SUB2 O SUB5 FORMS AND IS FORMED FROM CAV SUB12 O SUB30 PLUS 1-2 O SUB2 HAS BEEN DETD. AT 803-88DEGREESK. THE THERMODYNAMIC CHARACTERISTICS OF THE CA-V BRONZE HAVE BEEN ESTD.: DELTAH PRIME POSITIVE SUB298 EQUALS MINUS2395 KCAL-MOLE, SDEGREES SUB298 EQUALS 196.65 ENTROPY UNITS, C SUBP EQUALS 266.81 PLUS 3.17 TIMES 10 PRIME NEGATIVE3 T. FACILITY: INST. KHIM., SVERDLOVSK, USSR.

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202210017-4"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202210017-4

1/2 021 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--STRUCTURE AND ELECTRICAL CONDUCTIVITY STUDIED IN THE ZIRCONIUM DIOXIDE, YTTRIUM SESQUIOXIDE AND TANTALUM PENTOXIDE SYSTEM -U-

AUTHOR-(04)-KOTLYAR, A.G., NEUYMIN, A.D., PALGUYEV, S.F., STREKALOVSKIY, V.N.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 6(2), 327-31

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS, CHEMISTRY

TOPIC TAGS--ELECTRIC CONDUCTIVITY, ZIRCONIUM DIOXIDE, YTTRIUM COMPOUND, TANTALUM COMPOUND, OXIDE, MOLECULAR STRUCTURE, SOLID SOLUTION, CRYSTAL LATTICE STRUCTURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/0563 STEP NO--UR/0363/70/006/002/0327/0331

CIRC ACCESSION NO--AP0105548

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202210017-4"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202210017-4

2/2 021 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0105548

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE STRUCTURE AND ELEC. COND. OF A SERIES OF OXIDE MIXTS. IN THE ZRO SUB2 MINUS Y SUB2 O SUB3 MINUS TA SUB2 O SUB5 SYSTEM WERE STUDIED AT THE CONST. RATIO OF ZRO SUB2: Y SUB2 O SUB3 EQUALS 90:10, AS WELL AS OF MIXTS. 0.9 (0.9ZRO SUB2 PLUS 0.1Y SUB2 O SUB3) PLUS 0.1NB SUB2 O SUB5 AND 0.9 (0.9ZRO SUB2 PLUS 0.1 Y SUB2 O SUB3) PLUS 0.1V SUB2 O SUB5. SOLID SOLNS. BASED ON ZRO SUB2 FORM IN THE ZRO SUB2 MINUS Y SUB2 O SUB3 MINUS TA SUB2 O SUB5 SYSTEM. THE STRUCTURE, CONCN. OF O VACANCIES IN THE CRYST. LATTICE, AND ELEC. COND. VARY DEPENDING ON THE RATIO OF THE AMTS. OF Y SUB2 O SUB3 AND TA SUB2 O SUB5 PRESENT IN THE SOLID SOLNS. THE ELEC. COND. OF THE INVESTIGATED SAMPLES OF THE ZRO SUB2 MINUS Y SUB2 O SUB3 MINUS TA SUB2 O SUB5, ZRO SUB2 MINUS Y SUB2 O SUB3 MINUS NB SUB2 O SUB5, AND ZRO SUB2 MINUS Y SUB2 O SUB3 MINUS V SUB2 O SUB5 SYSTEMS AT A SMALLER THAN OR EQUAL TO 1400DEGREES AND IN O AND AIR IS PURELY IONIC.

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202210017-4"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202210017-4

Acc. Nr.: AP0029324 Ref. Code: UR 0297

PRIMARY SOURCE: Antibiotiki, 1970, Vol 15, Nr 1, pp67-71

DISTRIBUTION OF MONOMYCIN IN ORGANS AND TISSUES OF LABORATORY ANIMALS AFTER ITS ADMINISTRATION BY VARIOUS ROUTES

Neuymin, N.I.; Barkov, V.N.

E. I. Martsinovsky Institute for Medical Parasitology and Tropical Medicine, Moscow

The dynamics of monomycin distribution in the skin and organs of animals on parenteral administration and local application of the antibiotic was studied. The highest levels of monomycin on its local application to the skin in a dose of 10 000 Units/kg were observed in the blood and the skin in 1—3 and 3—8 hours respectively. When monomycin ointment was applied to a restricted skin area of animals not fixed in cages in a single dose of 2 g/kg, the highest concentration of the antibiotic was recorded in 24 hours at the site of application. On application of the ointment in the same dosage to fixed animals the monomycin skin levels were twice as higher. After repeated applications no significant accumulation of the ointment in the skin and the organs was observed. On local application to the skin the maximum levels of monomycin in the internal organs were lower than those after parenteral administration which may be of use in prophylaxis of complications.

REEL/FRAME

19680896

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202210017-4"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202210017-4

USSR

UDC 621.375.4:621.31

NEUYMIN, Ya. G.

"Pumping Effect of Ferromagnetic Cores With Rectangular Hysteresis Loop and its Use for Amplifying Weak Signals"

Tr. metrol. in-tov SSSR (Works of Metrological Institutes of the USSR), 1971, vyp. 126(186), pp 35-42 (from RZh-Radiotekhnika, No 12, Dec 71, Abstract No 12D25)

Translation: The author considers the process of magnetic alternation from frequency cycles in a ribbon core with rectangular hysteresis loop. A model is constructed for the process of pumping in the case of action by random signals, and quantitative expressions are derived. An extremely simple circuit for a magnetic amplifier with pumping which can be used for measuring very low-level signals is constructed and analyzed. Bibliography of eight titles. N. S.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202210017-4

USSR

UDC: 681.2.088

NEUYMIN, Ya. G., POPOVA, I. A., RYVKIN, B. L., SHKOL'NIK, B. A.

"Estimates of the Dynamic Error of Measurements"

Moscow, Metrologiya, No 1, 1973, pp 33-44.

Abstract: Standard and minimized estimates are produced for the dispersion of dynamic measurements based on the unevenness of the amplitude-frequency characteristics of a device and the moments of its weight function. The estimates are useful under conditions of incomplete information on the dynamic properties of measurement equipment both in the stage of planning and in its operation.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202210017-4

USSR

UDC: 621.376.4(088.8)

ZHENEVSKIY, Yu. P., MUSAYELYAN, S. A., NEVDYAYEV, L. M., and PAVLOV, V. G.

"Second-Generation Device for Demodulating Signals with Pulse-Phase Modulation"

Avt. sv. SSSR (Author's Certificate USSR) Class $21a^4$, 42; $21a^1$, 36/08, (H 03 d 3/24, H 03K 9/04), No. 275170, Application 12.07.68, Publication 12.10.70 (from RZh-Radiotekhnika, No. 3, March 71, Abstract No. 3D94P)

Translation: A device is proposed, which contains a sawtooth voltage oscillator connected to a signal source, a switching circuit with a memory element controlling a source of synchronization, an interpolator, a low-frequency filter, for example, a trigger, and a delay line. To reduce the noise at the communication channel output caused by the random lost operating pulses at the input of the device, the synchronization source is connected to the switching circuit through a coincidence network connected through the control input to the trigger, the switching input of which is directly connected to the signal source while the input of the counter is connected through the delay line to the synchronization source.

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202210017-4"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202210017-4

USSR UDC: 621.376.4:621.376.55

ZHENEVSKIY, Yu. P., MUSAYELYAN, S. A., NEVDYAYEV, L. M., PAVLOV, V. G.

"A Device for Demodulating Signals With Pulse Position Modulation of the Second Kind"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 22, 1970, Soviet Patent No 275170, Class 21, filed 12 Jul 68, p 42

Abstract: This Author's Certificate introduces a device for demodulating signals with pulse position modulation of the second kind. The unit contains a sawtooth voltage generator connected to the signal source, a keying circuit with memory element controlled by a synchronization source, an interpolator, e. g. a low-frequency filter, a flip-flop, and a delay line. As a distinguishing feature of the patent, the device is designed for reduction of noises at the output of the communication channel caused by random disappearances of working pulses at the input of the device. The synchronization source is connected to the keying circuit through a coincidence gate whose control input is connected to the flip-flop, the trigger input of the flip-flop being connected directly to the signal source. The counting input of the flip-flop is connected through the delay line to the synchronization source.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202210017-4

USSR

UDC 621.376.55(088.8)

VENEDIKTOV, M. D., ZHENEVSKIY, YU. P., NEVDYAYEV, L. M., MUSAYELYAN, S. A.

"Nonsynchronous Demodulator"

USSR Author's Certificate No 252411, Filed 27 Feb 68, Published 12 Feb 70 (from RZh-Radiotekhnika, No 9, Sep 70, Abstract No 9D34P)

Translation: This author's certificate introduces a demodulator which contains a forbidden circuit, an inertialess pulse expander, a low-frequency filter and a forbidden circuit control circuit. In order to improve the noiseproofness of the device, a two-channel device is connected between the output of the pulse expander and the input of the low-frequency filter. This two-channel device contains a series-connected differentiating circuit for the leading edge, a delay line and an OR circuit in the first channel and a differentiating circuit for the trailing edge, a delay line and a forbidden circuit is connected to the second input of the OR circuit, and the second input, to the output of the expander.

