"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202320012-7

1/2 013 UNCLASSIFIED PROCESSING DATE--09OCT70

TITLE--EFFECT OF THE R SUB3 SI GROUP ON THE CHEMICAL STRUCTURE OF SILICON SUBSTITUTED ALKOXYACETYLENES AND KETENES -U-

AUTHOR-(04)-LAZAREV, A.N., TENISHEVA, T.F., SHCHUKOVSKAYA, L.L., PALCHIK, R.I.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 190(5), 1106-8

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ORGANOSILICON COMPOUND, ACETYLENE, KETONE, CARBONYL RADICAL, MOLECULAR ORBITAL, DIPOLE MOMENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1992/2025 STEP NO--UR/0020/70/190/005/1106/1108

CIRC ACCESSION NO--AT0112980

UNCLASSIFIED

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202320012-7

2/2 013 UNCLASSIFIED PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AT0112980

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE FOLLOWING VALUES WERE CALCD. FROM SPECTRAL DATA FOR RR PRIME1 C:CO RESP. FOR INDICATED RR PRIME1 (CARBONYL BOND FORCE CONST. (X 10 PRIME6 CM PRIME NEGATIVE2), C:C BOND FORCE CONST., SUMMARY POLAR TAFT CONST. GIVEN): H, H, 26.95, 14.3, 0.98; ME, ME, 26.47, 14.65, 0; ME SUB3 SI, H, 25.22, 14.8, MINUS 0.23; AND ME SUB3 SI, ME SUB3 SI 23.24, 16.27, MINUS 1.44. THE VALUES OF FORCE CONSTS. WERE SIMILARLY CALCD. FROM SPECTRA OF HC TRIPLE BOND COME AND ME SUB3 SIC TRIPLE BOND COME, RESP., FOR INDICATED BONDS: R-C 10.88, 5.8, C TRIPLE BOND C 26.3, 25.0; TRIPLE BOND C-O 13.6, 13.6; AND OC(H SUB3) 8.0, 7.2. THE APPARENT DIFFERENCE IN THE EFFECT OF THE ME SUB3 SI GROUP IN ALLENES AND ACETYLENES INDICATES A GREATER ENERGETIC ADVANTAGE IN THE CASE OF ACETYLENES OF THE ELECTRON ACCEPTANCE AT THE D ORBITALS OF SI TO YIELD A FORMAL STRUCTURE SUCH AS SI PRIME NEGATIVE:C:C:O POSITIVE IN COMPARISON WITH A SIMILAR PROCESS IN THE ALLENES. THE INDICATIONS AGREE WITH EARLIER DIPOLE MOMENT DATA.

FACILITY: INST. KHIM. SILIKAT. IM. GREBENSHCHIKOVA, LENINGRAD, USSR.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202320012-7

USSR UDC 539.3+629.12.01:531

PAL'CHIKOV, O. I., Kaliningrad

"Asymptotic Estimation of Stress Concentration Along Dents"

Problemy Prochnosti, No 10, 1971, pp 32-37.

Abstract: The purpose of this work is to determine the asymptotes for possible maximum stress concentrations next to dents in the form of a thin spherical segment and elongated dents depending on their placement relative to the direction of external force, and also with mutual influencing of dents. The problem is solved approximately using methods suggested by the author for determination of the maximum value of stress concentration. The methods used are based on the idea that the influence of reenforcement consisting of a thin shell in the area of any point around an aperture can be evaluated with accuracy sufficient for engineering purposes if we know the perturbation to the stress state of a shell similar in curvature and thickness and located at a certain point with a similar level of stress.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202320012-7

1/2 022 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--ON FLIGHT OSCILLATIONS OF ELECTRONS IN A MAGNETIC TRAP -U-

AUTHOR-(03)-VOLOSOV, V.I., PALCHIKOV, V.YE., TSELNIK, F.A.