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202210017-4"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202210017-4

USSR UDC 681.3.06:51

ARONOV, V. I., NEVEL'SKAYA, E. Ya.

"Digital Computer Geological Information Retrieval Systems"

Tr. Vses. N.-i. Geologorazved. Neft. In-t [Works of All-Union Scientific Research and Geological Prospecting Petroleum Institute], No 103, 1971, pp 5-14, (Translated from Referativnyy Zhurnal, Kibernetika, No 10, 1971, Abstract No 10 V775 by the author's).

Translation: The problem of creation of an information retrieval system for geological information using digital computers is studied. The capabilities of a medium size machine (such as the BESM-4) to provide for storage and automated retrieval of information are estimated. An algorithm is presented of an information retrieval system designed for the BESM-4, with examples of its utilization.

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202210017-4"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202210017-4

USSR UDC 681.3.06:51

ARONOV, V. I., NEVEL'SKAYA, E. Ya., SAMARIN, V. S.

"Systems for Retrieval and Statistical Processing of Geological Information by Digital Computer"

Tr. Vses. n.-i Geologorazved. Neft. In-t [Works of All-Union Scientific Institute for Geological Prospecting and Petroleum], No 103, 1971, pp 15-27, (Translated from Referativnyy Zhurnal, Kibernetika, No 10, 1971, Abstract No 10 V788 by the author's).

Translation: This work is dedicated to description of the algorithm of a system for retrieval and statistical processing of geological information realized on a BESM-4 type machine. The system allows sampling from the initial material according to an assignment and statistical processing of the sample (calculation of estimates of central moments, determination of the type of distribution, performance of multidimensional correlation and regression analysis). The system calls for the use of a broad set of types of coupling and the possibility of complete listing of combinations of parameters and functions of them.

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202210017-4"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202210017-4

USSR

GOKHLERNER, M. M. and NEVEL'SKIY, P. B.

"Peculiarities of Heuristic Activity in the Solution of Problems Related to the Continuation of an Unfamiliar Text"

Lingvist. Probl. Avtomatiz. Inform. Poiska [Linguistic Problems of the Automation of Information Retrieval -- Collection of Works], Kiev, 1972, pp 60-70 (Translated from Referativnyy Zhurnal Kibernetika, No 9, 1973, Abstract No 9V826).

Translation: This article describes an experiment involving guessing the continuation of an unfamiliar text based on information extracted from the preceding text. A method for performing the experiment and its data are presented. Finally, conclusions are drawn concerning the relationship between subjective uncertainty of a text and the heuristic capabilities of man.

Ye. Burgina

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202210017-4"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202210017-4

USSR

UDC 51:155.001.57:612.82

NEVEL'SKIY, P. B.

"The Time and Speed of Memorization"

Probl. Bioniki. Resp. Mezhved. Nauchno-tekhn. Sb. [Problems of Bionics, Republic Interdepartmental Scientific and Technical Collection], No 4, 1970, pp 91-94, (Translated from Referativnyy Zhurnal, Kibernetika, No 6, 1971, Abstract No 6 V672 by the author).

Translation: The results of experiments have shown a decrease in the rate of memorization as a function of its time. The biological expediency of slow memorization, leading to rapid selection of information from memory, is suggested.

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202210017-4"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202210017-4

USSR

UDC 681.3.06:51

NEVEL'SKIY, P. B., ROZENBAUM, M. D.

"Information Measurements in Special Languages"

Probl. Bioniki. Resp. Mezhved. Nauchno-tekhn. Sb. [Problems of Bionics, Republic Interdepartmental Scientific and Technical Collection], No 4, 1970, pp 94-97, (Translated from Referativnyy Zhurnal, Kibernetika, No 6, 1971, Abstract No 6 V596 by the authors).

Translation: The problem of communications between man and machine in the case of the use of natural languages is studied, setting the problem of measurement of the information parameters of special business languages. Experiments on estimation of the subjective entropy and redundancy of a special language using the guessing method are described. Results are presented from experiments showing that the high information content of special languages is combined with extremely low subjective entropy and high redundancy of these languages for their carriers, which is apparently related to knowledge of the limited special dictionary. The possibility is suggested of using this factor in solving problems of communications between man and machine.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202210017-4

USSR

NEVEL'SON, M. B., KHAS'MINSKIY, R. Z.

"Stochastic Approximation and Recurrent Estimation"

Stokhasticheskaya Approksimatsiya i Rekurrentnoye Otsenivaniye [English Version Above], Moscow, Nauka Press, 1972, 304 pages (Translated from Referativnyy Zhurnal, Kibernetika, No 1, 1973, Abstract No 1 V361 from the Annotation).

Translation: This book is dedicated to successive methods of solution of a class of problems including, for example, the problem of determination of the points of maximum of a function if each measured value of this function contains a random error. Some of the basic procedures for stochastic approximation are studied from a single point of view -- from the point of view of the theory of Markov processes and martingales. Examples are studied of application of the theorems proven to certain problems of the theory of estimation, the theory of teaching and the theory of control, as well as certain problems of transmission of information when feedback is present.

The book is designed for students, graduate students, engineers and scientific workers specializing in the area of mathematical statistics, the theory of random processes and their applications. 78 Biblio. Refs.

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USSR UDC 621.391.1:519.8

NEVEL'SON, M. B., KHAS'MINSKIY, R. Z.

"Continuous Stochastic Approximation Procedures"

Moscow, Problemy Peredachi Informatsii, Vol 7, No 2, 1971, pp 58-69.

Abstract: In an earlier work, it was demonstrated that a continuous version of the Robbins-Monroe stochastic approximation procedure with "white noise" perturbations can be interpreted from the standpoint of the stability of the solution of a system of ordinary differential equations with attenuating random perturbations. In this work, a similar method is used to study certain other procedures of stochastic approximation for continuous time. The theorem proven in the earlier work concerning stability with attenuating random perturbations is slightly generalized. The conditions of convergence of the procedures are given in terms of the existance of the corresponding stochastic Lyapunov functions.

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NEVEL'SON, M. B.

for any y, $t > s > 0$ and for any open set U and if any trajectory $x^{s,y}(t)$ with probability 1 reaches the area of any point in a finite time. This work produces the following results: 1) necessary and sufficient conditions for correctness of relationship (2), 2) necessary and sufficient conditions for reflexivity of process $x^{s,y}(t)$, 3) for equations (1) with constant matrices B(t) and C(t), necessary and sufficient conditions for existence of a finite invariant measure for process $x^{s,y}(t)$.

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ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ALMOST A DECADE HAS PASSED SINCE A SUCCESSFUL PATH FOR THE FURTHER CONCENTRATION OF PRODUCTION WAS FOUND IN LVOV. THIS PATH IS THE CREATION OF FIRMS. THE CENTRALIZATION IN FIRMS OF PRODUCTION FUNDS AND MATERIAL AND MANPOWER RESOURCES THAT WERE PREVIOUSLY SCATTERED AMONG SMALL ENTERPRISES, THE CREATION OF UNITED AND, NATURALLY, STRONGER SERVICES, THE IMPLEMENTATION OF PRODUCT, TECHNOLOGICAL OR OTHER TYPES OF SPECIALIZATION-ALL THIS HAS PRODUCED IMPRESSIVE ECONOMIC EFFICIENCY, EVEN WITHOUT ANY SIGNIFICANT CAPITAL INVESTMENTS. THE LVOV EXPERIENCE HAS RECEIVED ALL-UNION RECOGNITION. WHAT IS HAPPENING NOW? THE RESOLUTION ADOPTED THE YEAR BEFORE LAST THAT PROVIDED, AMONG OTHER THINGS, FOR THE ENLARGEMENT OF THE DAWN CLOTHING FIRM HAS NOT BEEN CARRIED OUT. CERTAIN OTHER POINTS WHICH, INCIDENTALLY, WERE INCLUDED IN THE RESOLUTION AT THE SUGGESTION OF THE UKRAINE REPUBLIC MINISTRY OF LIGHT INDUSTRY-HAVE ALSO REMAINED ON PAPER. THE MINISTRY'S CHIEF ADMINISTRATIONS, USING VARIOUS PRETEXTS, HAVE AVOIDED ACTION ON THE PROPOSAL BY THE LVOV PROVINCE AND CITY AGENCIES FOR THE CREATION OF NEW ASSOCIATIONS.... EXPERIENCE HAS SHOWN THAT SMALL, UNCOORDINATED ENTERPRISED DO NOT "FIT INTO" THE REFORM. ATTEMPTS TO FIND A WAY OUT BY INTRODUCING CERTAIN ELEMENTS OF ECONOMIC ACCOUNTABILITY INTO THE ACTIVITY OF THE EXISTING MANAGEMENT APPARATUS (TRUSTS AND CHIEF ADMINISTRATIONS) ARE HALF-MEASURES AT BEST. FOR EXAMPLE, L. RYZHENKO, UKRAIN REPUBLIC MINISTER OF THE MEAT AND DAIRY INDUSTRY, TOLD ME ABOUT JUST THIS KIND OF A CHANGEOVER TO ECONOMIC ACCOUNTABILITY IN HIS PROVINCE ADMINISTRATIONS: "WE CALL THEM ASSOCIATION-ADMINISTRATIONS NOW.

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3/3 008 UNCLASSIFIED PROCESSING DATE--20NOV70
CIRC ACCESSION NO--AN0122659
ABSTRACT/EXTRACT--IT'S ALL IN THE HYPHEN. YOU UNDERSTAND, DON'T YOU?" AND SO THAT EVERYTHING WOULD BE CRYSTAL CLEAR, HE ADDED: "IT'S TO MAINTAIN HIGH SALARIES THERE. AFTER ALL, THE REASON THAT WE SET UP THE TRUSTS AND ADMINISTRATIONS WAS SO AS NOT TO LOSE THE SPECIALISTS WHO HAD WORKED IN THE ECONOMIC COUNCILS." "SO, IT TURNS OUT THAT THE TRUST WERE SET UP IN ORDER TO GIVE THE SPECIALISTS EMPLOYMENT. HAVE I UNDERSTOOD YOU CORRECTLY?" THE MINISTER CONFIRMED THAT I HAD UNDERSTOOD HIM CORRECTLY. APPORXIMATELY THE SAME CONSIDERATIONS GUIDED THE UKRAINE REPUBLIC MINISTRY OF THE FOOD INDUSTRY IN CONDUCTING THE STAGE-BY-STAGE LIQUIDATION OF THE DNIESTER FIRM. FROM CONVERSATIONS WITH MINISTRY OFFICIALS, THE EXECUTIVE OF FIRMS AND ECONOMISTS, I GAINED THE IMPRESSION THAT THE CHIEF ADMINISTRATIONS HAVE SHOWN SPECIAL OPPOSITION TO THE ASSOCIATIONS. SEEING THAT THE ASSOCIATIONS ARE "EATING UP" THE TRUSTS, THE CHIEF ADMINISTRATIONS ARE AFRAID THAT THEY TOO WILL END UP WITH NOTHING TO DO. MANY PEOPLE EMPHASIZE THAT THE PATH TO THE CREATION OF NEW ASSOCIATIONS WILL BE CLEARED ONLY WHEN THE ECONOMIC REFORM ENCOMPASSES NOT ONLY THE ENTERPRISES BUT ALSO THE MINISTRIES. THE CHANGEOVER TO FULL ECONOMIC ACCOUNTABILITY WILL COMPEL THE MINISTRIES TO DO AWAY WITH ANTIQUATED FORMS OF THE MANAGEMENT OF ENTERPRISES AND TO RELY MORE EXTENSIVELY ON PRODUCTION ASSOCIATIONS.

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VOLKOV, N. I., ZATSIORSKIY, V. M., KRYLATYKH, Yu. G., MAKSIMOV, N. M., NEVERKOVICH, S. D., SARSANIYA, S. K., CHEREMISINOV, V. N., and SHIRKOVETS, Ye. A., State Order of Lenin Central Institute of Physical Culture

"Physiological Characteristics of Repeated Exercise Done at Different Heart Rates"

Moscow, Teoriya i Praktika Fizicheskoy Kul'tury, No 5, 1971, pp 23-28

Abstract: Lung ventilation, oxygen consumption, and release of "excess" CO_2 were measured in 3 skilled cyclists after repeated exertions on a bicycle ergometer with different lengths of work and rest periods. Each subject performed 5 variations of the experiment at 3 heart rates - 150, 165, and 180 beats/min. The periods of exertion were 1.5, 3, 7.5, 15, and 30 min. The nature of the physiological reactions to the repeated exercise varied considerably with the length of the work and rest periods. Oxygen consumption was highest when the repeated exercise was done at a heart rate of 180 beats/min with work periods of up to 3 min. Lung function was most efficient when the heart rate was over 150 beats/min and the exercise period was less than 7.5 min. Repeated exercise at 165 beats/min for about 7.5 min had the greatest effect on tissue utilization of oxygen.

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USSR UDC 538.25

BAYBIKOV, B. S., DREYTSER, G. A., KALININ, E. K., and NEVEROV, A. A., Moscow Aviation Institute

"The Effect of Reinolds Number on the Nonstationary Convection Heat Exchange in a Tube During a Change in Heat Load"

Moscow, Teplofizika Vysokikh Temperatur, Vol 10, No 6, Nov-Dec 72, pp 1248-1255

Abstract: Experimental study was carried out of the nonstationary local heat output with a constant air consumption in an electrically heated tube and intermittent change in heat liberation in a thin wall tube. It has been established that the nonstationary heat output differs substantially from the calculated value obtained with an assumption of a quasistationary state. Increase in Re leads to a diminished effect of the nonstationary state of Nu. It has been shown that a change in air pressure has no effect on the heat output both during the stationary and nonstationary heat load. Experimental results have been generalized in form of the function $K = f(K_{T_H}, Re, T_W/T_b)$. The calculations carried out show that with a nonstationary heat load on the tube wall, the turbulent characteristic of air stream should be substantially different from the quasistationary ones.

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UDC 536.244:532.517.4.001.5

KALININ, E. K., DREYTSER, G. A., BAYBIKOV, B. S., NEVEROV, A. S.

"Effect of a Nonstationary Heat Flow on Heat Emission in a Pipe Under Gas Heating"

V sb. Teplo- i massoperenos (Heat and Mass Transfer -- Collection of Works), Vol. 1, Minsk, 1972, pp 363-367 (from RZh-Teploenergetika, No 7, Jul 72, Abstract No 7G83)

Translation: An experimental study of the local nonstationary coefficient of heat emission is described. The study was made for different laws of the change in heat emission in two thin-walled tubes of thickness 0.3 and 0.22 mm and internal diameters of 5.93 and 5.56 mm, respectively, and length 1200 mm and for a turbulent gas flow with constant discharge G. The experiments were in the following ranges: $Re_b = 10^4 - 6.4 \cdot 10^5$, temperature factor $(T_w/T_b) =$ = 1.12-1.16 and gas pressure 2-2.6 kgauss/cm^2. The change in $K = Nu/Nu_0$, (Nu and Nu_0 are the nonstationary and quasistationary Nusselt numbers) and in the wall temperature T_w with time was independent of pressure and is determined

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KALININ, E. K., et al, Teplo- i massoperenos, Vol. 1, Minsk, 1972, pp 363-367

by G and the heat release in the walls of the tube. In nonstationary conditions the coefficient of heat release is considerably different from the quasistationary value and depends on the quantity $K_{Tg} = \partial T_w/\partial T \cdot d/(T_w - T_b)_0 \times \times \sqrt{\lambda/\psi_p Gg}$, where τ is time, $(T_w - T_{b0})$ is the temperature head in a given section of the tube, the form of the final temperature head for the input and the latter the initial temperature head for the output of the thermal load; λ and ψ_p are the coefficient of thermal conductivity and the thermal capacity of the gas, $g = 9.8$ m/c^2. This criterion characterizes the ratio of the nonstationary transfer of thermal flow from the wall to the convective axial thermal flow. The effect of K_{Tg} on nonstationary heat transfer is reduced with the growth in Re, the growth of T_w/T_b for $T_{Tg} > 0$ and with the decrease of T_w/T_b for $K_{Tg} < 0$ and is independent of gas pressure. The experimental results are generalized in the form of relationships between K and K_{Tg}, Re, T_w/T_b. 3 ill., 2 ref. Authors abstract.

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UDC: 681.3.06.51

BLOKH, A. Sh., NEVEROV, G. S.

"An Aid for Developers of Algorithms"

V pomoshch' avtoram algoritmov (cf. English above), Minsk, Belarus', 1971, 191 pp. ill. 69 k. (from RZh-Kibernetika, No 11, Nov 71, Abstract No 11V823 K)

Translation: The book presents a practical method of developing algorithm flowcharts. There is an introduction and three chapters. The introduction outlines the minimum necessary information on digital computer programming. Chapter I describes the canonical method of synthesizing flowcharts of algorithms of binary logical variables. Chapter II gives the procedure of constructing the flowcharts of algorithms with a large number of logical conditions. Chapter III outlines the canonical method of synthesis of flowcharts of algorithms of k logical variables. The text is illustrated by numerous examples, including an example of development of an algorithm which models a complex production process. V. Mikheyev.

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USSR

UDC 528.514

NEVEROV, L. A., KORTEV, N. V., LARIONOVA, T. A., MITROFANOV, V. V., MILASHEVSKIY, A. K., POPOV, YU. V., Candidate of Sciences, RYZHENKO, B. V.