COUNTRY OF INFO--USSR

SOURCE--LENINGRAD, ZHURNAL TEKHNICHESKOY FIZIKI, VOL 40, NO. 1, JAN 70, PP 134-137

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--MAGNETIC TRAP, PLASMA ELECTRON OSCILLATION, PLASMA INSTABILITY, MAGNETIC MIRROR, PLASMA DECAY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1411 STEP NO--UR/0057/70/040/001/0134/0137

CIRC ACCESSION NO--AP0125050

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202320012-7"

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2/2 022 UNCLASSIFIED

CIRC ACCESSION NO--AP0125050 PROCESSING DATE--27NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ACCUMULATION AND CONFINEMENT OF FAST ELECTRONS UP TO 100 KEV IN A MAGNETIC TRAP WERE STUDIED. OSCILLATIONS ASSOCIATED WITH THE OSCILLATING MOTION OF ELECTRONS BETWEEN MAGNETIC MIRRORS WHICH LIMIT THE DENSITY OF THE HOT PLASMA WERE THE BASIC TYPE OF INSTABILITY OBSERVED IN THE EXPERIMENT. SEVERAL FEATURES OF THESE OSCILLATIONS ARE DESCRIBED AND A QUALITATIVE EXPLANATION OF THE RESULTS IS PROPOSED. THE EXPERIMENTS WERE CONDUCTED IN A MAGNETIC TRAP OF DIAMETER 40 CM AND LENGTH 130 CM (THE DISTANCE BETWEEN MIRRORS). THE MAGNETIC FIELD WAS STATIONARY AND VARIED FROM 100 TO 300 OE AT THE CENTER. IN PRACTICALLY ALL EXPERIMENTS OSCILLATIONS WERE OBSERVED WITH A FREQUENCY 20-30 MHZ, WHICH IS CLOSE TO THE OSCILLATION FREQUENCY OF FAST ELECTRONS BETWEEN THE MAGNETIC MIRRORS. THE OSCILLATION FREQUENCY WAS INDEPENDENT OF THE MAGNETIC FIELD, THE DENSITY OF THE TRAPPED FAST ELECTRONS, AND THE DENSITY OF THE COLD PLASMA AND NEUTRAL GAS. THE OSCILLATIONS WERE OBSERVED BOTH DURING THE INJECTION PULSE AND DURING THE DECAY OF THE PLASMA FOR A SUFFICIENTLY LOW PLASMA DENSITY, SO THAT THE AMPLITUDE OF THE OSCILLATIONS DROPPED SLOWLY WITH TIME. LOW FREQUENCY OSCILLATIONS WITH A FREQUENCY OF 200-500 KHZ WERE OBSERVED SIMULTANEOUSLY WITH THE HIGH FREQUENCY OSCILLATIONS. THIS FREQUENCY COINCIDES IN ORDER OF MAGNITUDE WITH THE DRIFT FREQUENCY OF ROTATION OF THE PLASMA IN THE MAGNETIC TRAP.

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USSR

VOLOSOV, V. I., PAL'CHIKOV, V. Ye., TSEL'NIK, F. A.

UDC 533.95

"On Flight Oscillations of Electrons in a Magnetic Trap"

Leningrad, Zhurnal Tekhnicheskoy Fiziki, Vol 40, No 1, Jan 70, pp 134-137

Abstract: The accumulation and confinement of fast electrons up to 100 kev in a magnetic trap were studied. Oscillations associated with the oscillating motion of electrons between magnetic mirrors which limit the density of the hot plasma were the basic type of instability observed in the experiment. Several features of these oscillations are described and a qualitative explanation of the results is proposed. The experiments were conducted in a magnetic trap of diameter 40 cm and length 130 cm (the distance between mirrors). The magnetic field was stationary and varied from 100 to 300 oe at the center. In practically all experiments oscillations were observed with a frequency 20-30 MHz, which is close to the oscillation frequency of fast electrons between the magnetic mirrors. The oscillation frequency was independent of the magnetic field, the density of the trapped fast electrons, and the density of the cold plasma and neutral gas. The oscillations were observed both during the injection pulse and during the decay of the plasma for a sufficiently low plasma density, so that the amplitude

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USSR

VOLOSOV, V. I., et al., Zhurnal Tekhnicheskoy Fiziki, Vol 40, No 1, Jan 70, pp 134-137

of the oscillations dropped slowly with time. Low-frequency oscillations with a frequency of 200-500 kHz were observed simultaneously with the high-frequency oscillations. This frequency coincides in order of magnitude with the drift frequency of rotation of the plasma in the magnetic trap.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202320012-7

USSR

UDC 669.71.053.4(088.8)

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BAZHENOV, A. YE., GRECHUKHIN, N. V., OSOKINA, V. K., PAL'CHIKOVA, A. I., PAL'CHIKOVA, T. A., TARASOV, I. A., FEDORTSOV, V. D., CHALIK, A. D., CHERNOV, V. Ye