"The New KDG-3 Phototachymeter With Semiconductor Emission Source"

Leningrad, Optiko-mekhanicheskaya Promyshlennost', No 9, Sep 70, pp 35-39

Abstract: The authors describe the operating principle, optical system, construction and test results of the first serially produced phase phototachymeter with gallium arsenide diode as the emission source. The instrument can be used to measure distances of up to 2 km with an error of no more than 15 mm over its entire range. Measurement time is 10-15 minutes. The instrument is equipped with thermostatic control and can be used at temperatures from -50 to +50°C. Power consumption is no more than 5 watts.

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USSR UDC 539.12.08:621.039.564

MUKHACHEV, B. V., NEVEROV, V. A., and SAMOYLOV, P. S.

"Measuring Gamma-Radiation Fields in Reactor Channels and the Assembly of Worked-Out Fuel Elements With the Help of an Instrument for Measuring the Exposure Dose Rate on the Base of the Ionization Chamber"

Tr. Soyuz. NII Priborostr. [Works of the All-Union Scientific Research Institute of Instrument Making], 1972, No 17, Pp 56-62 (from Referativnyy Zhurnal, No 8, Aug 72. 50. Yadernyye Reaktory. Single Issue. Abstract No 8.50.151)

Translation: The sensitivity of ionization chambers (IC) to neutrons of different energies was evaluated. The sensitivity of IC to neutrons with 2.4 and 15 Mev energy was determined on a neutron generator of HG-200 type. Averaged over five specimens, IC sensitivities of M-type equal $(2.3\pm0.8)\cdot10^{-19}$ and $(7.8\pm0.5)\cdot10^{-19}$ $\frac{a}{neutr/(cm^2\cdot sec)}$; of B-type they equal $(2.7\pm0.5)\cdot10^{-19}$ and $(10.1\pm3.8)\cdot10^{-19}$ $\frac{a}{neutr/(cm^2\cdot sec)}$. The upper sensitivity limit of B-type IC to thermal neutrons, measured on the SM-2 nuclear reactor, equals

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MUKHACHEV, B. V., et al., Tr. Soyuz. NII Priborostr., 1972, No 17, pp 56-62

$3 \cdot 10^{-19}$ $\frac{a}{neutr/(cm^2 \cdot sec)}$. The sensitivities to γ-radiation with 1.25 Mev energy are, for IC of M- and B-types, $(1.36 \pm 0.11) \cdot 10^{-9}$ and $(1.56 \pm 0.08) \cdot 10^{-9}$ $\frac{a}{r/sec}$. The derived evaluations made it possible to measure the exposure dose rate P_γ of γ-radiation in channels of the SM-2 nuclear reactor. Upper-level distributions of P_γ for channels No 16 and 111K and for the assembly of worked-out fuel elements are presented. The P_γ drop in time was measured in the No 16 channel center at instantaneous shut-down of the nuclear reactor.

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UDC: 539.125.5.04

NEVEROV, V.A. and TSYKANOV, V.A.

"Results of Complex Investigation of Heat Release in SM-2 Reactor"

Tashkent, Sb. Dozimetriya i Radiats. Protsessy v Dozimetr. Sistemakh (Symposium on Dosimetry and Radiation Processes in Dosimetric Systems), 1972, pp 200-206 (from Referativnyy Zhurnal-Yadernyye Reaktory, 1973, Abstract No 3.50.80)

Translation: Basic values of energy release were measured on experimental devices with active nuclear reactor for a specific set of materials (along thickness and height) and a given configuration. Results of these measurements obtained by computer are presented. Contribution of neutron component to the energy release of a number of construction materials subject to radiation was determined. 1 illustration. 1 table. 1 reference.

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USSR UDC:539.125.5.04

NEVEROV, V.A. and SAMSONOV, B.V.

"Experimental Determination of Irradiation Conditions With Minimum Expenditure of Reactor Time"

Tashkent, Sb. Dozimetriya i Radiats. Protsessy v Dozimetr. Sistemakh (Symposium on Dosimetry and Radiation Processes in Dosimetric Systems), 1972, pp 206-210 (from Referativnyy Zhurnal-Yadernyye Reaktory, 1973, Abstract No 3.50.89)

Translation: On the example of SM-2 and MIR nuclear reactors it is shown that knowing the basic values of energy release by one of the materiels (Ni or Cu) with one state of the reactor system it is possible to calculate and predict with definite accuracy and with minimum expenditure of time the irradiation conditions of other arrangements. 1 table, 5 references.

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UDC 612.846

NEVEROV, V. P., Institute of Physiology imeni I. P. Pavlov, Leningrad

"Mechanism of Optokinetic and Reverse Postoptokinetic Nystagmus"

Leningrad, Fiziologicheskiy Zhurnal SSSR imeni I. M. Sechenov, No 8, 1972, pp 1212-1217

Abstract: The frequency of optokinetic and reverse optokinetic nystagmus (the latter is the rapid component of the oculomotor reaction to a visual stimulus and it moves in he direction opposite that of the rapid component of the preceding optokinetic nystagmus) was studied in rabbits with one eye or both eyes closed. With binocular vision, the frequency of both types of nystagmus was independent of the direction (clockwise or counterclockwise) in which the stimulus (a rotating white cylinder with black stripes) moved. With monocular vision, however, reverse postoptokinetic nystagmus was half as frequent regardless of the direction of movement of the stimulus while optikinetic nystagmus was one-tenth as frequent after counterclockwise rotation of the stimulus, but was unchanged after clockwise rotation of the stimulus. To account for the differences in the mechanisms underlying the two types of nystagmus, the authors hypothesizes that structures of the second (cortical) reflex arc are involved in reverse postoptokinetic nystagmus, whereas structures of the first (subcortical reflex arc are responsible for optokinetic nystagmus. 1/1

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UDC 616.28-001.34-091

PRONIN, L. S., MUDRETSOV, N. I., YAKIMETS, I. M., MOROZOV, V. N., Candidates of Medical Sciences, BUGROV, V. V., and NEVEROVA, G. M., Candidates of Technical Sciences

"Pathomorphology of Trauma of the Auditory Analysor After Single Exposure to Pulsed Noise"

Moscow, Vestnik Otorinolaringologii, No 1, Jan/Feb 72, pp 37-43

Abstract: After a single 1-second exposure to high intensity (155-173 db) sound impulses of a sinusoidal form and a frequency of 10-2000 hz, guinea pigs suffer partial or complete loss of hearing due to mechanical destruction or necrosis of the organ of Corti. Pathological processes terminate within 3 days. Twelve days after exposure to the less traumatic low-frequency waves, the organ of Corti recovers, with vacuolization. Medium frequency sounds cause some damage to the spiral ganglion, and high frequency sounds induce severe, irreversible destruction of the organ of Corti. Middle ear injury is insignificant, and cortical centers of hearing remain intact.

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Acc. Nr: AP0034767 Ref. Code: UR 0241

PRIMARY SOURCE: Meditsinskaya Radiologiya, 1970, Vol 15, Nr 1, pp 57-59

THE INFLUENCE OF GAMMA-RADIATION ON THE DEVELOPMENT OF THE SKELETON OF EXTREMITIES OF MICE EMBRYOS

L. G. Neverova

Summary

The author demonstrates the features peculiar to the action of relatively large and small doses of Co^{60} gamma-radiation on the development of the skeleton of the skeleton of the extremities of 247 mice embryos. The action of a dose of 300 rad in the phase of high sensitivity of the embryonal extremity caused severe monstrosities. Irradiation in lower doses (100 and 50 rad) leads mainly to an inhibition of ossification. The irradiation effect depends upon the dose of radiation and the stage of development of the embryo.

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UDC 911.3.613.11 (98)

ANDRONOVA, T. I., and NEVEROVA, N. P.

"The Effect of Transpolar Climate on Red and White Blood Cell Systems during Initial Acclimatization Periods for Man"

V sb. Akklimatiz. i krayev. patol. cheloveka na Severe (Acclimatization and Pathology of Man in the Far North--collection of works), Arkhangel'sk, 1970, pp 11-13 (from RZH-36. Meditsinskaya Geografiya, No 1, Jan 71, Abstract No 1.36.49 by V. Zhadovskaya)

Translation: Data is presented on the composition of red and white blood cells during the polar night and polar day in young workers three months after arrival in the Far North. The first examination, 3-7 days after arrival, showed no deviation from normal. Acclimatization during the polar night was accompanied by an increase in hemoglobin and erythrocyte levels, while reticulocytes remained constant or even slightly decreased. Acclimatization during the polar day showed some decrease in hemoglobin; erythrocyte count was unchanged; and reticulocytes decreased. White blood cell changes during the polar day included some decrease in the leukocyte count with relative increase in lymphocyte level. During the period of the polar night, the leukocyte count increased with relative decrease in the percentage of lymphocytes.

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UDC 911.3.613.11

NEVEROVA, N. P., and ANDRONOVA, R. I.