"Method of Obtaining Cryolite"

USSR Author's Certificate No 312834, filed 3 Mar 70, published 15 Oct 71 (from RZh--Metallurgiya, No 4, Apr 72, Abstract No 4G179P)

Translation: The procedure for obtaining cryolite by roasting the slurry at 700-800° formed as a result of wet removal of the gases in aluminum production is distinguished by the fact that in order to improve the quality of the product, the roasted slurry is subjected to water treatment at 35-40° with a L:S ratio of 5-10: 1 with subsequent leaching out of the precipitate by a 2-10% solution of HF at 55-75° with a L:S ratio of 3-10:1. An example is presented.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202320012-7

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UDC 669.71.053.4(088.8)

BAZHENOV, A. YE., [illegible], N. V., OSOKINA, V. K., BAL'CHIKOVA, A. I., BAL'CHIKOVA, T. A., [illegible], I. A., [illegible], V. D., CHALIK, A. D., [illegible], V. Ye.

"Method of Obtaining Cryolite"

USSR Author's Certificate No [illegible], filed 3 Mar 70, published 15 Oct 71 (from [illegible] Apr 72, Abstract No 4G179P)

Translation: The procedure for obtaining cryolite by roasting the slurry at 700-800° formed as a result of wet removal of the gases in aluminum production is distinguished by the fact that in order to improve the quality of the product, the roasted slurry is subjected to water treatment at 35-40° with a L:S ratio of 5-10: 1 with subsequent leaching out of the precipitate by a 2-10% solution of HF at 55-75° with a L:S ratio of 3-10:1. An example is presented.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202320012-7

USSR

UDC 681.327

RAZUMNYY, V. T., BALANDIN, G. P., PAL'CHINSKIY, V. F.

"Device for Controlling the Power Supply and for the Control of a Digital Computer"

Patent No. 327483 (1327286/18-24 from 5 May 1969), Class G 06f 15/46, G 01r 31/28, announced by the Institute of Mining Mechanics and Technical Cybernetics imeni M. M. Fedorov (from Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No. 5, 1972, p 141)

Abstract: A device for the control of the power supply, memory capacitors, and the circuit for controlling emergency operations and automatic starting of a computer and a coincidence circuit are described; they are distinguished by the fact that in order to raise control reliability the memory capacitors in it are connected with the input circuits for observing the loss of power. The outputs of these circuits are connected to the inputs of the coincidence circuits, and the output of the coincidence circuit is connected with the circuits for controlling emergency operations and automatic startup of the computer.

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Welding

USSR

UDC 621.791.053.002.612:658.386

BOTINOV, S. N., KAZENNOV, YU. I., AGAPOVA, N. P., PALICHUK, N. YU. (Candidates of Technical Sciences), PROKHOROV, V. I., REVIZNIKOV, L. I., BOBYLEV, A. P., KRASINA, T. A., KRYLOV, YE. A., BALASHOV, V. D. ZINKOVSKIY, V. I., SYCHEV, R. S. (Engineers)

"Effect of Irradiation on the Properties of Welds of High-Alloy Steels and Alloys"

Moscow, Svarochnoye Proizvodstvo, No 3, Mar 70, pp 4-6

Abstract: The effect of neutron irradiation on the short-term mechanical properties of basic metals and welds from 00Kh16N15M3B, 0Kh16N15M3B, and 0Kh20N40B austenitic steels and 1Kh132BFR ferrite-martensite steel was investigated. The mechanical properties were determined on samples cut in the longitudinal direction from argon-arc welds using an infusible electrode. The samples were irradiated in the active zone of a reactor at about 100°C. The theoretical neutron flux density was 10^{15} neutron/cm^2, sec. Some samples received a dose of 2.8×10^{21} neutron/cm^2, while others received a dose of 4.3×10^{21} neutron/cm^2. The mechanical properties were determined on UMD-5 tensile testing machines at air temperatures of 20,350, and 650°C.