"Cholinesterase Activity During Human Acclimatization in the Arctic"

V. sb. Akklimatiz. i krayev. patol. cheloveka na Severe (Acclimatization and Regional Pathology of Man in the Far North--collection of works), Arkhangel'sk, 1970, pp 126-128 (from RZh-36. Meditsinskaya Geografiya, No 1, Jan 71, Abstract No 1.36.50 by T. Koretskaya

Translation: A total of 198 workers were studied; all came from the central zone of the USSR. During the polar night (January), cholinesterase activity was 2-2-1/2 times higher than normal -- it was 13.5 min. or 44-100 units. Data was the same for the polar day. The extreme of cholinesterase activity was noted at air temperatures of -14°C, -20°C, and -28°. The character and direction of the field of enzyme distribution indicates a nonlinear correlation. The same relationship was observed between cholinesterase activity and atmospheric pressure. A linear relationship was found between change of cholinesterase activity and air humidity. There was a small degree of correspondence between cholinesterase activity and wind speed.

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UDC 911.3.613.11 (98)

NEVEROVA, N. P., and KONONOV, A. S.

"The Function of External Respiration During the Initial Acclimatization Period for Man in the Arctic"

V sb. Akklimatiz. i krayev. patol. cheloveka na Severe (Acclimatization and Regional Pathology of Man in the Far North--collection of works), Arkhangel'sk, 1970, pp 123-125 (from RZh-36. Meditsinskaya Geografiya, No 1, Jan 71, Abstract No 1.36.47 by T. Koretskaya

Translation: Research was conducted on 260 people, from 19-25 years of age, arriving in the settlement of Amderma from the central zone of the USSR. The breathing rate progressively decreased regardless of the season of the newcomer's arrival. The lowest breathing rate occurred after a six month period during the polar night (15.1±0.25). During the first three months some insignificant decrease in lung vital capacity was noted (from 4003.5±73.1 ml to 3821.9±139.9 ml). Later there was almost no difference as compared to controls. An increase in breathing volume was observed in the first six months (from 9.5±0.23 to 12.7±0.31%), and an insignificant decrease in reserve volume. An increase in minute breathing volume was noted in winter months (from 118.6±

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NEVEROVA, N. P., et al, Akklimatiz. i krayev. patol. cheloveka na Severe, Arkhangel'sk, 1970, pp 123-125

±10.3 to 121.0±11.5%) and a decrease in the summer months (to 121.4±12.0%). Breathing reserve increased during the period of the polar day and decreased in the period of the polar night. During the arrival period, 50% of the subjects experienced dyspnea on physical effort. During the initial stage of acclimatization hyperventilation was observed both during the polar night and the polar day. The decrease in breathing reserve during the polar night indicates a decrease in functional capacity of the external breathing apparatus.

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USSR UDC: 621.642.3-762.445

NEVESENKO, V. I.

"A Sealing Device for the Covers of High-Pressure Vessels"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 10, Apr 72, Author's Certificate No 332275, Division F, filed 2 Mar 70, published 14 Mar 72, p 143

Translation: This Author's Certificate introduces: 1. A sealing device for the covers of high-pressure vessels with an elastic seal set in a groove on the face of a flange in the vessel housing, and rigid protective elements with stopper devices surrounding the housing. As a distinguishing feature of the patent, the design is simplified and reliability is improved, and the range of application is extended by making the elastic seal with recesses on the lateral surfaces on the joint side. These recesses are cylindrical and accommodate the rigid protective elements, which are installed flush with the sealing surfaces. The protective elements are made in the form of rings through which the stopper devices interact with the seal, preventing it from coming out of the groove when the cover is opened. 2. A modification of this sealing device distinguished

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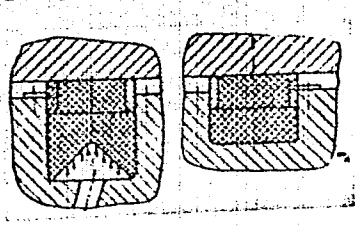
NEVESENKO, V. I., USSR Author's Certificate No 332275

by the fact that accuracy and stability are improved by making the seal from two ring sections, one of which is of the same height as the recesses and is located between the rigid protective rings.



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USSR

UDC 533.6.013.2.011.35:629.7.025.73

NAZARENKO, V. V., NEVEZHINA, T. P., Moscow

"Measurement of Pressure on a Vibrating Aileron in a Transonic Flow"

Moscow, Mekhanika zhidkosti i gaza, No. 2, Mar/Apr 72, pp 179-185

Abstract: The pressure was measured on a vibrating aileron in a plane-parallel transonic flow. The measurements were made using pressure transducers in a forced vibration regime at $M = 0.974$. The characteristics of the aileron deformation were evaluated considering the highly nonlinear effects associated with the compression shock during the vibration and a possible mechanism accounting for self-oscillations of the control unit is suggested. It is noted that self-oscillations of control units of aircraft at Mach number close to unity are termed "buzz" in Western literature. The experiments were conducted on a wing model of symmetric profile with relative thickness $c = 8.6\%$. The aileron was fastened to the wing on an elastic seal. The calculation of the operation of pressure forces on the vibrating aileron shows that the displacement of the zone of interaction of the shock with the boundary layer can lead to damping of vibrations. This result was used as the basis of the following scheme for the formation

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NAZARENKO, V. V., NEVEZHINA, T. P., Mekhanika zhidkosti i gaza, No. 2, Mar/Apr 72, pp 179-185

of self-oscillations set up under conditions of mixed flow over the aileron. Since nonstationary aerodynamic forces arise in the supersonic zone of flow over the aileron which lead to negative damping, randomly occurring oscillations of the aileron will be maintained by these forces under certain conditions. Oscillations cause displacement of the pressure jump along the surface of the aileron. A rise in the amplitude will occur until the displacement of the compression jump occupies a fairly large segment of the surface. Since nonstationary aerodynamic forces arising in this zone are basically damping forces, there arises at a certain amplitude a dynamic "equilibrium" of forces of positive and negative damping and self-oscillations are set up.

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JPRS 59208
6 Dec 73

II-4. PHYSICOCHEMICAL ANALYSIS OF THE In-P-I_2 SYSTEM AND THE MORPHOLOGY OF INDIUM PHOSPHIDE CRYSTALS GROWN BY THE CHEMICAL GAS TRANSPORT REACTION METHOD

[Article by A. V. Sandulova, A. K. Zakirov, Ye. D. Dolgov, S. Neviak, M. M. Skoropad, L'vov: Novosibirsk, III Simpozium po Protsessam Rosta i Sinteza Poluprovodnikovykh Kristallov i Plenok, Russian, 12-17 June, 1972, p 14]

In this paper the authors have investigated the possibility of chemical processes taking place in the In-P-I_2 system. Studies were made of the basic reactions which can participate to one degree or another in the process of transport and crystallization of indium phosphide (InP).

The temperature dependence of the equilibrium constants of the postulated reactions in the temperature range of 600°K to 1200°K was calculated, and a physicochemical analysis was made of these reactions.

On the basis of the calculations, filamentary and platy InP crystals were grown which reached a length of 3-5 mm and 0.5 mm in cross section. The external faces of such crystals are perfect, mirror smooth.

It was established that the InP crystals grow in three basic crystallographic directions [111], [110], [211].

NEVIAK, S.

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MEDICINE
Burn Studies

USSR

UDC 616.5-001.17-097.2

KOLKER, I.I., VUL', S.M., and NEVINNAYA, A. P., Laboratory of Microbiology Institute of Surgery imeni A. V. Vishnevskiy, Academy of Medical Sciences USSR, Moscow

"Study of the Antigenic Structure of Burned Human Skin"

Moscow, Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya, Vol 14, No 5, Sep/Oct 70, pp 52-56

Abstract: A comparison was made of unexhausted antisera from burned and undamaged skin. Common antigenic components were identified in the burn scab, normak serum, skin, and other tissues of healthy persons. Diffusion precipitation in agar was used; water-soluble extracts served as antibodies. The optimum antibody concentration was 5-10 mg/ml. Solutions of bacteria isolated from the burn wounds were used as bacterial antibodies. Antibodies found in the burned human skin included varieties which are different from those found in the serum of normal skin. These varieties are not of a microbial nature and are not produced by bacteria occupying the burn wounds. It is probable that elements characteristic of inflammatory processes in the organism participate in the formation of these different antibody complexes.

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USSR UDC: 550.834

ZEMTSOV, Ye. Ye., NEVINNYY, A. V., Krasnodar Affiliate of the All-Union Scientific Research Institute of Geophysical Prospecting Methods

"A Method of Plotting Seismic Cross Sections"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 36, Dec 71, Author's Certificate No 322743, Division G, filed 23 Mar 70, published 30 Nov 71, p 154

Translation: This Author's Certificate introduces a method of plotting seismic cross sections by controlled directional reception with mapping of a background of reflecting elements with respect to a common velocity dependence for the profile. As a distinguishing feature of the patent, the accuracy of boundary determination is improved by correcting the velocity model of the cross section in accordance with the position of a conventional stratum and continuing the correction until a subsequent change in the velocity model alters the configuration of the conventional stratum. The plotting of the cross section is done with the use of a common velocity dependence for the profile, which is then corrected in accordance with the configuration of the resultant reflecting boundaries.