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USSR

BOTINOV, S. N. et al, Svarochnoye Proizvodstvo, No 3, Mar 70, pp 4-6

Tests conducted at 20°C showed that strength properties of all samples increased after irradiation; plasticity decreased. The tensile and yield strengths of weld metals with an austenitic structure increased to a lesser degree than those of the base metals. The mechanical properties of all samples at 350° did not differ from those of the base metals. A decrease in tensile and yield strength with a simultaneous decrease in plasticity was observed in samples with an austenitic structure in tests conducted at 650°C. These decreases were especially noticeable in irradiated samples made from 40% Ni steel. The possible cause of the sharp decline in the intergrain strength and plasticity observed at 650°C in the irradiated metal with high nickel content is suggested. Orig. art. has: 2 figures, 4 tables, and 5 references.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202320012-7

1/2 042 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--THE EFFECT OF IRRADIATION ON THE PROPERTIES OF WELDS IN HIGH ALLOY STEELS -U-

AUTHOR-(05)-VOTINOV, S.N., KAZENNOV, YU.I., AGAPOVA, N.P., PALCHUK, N.YU., PROKHOROV, V.I.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, SVAROCHNOYE PROIZVODSTVO, NO 3, 1970, PP 4-6

DATE PUBLISHED--------70

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

TOPIC TAGS--HIGH ALLOY STEEL, ALLOY DESIGNATION, MECHANICAL PROPERTY, BIBLIOGRAPHY, IRRADIATION, NUCLEAR METALLURGY, WELD JOINT, METAL TEST, WELDING/(U)OKH16N15M3B STAINLESS STEEL, (U)00KH16N15M3B STAINLESS STEEL, (U)OKH20N40B STAINLESS STEEL, (U)1KH13M28FR STAINLESS STEEL, (U)UMD5 STAINLESS STEEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1999/1303 STEP NO--UR/0135/70/000/003/0004/0006

CIRC ACCESSION NO--AP0123262

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202320012-7

2/2 042 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0123262

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MECHANICAL PROPERTIES WERE DETERMINED OF SAMPLES CUT OUT FROM THE METAL OF WELDS IN 00KH16N15M3B, 0KH16N15M3B, 0KH20N40B, AND 1KH13M2BFR STEELS FOLLOWING IRRADIATION WITH A DOSE OF 2.8 TIMES 10 PRIME21 NEUTR,CM PRIME2 AND 4.3 TIMES 10 PRIME21 NEUTR,CM PRIME2 (E LARGER THAN OR EQUAL TO 1 MEV) AT A TEMPERATURE OF ABOUT 100DEGREESC. TESTS WERE CARRIED OUT USING UMD-5 BREAKING MACHINES AT 20, 350, AND 650DEGREESC IN THE AIR.

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AA0043487

UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent,

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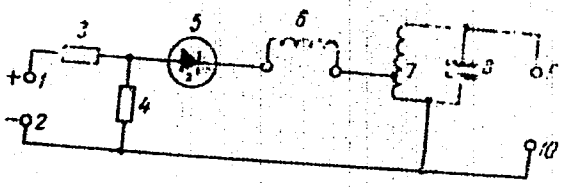
240032 GENERATOR OF HARMONIC FREQUENCIES. The circuit has been designed on a tunnel diode. The innovation is that the tunnel diode has been connected to the oscillating circuit through an additional inductive coil. The inductance of the coil depends on the resonant frequency of the oscillating circuit. 17.5.67. as 1158410/26-9. A.S. PALCHUN. (18.8.69.) Bul.12/21.3.69. Class 21a4. Int.Cl. H03b.



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Acc. Nr: AP0049032

Ref. Code: UR0607

PRIMARY SOURCE: Vestnik Otorinolaringologii, 1970, Nr 1, pp 74-80

ELECTRONYSTAGMOGRAPHY IN PATIENTS WITH OTOSCLEROSIS

V. T. Palchun, Ye. I. Petrova (Moscow)

Summary

In experimental caloric stimulation of the labyrinth the authors recorded electronystagmograms (ENG) in 100 patients with otosclerosis before the operation and 1—5 years later in 60 patients after stapedoplasty for the purpose of elucidating the general regularities of the influence of the otosclerotic process on the function of the vestibular apparatus. Besides, the reaction of the labyrinth to the operative trauma was studied by recording the ENG during the first minutes after the operation in 60 patients without experimental stimulation of the labyrinth. On the basis of ENG analysis the authors singled out three types of functional state of the labyrinth in otosclerosis: 1) close to normal (21% of patients), 2) reduced sensitivity or hyporeflexia (64%), 3) augmented sensitivity of the labyrinth or hyper-reflexia (15%). Apart from the usual criteria of nystagmus curves the authors distinguish the following: 1) intermittent type and 2) a type

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of curve with nonuniform amplitude. An intermittent type of ENG is characterized by a frequent appearance of areas without fluctuations; the authors called them nystagmus pauses. ENG with a nonuniform amplitude has separate, often repeated oscillations, the amplitude of which exceeds other. A presumptive explanation of these phenomena is given. An analysis of the material obtained during studies of the labyrinthine state directly after stapedoplasty confirmed the fact that the operative trauma of the labyrinth is the lesser, the more careful the operation is performed; during the first two weeks of the postoperative period acute reactions of the labyrinth to the operation disappear and the function of the vestibular apparatus on the operated side normalizes within a year.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202320012-7

USSR

UDC: 638.61

BUDOVSKIY, I. I., MAKOSEVSKIY, V. V., MELISHCHUK, I. S., REZNITSKIY, M. S., SOLOMKO, A. A., TRON'KO, V. D., PALEICHUK, M. R., Kiev State University

"A Meter for Determining High-Frequency Power Transmission With the Use of a Laser Signal"

Moscow, Pribory i Tekhnika Eksperimenta, No 3, May/Jun 72, pp 110-112

Abstract: The paper describes an instrument for measuring high levels of power passing through transmission lines which operate in the 10 kHz - 30 MHz range. The meter is shown schematically in Fig. 1a. A laser beam with wavelength $\lambda = 1.15\ \mu$ passes successively through electro-optical and magneto-optical crystals of GaAs and $Y_3Fe_5O_{12}$ located between polarization prisms P_i. The relative intensity of the laser signal at the output of the optical system is $S/S_0 = [A - B(1 - \cos\Delta\varphi)][1 + \cos 2\delta]$, where $A = \frac{1}{2}\cos^2(\alpha - \beta)$, $B = \frac{1}{4}\sin 2\alpha 2\beta$; $\Delta\varphi = \Delta\varphi_0 + \Delta\varphi_V$, $\Delta\phi_0$ is the phase shift which is independent of the field, $\Delta\phi_V$ is the phase delay induced by the electric field, $\delta = \gamma + \Delta\phi_I$, $\Delta\phi_I$ is the rotation of the polarization plane of the optical beam determined by the Faraday effect and dependent on the current in the magnetizing system, γ is the angle between polarization prisms P_2 and P_3, α and β are the angles

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202320012-7

between the axis x_1 of the GaAs crystal and polarization prisms P_1 and P_2. Angles α, β and γ are illustrated in Fig. 1b.

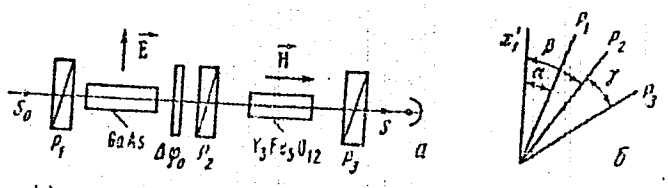

Fig. 1: a--schematic of the power meter; b--relative orientation of the polarizers.

A diagram of the power meter is shown in Fig. 2. The unit is a section of coaxial channel with wave impedance of 75 Ω with rectangular inner conductor 4 fastened between washers 2. Crystals of GaAs 6 and $Y_3Fe_5O_{12}$ 7 are fastened to inner conductor 4 at right angles to each other. The crystals measure 2 × 2 mm in cross section. The GaAs crystal has a 45° cut which acts as a rotating mirror. Conductive cement is used to fasten electrode 5 to

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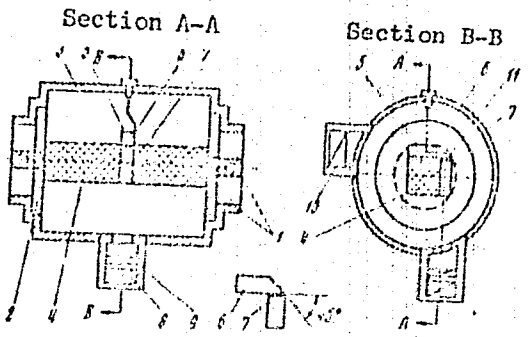
"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202320012-7

USSR

BUDOVSKIY, I. I. et al., Pribory i Tekhnika Eksperimenta, No 3, May/Jun 72, pp 110-112

the top of the GaAs crystal. The electrode is connected to the outer conductor 3. The central polarizer P_2 is a polaroid film 11, cemented between two crystals. Polarization prisms 10 and 8, as well as ¼-wave plate 9, are used for the necessary adjustment. The meter is connected to the coaxial channel by means of rf disconnects 1.