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USSR

UDC 541.183+669.245

NAYDICH, Yu. V., PEREVERTAYLO, V. M., and NEVODNIK, G. M., Institute of Problems of Material Science, Academy of Sciences UkrSSR

"Study of the Wettability of Graphite by Nickel in Connection With the Process of Carbon Solution in the Liquid Phase"

Kiev, Poroshkovaya Metallurgiya, No 1 (97), Jan 71, pp 58-61

Abstract: A study was made of the wettability in the system made up of graphite, nickel, and carbon melt as a function of the carbon concentration in the liquid phase from zero to equilibrium and also as a function of widely varying temperatures. The experimental procedure is described, and the results are discussed. By studying the concentration and temperature dependence of wettability of graphite by liquid nickel-carbon alloys in the trans-eutectic region, it was demonstrated that the degree of deviation of the system from equilibrium has a significant effect on wettability of the solid state. The quantitative nature of this relation was established. Wettability is appreciably higher in the nonequilibrium contact system than at equilibrium. Graphs are presented showing the contact wetting angles of graphite with nickel (I) and saturated Ni-C alloys in the trans-eutectic

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NAYDICH, Yu. V., et al, Poroshkovaya Metallurgiya, No 1 (97), Jan 71, pp 58-61

region as a function of temperature from 1,300 to 1,600°C, the concentration dependence of the wetting contact angle of graphite by nickel-carbon alloys at 1,250°C, and the relation of the degree of wettability to the deviation of the system from the equilibrium state. With an increase in carbon content in liquid nickel from zero to saturation (2.68 wt %), the values of the wetting contact angles increase from 49 to 115° at 1,550°C. Addition of carbon to ~1 wt % has practically no effect on the magnitude of the wetting angle, and only further addition of carbon in the melt causes a sharp increase in this angle. Thus, the high degree of wetting of graphite by nickel is caused by the process of carbon solution in the liquid metal under the effect of the difference in chemical potentials of the carbon in the solid and liquid phases in accordance with the general interpretation of such phenomena.

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USSR

UDC 539.3+534.231.1

NEVOLIN, L. P.

"Study of the Anisotropy of Elastic Wave Velocities on Two-Dimensional Models"

Uch. zap. Perm. un-t (Scientific Notes of Perm' University), 1972, No. 292, pp 91-97 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3V99)

Translation: Experimental studies using ultrasonic modeling methods were conducted to evaluate the effect of anisotropy on hodographs of reflected waves. Seismograms were obtained and phase hodographs of the reflected wave were constructed. A comparison of these with calculations shows good coincidence. It is shown that neglecting the anisotropy leads to a false representation of the reflecting surface. 10 ref. Author's abstract.

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1/3 011 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--BASIC PROBLEMS IN SOVIET EXPLORATION GEOPHYSICS -U-

AUTHOR-(03)-DYUKOV, A.I., NEVOLIN, N.V., FEDYNSKIY, V.V.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, SOVETSKAYA GEOLOGIYA, NO 4, APRIL 1970, PP 41-53

DATE PUBLISHED--------70

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CIRC ACCESSION NO--AP0126602

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AFTER A HISTORICAL REVIEW, THE FOLLOWING ASPECTS OF SOVIET EXPLORATION GEOPHYSICS ARE DISCUSSED: MAGNETIC PROSPECTING, GRAVIMETRIC PROSPECTING, ELECTRIC PROSPECTING, SEISMIC PROSPECTING, GEOPHYSICAL STUDIES IN BOREHOLES, NUCLEAR GEOPHYSICAL METHODS, COMPLEX INVESTIGATIONS OF THE EARTH'S CRUST AND UPPER MANTLE, REGIONAL GEOPHYSICAL INVESTIGATIONS, PROSPECTING FOR PETROLEUM AND GAS, AND MINERAL PROSPECTING. IN THE FUTURE THE GEOPHYSICISTS OF THE USSR MUST FOCUS ATTENTION ON THE FOLLOWING PROBLEMS: 1) COMBINING GEOPHYSICAL METHODS WITH DRILLING FOR INCREASING THE EFFECTIVE DEPTH AND ACCURACY OF GEOPHYSICAL INVESTIGATIONS IN STUDYING BASEMENT RELIEF IN PLATFORM AREAS AND DETERMINING THE LOWER STRUCTURAL STAGES OF THE SEDIMENTARY COVER, AS WELL AS FINDING LOW AMPLITUDE STRUCTURES IN LOWER PALEOZOIC AND UPPER PROTEROZOIC DEPOSITS OF THE RUSSIAN AND SIBERIAN PLATFORMS, DEVONIAN AND MORE ANCIENT DEPOSITS OF THE TIMANO-PECHORA PROVINCE, MESOZOIC-CENOZOIC DEPOSITS OF THE NORTHERN CAUCASUS, JURASSIC AND PERMIAN-TRIASSIC DEPOSITS OF CENTRAL ASIA, THE CASPIAN DEPRESSION, USTYURT, AND ELSEWHERE. 2) METHODS MUST BE IMPROVED FOR STUDYING SUBSALT DEPOSITS ON THE RUSSIAN AND SIBERIAN PLATFORMS AND IN CENTRAL ASIA. 3) THERE MUST BE A RADICAL TECHNICAL REEQUIPPING OF MARINE GEOPHYSICS TO BRING ABOUT IMPROVEMENTS IN THE EXPLORATION FOR PETROLEUM AND GAS ALONG THE SEA AND OCEAN SHORES OF THE USSR AND TO DISCOVER OFFSHORE DEPOSITS OF SOLID MINERALS.

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3/3 011 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0126602

ABSTRACT/EXTRACT--4) DEVELOPMENT OF A METHOD OF GEOPHYSICAL RESEARCH FOR DETAILED STUDY OF THE TECTONICS OF COALBEARING STRATA IN COAL FIELDS TO MAKE POSSIBLE PLANNING OF A COMPLETELY MECHANIZED SYSTEM FOR THEIR EXPLOITATION. 6) MUCH MORE EXTENSIVE USE MUST BE MADE OF SUCH METHODS AS INDUCED POLARIZATION AND TRANSIENT PROCESSES, HIGHLY PRECISE GRAVIMETRIC PROSPECTING AND ADVANCED TYPES OF SEISMIC PROSPECTING, TOGETHER WITH GEOCHEMICAL METHODS AT ALL STAGES OF MINERAL PROSPECTING AND EXPLORATION. 7) DEVELOPMENT OF METHODS FOR TAKING INTO ACCOUNT THE INHOMOGENEITY OF ROCKS AND OTHER FORMS OF INTERFERENCE WHICH REDUCE THE RELIABILITY OF DISCRIMINATION AND INTERPRETATION OF WEAK ANOMALIES CAUSED BY DEEPLY SEATED ORE BODIES; THIS WORK MUST BE DONE USING PETROPHYSICAL METHODS, MATHEMATICAL STATISTICS, THE THEORY OF GAMES AND ELECTRONIC COMPUTERS. EACH FORM OF GEOPHYSICAL PROSPECTING AND EXPLORATION IS EXAMINED RELATIVE TO ITS NEEDS DURING THE NEXT FEW YEARS.

FACILITY: ALL UNION SCIENTIFIC RESEARCH INSTITUTE OF GEOPHYSICS.

FACILITY: MARINE GEOLOGICAL PROSPECTING INSTITUTE.

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USSR

UDC 533.933

BYKOVSKIY, YU. A., DEGTYAREV, V. G., DEGTYARENKO, N. N., YELESIN, V. F, LAPTEV, I. D., NEVOLIN, V. N., Moscow Engineering-Physics Institute

"Kinetic Energies of Laser Plasma Ions"

Leningrad, Zhurnal Tekhnicheskoy Fiziki, Vol XLII, No 3, 1972, pp 658-661

Abstract: The mass-spectrometric method was used to study the ion composition and distribution of ions with different z with respect to energy in the last stage of dispersion of a substance. A transit time mass-spectrometer with an electrostatic analyzer was used in the experiments. A study was made of the maximum energy of the ions E_{max} of a laser plasma as a function of the radiation flux density in the range of $q \sim 10^8$-10^{11} watts/cm^2. The value of E_{max} was obtained as a function of the ion mass. The domain of weak dependence of $E_{max} = f(q)$ was detected in the 10^8-10^9 watts/cm^2 range. The integral spectrum was determined by the energy distributions of the ions with different charge. Values obtained for q_1, q_2 (the flux densities) and $\gamma_i \alpha$, α_1 ($N \sim q^{\alpha}$ where n is the total number of charged particles and $E_{max} \sim q^{\gamma_i}$) are tabulated for Be, Al, Ti, Cu, Nb and W. For bismuth with a flux density of $10^8 \leq q \leq 10^{11}$ watts/cm^2, no region of weak dependence of $E_{max} = f(q)$ was detected. This

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OVSKIY, YU. A., et al., Zhurnal Tekhnicheskoy Fiziki, Vol XLII, No 3, 1972, 658-661

,ees with the calculated values of q_1' and q_2' (the boundary values of the ra-iation flux density range of the gigantic laser pulse in which phase transi-.ion conditions exist).