3/4 Fig. 2. Simplified diagram of the power meter.

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USSR

BUDOVSKIY, I. I. et al., Pribory i Tekhnika Eksperimenta, No 3, May/Jun 72, pp 110-112

(3)

A study of the frequency response of the meter showed a sharp drop in the band above 600 kHz. This is caused by a temperature increase due to losses from high hysteresis impedance. This impedance is appreciably reduced by placing the $Y_3Fe_5O_{12}$ crystal in a transverse magnetic field. The optimum field strength was found to be close to 500 oersteds.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202320012-7

USSR

UDC 621.317.757:621.391.822

KUDABA, V. YE., PALENSKIS, V. I., KALITIS, R. I., BRAZDZHYUNAS, P. P.

"Spectral Analysis of Current Noise"

Liet. fiz. rinkinys, Lit. fiz. sb. (Lithuanian Physics Collection), 1970, Vol 10, No 4, pp 593-607 (from RZh-Radiotekhnika, No 4, Apr 71, Abstract No 4A275)

Translation: A device for spectral analysis of current noise in the 0.01 Hertz to 10 megahertz range is described. The correlation method of analysis on a computer is used in the infralow frequency range (0.01-1 Hertz). The errors in calculating the correlation function and spectral density as a function of the length of the realization were estimated. Low-noise high-frequency and low-frequency preamplifiers have been developed. A cascade cathode repeater was used at high frequencies to amplify the total input impedance. Stable narrow band amplifiers of the RC and LC type were developed. There are 10 illustrations and a 9-entry bibliography.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202320012-7

USSR

UDC 620.193.01

PALEOLOG, Ye. N., FEDOTOVA, A. Z., and DERYAGINA, O. G., Academy of Sciences USSR, Institute of Physical Chemistry

"Kinetics of Reduction-Oxidizing Reactions on TiO_2 and NiO Single Crystals and on the Oxidized Surface of Metals"

Moscow, Zashchita Metallov, Vol 9, No 2, Mar-Apr 73, pp 176-178

Abstract: The distribution of interfacial differences of potentials on passive Ni and Ti surfaces was determined on the basis of previously measured kinetic parameters of reduction-oxidizing reactions on surfaces of Ni and Ti, of their compact oxides, and of platinum. TiO_2 single crystals were produced by the Vernouil method and treated in vacuum at 750°; NiO single crystals were alloyed with lithium. The potentiostatic anodic oxidation of Ni and Ti shows a principally different mechanism. The logarithmic oxidation rule of Ti is for Ni realized at the potential φ=0.30 v. At more positive potentials (0.5 and 0.7 v), the growth of the film follows the logarithmic rule only in the beginning; later on it changes to the parabolic type. The differences in the oxidation mechanism and kinetics of Ni and Ti meet the evaluation results of the potential distribution in the systems. Two figures, six bibliographic references.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202320012-7

USSR

UDC 537.533.35

IVANOVA, K. N., PALETOV, A. M., SAVITSKIY, YE. M., and IGNATOV, D. V.

"Nature and Distribution Characteristics of Carbide Phases in Aged Niobium Alloys as Revealed by Electron Microscopy"

Moscow, Fizika i Khimiya Obrabotki Materialov, No 1, Jan/Feb 73, pp 106-111

Abstract: Aging of RN-6S alloy (5% W, 5% Mo, 1% Zr, and 0.1% wt% C) at 1000°C for 5 hours produced mainly Nb_2C with an hexagonal crystal lattice and zirconium carbide which upon closer examination under the electron microscope appeared as (Zr,Nb)C with a face-centered cubic lattice. When aging at 1000°C was increased to 25 hours, more (Zr,Nb)C phase was formed as laminar inclusions with a well defined orientation in the matrix and to some extent along the grain boundaries. Aging at 1100°C for 25 hours produced more oriented inclusions of the (Ar,Nb)C phase while the large particles of the Nb_2C phase remained along the grain boundaries. When aging at 1100°C was extended to 50 hours, Nb_2C inclusions disappeared almost completely from the grain boundaries while the (Zc,Nb)C phase coagulated along the grain volume and its dispersed inclusions coagulated along the grain boundaries. A further coagulation of the (Zr,Nb)C phase and its nonuniform distribution was observed in the same alloy aged at 1100°C for 100 hours. Only an insignificant amount of the Nb_2C