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NEVOROTIN, V.K.

CONTROL RODS FOR FAST REACTORS WITH SODIUM COOLANTE

[Article by S. A. Kyznetsov, V. Ye. Melamed, F. K. Nevorotin, and V. V. Ponomarenko, Dimitrovgrad, Foglosh chavushchiye materialy i sterzhni regulirovaniya bystrykh reaktorov (Absorbing materials and control rods for fast reactors), Russian, International Working Group for Fast Reactors Specialists Meeting, Dimitrovgrad, 4-8 June 1973]

1. Introduction

In the practice of reactor construction, various methods of regulating the nuclear reaction occuring are known. The most widely distributed method for fast reactors with a sodium coolant is absorption of the neutrons by regulating rods. At the present time, this method is being used in reactors that have been built or are under construction: the BOR-60, BN-350 and BN-600 [1].

The basic functions of the regulating rod (control rods) of fast reactors are:

- compensation of temperature and power effects;
- compensation of burn-up;
- regulation of power;
- emergency stopping.

In distinction from water-cooled, water-moderated reactors, control rods of fast reactors have a number of principal features, associated with the specifics of the operating conditions in the reactor. All the control rods developed at the present time are intended for operation in a medium of liquid sodium in a temperature range of 400 -- 700°C at maximum fast neutron fluxes of up to 1 x 10^{16} n/cm² per second. The hard spectrum, high neutron fluxes and high temperatures, and the aggressive medium impose a number of specific requirements upon the materials of the control rods with respect to efficiency, permissible energy liberation and burn-up, physico-chemical properties, and radiation stability.

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NEVOSTRUYEV, V.A.

PROBLEMS OF THE RADIATION PHYSICAL CHEMISTRY OF IONIC CRYSTALS

(Conference in Riga)

[Article by Doctor of Chemical Sciences L. T. Bugayenko; Moscow, Vestnik Akademii Nauk SSSR, Russian, Vol 40, No 3, March 1970, pp 111-112]

An All-Union conference on the radiation physical chemistry of ionic crystals, organized by the Scientific Council for the Chemistry of High-Energy Particles of the AS USSR and the Institute of Physics of the AS Latvian SSR, was held in Riga on 9-12 December 1969. Participating in its work were specialists from many cities of the country. The conference's task was to examine from both the physical and the chemical points of view the entire complex of transformations arising under the effect of ionizing radiation in ionic crystals of different composition and structure. Two problems were mainly discussed: the mechanism of the formation and physicochemical properties of radiation defects of structure and the mechanism of radiolysis in radiation chemical processes in ionic crystals. Survey reports and a number of presentations were made on each of these problems.

Ch. B. Luchnik (Institute of Physics and Astronomy of the AS Estonian SSR) presented a report on the first problem in which a general survey was given of the elementary processes in the formation of point defects of structure (shift of ions in the crystal lattice, the formation of free atoms under the effect of radiation, ionic stabilized in the form of different centers of coloration, etc) in alkali-halogen crystals. The reporter examined in detail the subarticles of crystals consisting only of cations and only of anions, and not the lattice as a whole as has usually been done. Such a division permitted introduction of the concept of the mixing and interaction of defects arising in various sublattices, and on that basis explaining a number of radiation defects, including the formation of radiation crystallites and certain products of radiolysis.

Many years of investigation of structural defects in various compounds by the method of electron microscopy were generalized by G. I. Distler (Institute of Crystallography of the AS USSR). The author developed a method of decreasing (covering the investigated surface of an irradiated ionic crystal with contrasting materials), which makes it possible to observe superficial

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Lines with different charges. By means of that method, defects have been detected in irradiated crystals which have a Coulomb long-range effect which extends several thousands of angstroms; the topography of such defects is complex. It was shown that charged defects play an important role in all secondary processes.

K. K. Shvarts (Institute of Physics of the AS Latvian SSR) shed light on the problem of the formation of radiation colloids in alkali-halogen crystals. It was noted in the report that the dimensions of the colloidal particles are a function of the dose. For very large doses of the order of 10^4-10^5 gill/kg/cm the diameter of particles of the colloidal metal reach thousands of angstroms. Possible mechanisms of the formation, place of localization and structure of radiation colloids were discussed in the report.

The reports also dealt with such questions as the participation of particles having an excess energy ("hot" particles) in the formation of colored centers, the generation of various structural defects (including also those of colloidal metal) in alkali-halogen crystals, the process of radiation-stimulated diffusion leading to the appearance of new phase, the evolution of gaseous products from irradiated salts, the possibility of the application of chemical methods of investigating radiation defects in alkali-halogen crystals (chemical analysis of the products after dissolution, chemiluminescence during dissolution, and colorimetry), the role of ionic processes in processes of recombination, etc.

In the report of Yu. A. Zakharov and V. A. Nemotkinov (Tomsk Polytechnic Institute), devoted to the second problem, there was discussion of the contemporary state of the radiation chemistry of solid ionic salts, whose composition includes a complex anion. The presented experimental data dealt with perchlorates, chlorates, nitrates and azides of alkalies and some other metals. It was shown that the temperature, structure of the surface and charged surface defects substantially affect the processes of radiolysis, especially secondary ones. It was noted that the influence of linear losses of energy of ionizing radiation on radiation chemical processes is connected with radiation heating in the tracks of the ionizing particles and with reactions of recombinations of radiolytic products in the tracks and that not only homogeneous but also heterogeneous additives affect the secondary processes of radiolysis.

The possibilities of the method of electron paramagnetic resonance in studying the mechanism of the formation of radical products of the radiolysis of solid ionic compounds were illuminated in the report of A. G. Kocw (Physicochemical Institute Imeni L. Ya. Karpov). That method permits obtaining information on the chemical structure of the radicals, the places of their stabilization, their spatial distribution, the yields of formation and the kinetics of disappearance.

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USSR UDC: 8.74

YEFIMOV, Yu., KIZEV, V., LEVRAYEV, V., SEDEL'NIKOV, P.

"Algorithm and Program for Compilation of an Operative Calendar Plan on the 'Ural-11' Computer"

V sb. Elektronno-vychisl. tekhn. i programmir. (Electronic Computer Technology and Computer Programming--collection of works), vyp. 4, Moscow, "Statistika", 1971, pp 80-85 (from RZh-Kibernetika, No 1, Jan 72, Abstract No 1V1062)

Translation: The described automated system for operative control of a machine building enterprise under conditions of small-series, series and large-series production is based on the theory of graphs and set-theory concepts and, in the authors' opinion, has advantages over a number of existing systems. Authors' abstract.

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UDC: 519.1

USSR

YEFIMOV, Yu. N., KIZEV, V. I., NEVRAYEV, V. I., SEDEL'NIKOV, P. A.

"Concerning a Graph Enlargement Algorithm"

Izv. Tomsk. politekhn. in-ta, 1972, 223, pp 15-17 (from RZh-Kibernetika, No 7, Jul 73, abstract No 7V391 by I. Sigal)

Translation: The paper deals with the problem of transformation of an oriented graph with a large number of arcs and vertices, retaining all main parameters and mutual relations of the initial graph (the problem of enlargement). In the given graph $G=(I, \Gamma)$, where I is the set of vertices, and Γ is its mapping, the author indicates the set of vertices $I' \subset I$ to be excluded. For each vertex $i' \in I'$ a set of vertices is designated with which this vertex is associated (connected), and characteristics are assigned for all vertices of the designated set. Then for each vertex $i' \in I'$ a vertex i'_k is defined for which $i' \in \Gamma i'_k$, the connections of vertex i' are included in the connections of i'_k, and the connections of vertex i' are deleted from the graph. The parameters of the vertices are recalculated accordingly.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202210017-4

USSR

UDC: 519.1

YEFIMOV, Yu. N., KIZEV, V. I., MAROSHKIN, G. Yu., NEVRAYEV, V. I., SEDEL'-NIKOV, P. A.

"Using Graphs in Normative Calculation of the Production Cost of an Item"

Izv. Tomsk. politekhn. in-ta, 1972, 223, pp 10-11 (from RZh-Kibernetika, No 7, Jul 73, abstract No 7V390 by I. Sigal)

Translation: The paper deals with the problem of determining the production cost of a good. The problem consists in calculating indirect expenses, as well as expenses introduced by the elements which comprise the given product. The problem may be represented by an oriented graph, each vertex corresponding to some item i, while the arcs (i,j) of the graph correspond to the applicability of this item (good) i for obtaining product j into which these products i are incorporated as a component part. It is assumed that the vertices in this graph are broken up into layers (topologically ordered). To get the complete production cost, the expenses are calculated for each product j by adding the expenses with respect to the component products for all vertices of the graph from left to right.

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KHRUSTALEV, B. N., LEONOVICH, B. I., GUREVICH, YU. G., and NEVRAYEV, YU. P.

"Interactions in the Titanium Nitride-Magnesium Oxide System"

Moscow, Izvestiya Akademii Nauk SSSR, Neorganicheskiye Materialy, Vol 8, No 5, 1972, pp 846-848

Abstract: The solid-phase interaction in the system TiN-MgO is studied. The end product of this interaction is α-Ti_2O_3; the interaction occurs with the formation of an intermediate product, a TiO-MgO solid solution, which decomposes into α-Ti_2O_3. The coefficients of diffusion of titanium through the phases α-Ti_2O_3 and MgO are determined.

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USSR

MOROZOV, A. I., NEVROVSKIY, V. A., and SMIRNOV, V. A.

"Investigating Forced Oscillations of a Plasma Potential in an Accelerator With Closed Electron Drift"

Leningrad, Zhurnal Tekhnicheskoy Fiziki, No 3, 1973, pp 535-542

Abstract: It is noted that closed electron drift plasma accelerators with extended zones of ion acceleration are known in American science literature as linear Hall accelerators. The present paper gives the results of experimental work in the investigation of the response of the accelerator plasma to an external perturbing signal which is regular in time and is varied in frequency from 30 to 800 kHz. The following characteristic reactions of the plasma were noted in the experiments: the dependence of the amplitudes of the forced oscillations on the amplitude of the forcing signal and its frequency (the amplitude-frequency characteristic of the plasma space); the amplitude distribution of the signal in the accelerator channel; the phase delay of the harmonic signal in its passage through the plasma (the phase-frequency characteristic). A cross-sectional diagram of the experimental accelerator is given; its basic principle of operation was described in an earlier article

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MOROZOV, A. I., et al., Zhurnal Tekhnicheskoy Fiziki, No 3, 1973, pp 535-542

(G. Janes and J. Dotson, in the book Prikladnaya magnitnaya gidrodinamika -- Applied Magnetic Hydrodynamics -- "Mir," Moscow, 1965, p 235). The authors thank G. Ya. Shchepkin for his assistance in organizing the experiments, and Yu. V. Yesipchuk and A. M. Kapulkin for discussing the experimental results.

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USSR

MOROZOV, A. I., NEVROVSKIY, V. A., and SMIRNOV, V. A.

"Action in the Plasma Flow in a Closed Drift Accelerator System With Feedback"

Leningrad, Zhurnal Tekhnicheskoy Fiziki, No 3, 1973, pp 543-549

Abstract: In a closed drift accelerator system undesirable perturbations of the plasma parameters are observed. The purpose of the experiments described in this paper is to investigate the applicability of a simple feedback system for damping out these perturbations. The system consists of a device for sensing the perturbations, a band filter, a delay line, voltage and power amplifiers, and a control electrode. Circuits of the entire control system and the sensing device used to measure the ion current oscillations in the channel are given. The experiments done with this equipment are described, and oscillograms showing the effects on the plasma perturbations by the feedback system are produced. While complete suppression of the perturbations could not be realized, the experiments demonstrated that stabilization of the perturbations was possible.

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USSR

NEVSKAYA, A. A., Institute of Physiology imeni I. P. Pavlov, Academy of Sciences USSR, Leningrad

"Interaction Between Contours in Visual Masking"

Leningrad, Fiziologicheskiy Zhurnal SSSR, No 3, 1973, pp 401-406

Abstract: The purpose of the work was to study the effect of various masking stimuli on the recognition of images by six subjects. The test images were meaningless curvilinear figures so drawn that in any pair of figures one-third of the contour coincided while two-thirds were different. The masking stimuli were a light field of the same brightness as the background in the test stimuli, a network of random straight lines, combination of images, etc. Masking was found to be most effective when done by an image whose contours coincided with those of a test figure, but when other contours were present in the visual field, the masking effect of the coinciding contours diminished. The results contradict the theory that accounts for visual masking by integration of test and masking stimuli. The data are analyzed from the standpoint of inhibitory interactions in the areas corresponding to decreases in light and development of disinhibition upon the appearance of additional contours in the visual field.

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UDC: 612.351.11.014.46:576.097.29

USSR

ONCHAROVA, V. I., and NEVSKAYA, I. V., Division of Infectious Pathology and Experimental Therapy of Infections, Institute of Epidemiology and Microbiology imeni N. F. Gamaleya, Academy of Medical Sciences USSR, Morrow

"The Effect of Liver Tryptophan Oxygenase Activity on the Outcome of Intoxication Caused by Endotoxin"

Moscow, Byulleten' Eksperimental'noy Biologii i Meditsiny, Vol 70, No 12, Dec 70, pp 34-36

Abstract: To elucidate the role of hormonal and substrate induction of tryptophanoxygenase in the survival of mice poisoned by Salmonella typhi murium endotoxin, the animals were given various doses of cortisone and tryptophan. Cortisone (0.5 mg/kg) sharply increased the activity of the hormone in intact mice within 4 hours; in poisoned mice it maintained the normal tryptophanoxygenase activity and thereby enabled all of the animals to survive, whereas 50 to 70% of the controls died. Smaller doses of the hormone did not have this effect. Tryptophan (250 mg/kg or more) likewise maintained the normal level of activity of the enzyme, but it had no effect on the survival rate; some 50 to 70% of the animals died. Thus, substrate induction, unlike hormonal induction, is a pro-

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GONCHAROVA, V. I. and NEVSKAYA, I. V., Byulleten' Eksperimental'noy Biologii i Meditainy, Vol 70, No 12, Dec 70, pp 34-36

tective factor. An increased level of tryptophanoxygenase activity as such does not play an important role in the survival of mice poisoned by S. typhimurium endotoxin.

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UDC 615.31:547.861.37-012.1

USSR

PIS'KO, G. T., NEVSKAYA, T. L., GANUSHCHAK, N. I., BURYAK, V. S., BRUZDEV, A. I., KOSUBA, R. B., KUCHER, V. I., Chernovitskiy Medical Institute

"Synthesis and Pharmacologic Properties of New Derivatives of Piperidine"

Moscow, Khimiko--Farmatsevticheskiy Zhurnal, No 4, 1973, pp 14-17

Abstract: As a result of studying the relation between chemical structure and biological activity in a series of quaternary ammonia compounds, it was concluded [G. T. Pis'ko, "Chromotologic Properties Antimicrobic Effect of Derivatives of Ethylene- and Hexamethylemediamine," Doctor's Dissertation, Chernotsy Dnepropetrovsk, 1965; Farmakol o toksikol, No 5, 1970] that the basic role in the antimicrobic effect of these compounds belongs to the high-molecular alcohol radical which is joined by the ester bond to the quaternary nitrogen atom. A study was made of the synthesis and pharmacological properties of some new derivatives of piperidine containing high-molecular alcohol radicals. For synthesis of N-(4-phenyl-3-methylputene-2-yl-1)-N--carbalkoxymethyl piperidinium chlorides (I-X), the interaction of N-aryl-butenyl derivatives of pure piperidine and esters of monochloroacetic acid were used. On heating in dry diethyl ether, stable, highly water soluble compounds I-X were obtained with good yields.

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PIS'KO, G. T., et al., Khimiko-Farmatsevticheskiy Zhurnal, No 4, 1973, pp 14-17

The general effect and toxicity of the compounds were studied on white rats and white mice on intraperitoneal administration. The effects of the compounds on the arterial pressure, respiration and tonus of the third eyelid was studied in acute experiments on cats. Other experiments and the results are described. In studying the antimicrobic properties of the compounds the most sensitive turned out to be staphylococcus aureus and Candida albican fungus. The least sensitive were Vacilous coli, Proteus vulgaris Pseudomas Pyocyanea. When studying the relation between the chemical structure and the antimicrobic effect it was found that the activity appears for $R = 1CH_3$; then gradually increases and the maximum effect is observed for $R = C_9H_{19}$.

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MAMUSHCHAK, N. I., PISHKO, G. T., BURYAK, V. S., KUCHER, V. I., NIKOLAYCHUK, N. A., KARPINOVSKAYA, R. B., [redacted] and ZAPOROZHETS, V. I.; Chernovtsy University

"Synthesis and Certain Biological Properties of Piperidine Derivatives"

Moscow, Khimiko-Farmatsevticheskiy Zhurnal, Vol 5, No 9, 1971, pp 8-14

Abstract: Piperidine derivatives have a wide range of biological action, and many of them are now used in medical practice. However, the biological action depends largely upon the nature of the substituten introduced, both at the nitrogen atom, and at the carbon atoms of the peridine ring. Meanwhile, those compounds substituted with fatty-aromatic radicals at the nitrogen atom which have multiple carbon-carbon bonds have been very little studied. The authors studied 23 members of this group to determine their biological action on test animals (cats, white mice), and to determine basic physico-chemical properties. Increased toxicity, effect on blood pressure, and strengthened heart bicmovements were observed in most cases. Data obtained are analyzed in tabular form.

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