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202320012-7

USSR

IVANOVA, K. N., et al, Moscow, Fizika i Khimiya Obrabotki Materialov, No 1, Jan/Feb 73, pp 106-111

phase was left in this case. The observed structural changes in the RN-6S alloy produced by aging resulted in changes of the mechanical properties at room temperatures. The appearance of the (Zr,Nb)C phase increased the alloy strength and the yield point, while coagulation of this phase decreased these properties. Formation of inclusions along grain boundaries free from carbides after aging at 1100°C for 25 hours decreased somewhat the plasticity of the alloy compared with the hardened state. Lead quenching of the RN-6S alloy from 2000°C after 3 hour exposure at this temperature showed that the Nb_2C phase is much more stable at 1700°C, while the (Zr,Nb)C phase is more stable at 1000-1100°C.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202320012-7

USSR

PALETS, B. L.

UDC 8.74

"Digital Model of the Cardiovascular System"

V sb. Biol., med. kibernet. i bionika (Biological and Medical Cybernetics and Bionics -- collection of works), Kiev, 1971, pp 159-170 (from RZh-Kibernetika, No 9, Sep 72, Abstract No 9V690)

No abstract

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202320012-7"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202320012-7

USSR

AMOSOV, N. M., LISHCHUK, V. A., PALETS, B. L., PATSKINA, S. A., YERMAKOVA, I. I., LYABAKH, Ye. G.

"Algorithmic Support of a Model of the Internal Sphere of an Organism"

Upr. i Inform. Protsessy v Zhivoy Pripode [Control and Information Processes in Living Nature -- Collection of Works], Moscow, Nauka Press, 1971, pp 178-182, (Translated from Referativnyy Zhurnal, Kibernetika, No 3, 1972, Abstract No 3 V594 by V. Mikheyev).

Translation: Requirements are studied for a system of algorithmic support of the model of the "internal sphere" of an organism for realization by digital computer. The most important are the following: 1) the model must have a modular structure with the minimum number of global variables; 2) all modules of the model should be described in the same language; 3) great independence (in the sense of programming) of individual modules from each other and from the system as a whole is possible; 4) good controlability of the program realizing the model; 5) the program should have wide possibilities for contact with the operator during the process of computation; 6) self-improvement of the model during operation. The modules of the general model of the "internal sphere" of the organism are the cardiovascular system, the temperature control system, the respiration control system, the system for

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202320012-7

AMOSOV, N. M., LISHCHUK, V. A., PALETS, B. L., PATSKINA, S. A., YERMAKOVA, I. I., LYABAKH, Ye. G., Upr. i Inform. Protsessy v Zhivoy Pripode, Moscow, Nauka Press, 1971, pp 178-182.

self-regulation of local blood circulation, the regulation of water and salt metabolism and the central nervous control system. Mathematical models are presented for the system of regulation of blood flow through the skeletal musculature and the system for temperature control in the organism. It is noted that programs have been created on their basis for machine realization in the input language BESM-ALGOL. A special "control" program is called for, allowing printout of all variables of interest to an investigator in digital or graphic form, as well as calculation of a number of arbitrary quantities for the model (mean values, integral estimates, etc.).

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202320012-7

1/2 011 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--EFFECT OF THE HYDROLYSIS OF SODIUM CARBONATE ON THE FOAMING OF BOILER WATER -U-

AUTHOR-(02)-PALETSKIY, D.L., KUZNETSOV, N.V.

COUNTRY OF INFO--USSR

SOURCE--PROM. ENERG. 1970, 25(1), 50-2

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--STEAM BOILER, CARBONATE, SODIUM HYDROXIDE, SOLUTION ACIDITY, HYDROLYSIS, FOAM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/1424 STEP NO--UR/0094/70/025/001/0050/0052

CIRC ACCESSION NO--AP0135098

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202320012-7"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202320012-7

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UNCLASSIFIED

CIRC ACCESSION NO--AP0135098 PROCESSING DATE--13NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TO EXPLAIN THE GREATER FOAMING OF BOILER WATER CONTG. NA SUB2 CO SUB3 WITH RESPECT TO THAT CONTG. NAOH, THE PH AND COND. OF BOILING WATER CONTG. NA SUB2 CO SUB3 AND NAOH WERE DETD. IN A SPECIALLY DESIGNED APP. AT VAPOR PRESSURE UP TO 15 MN-M PRINE2. UNDER EXPTL. CONDITIONS THE HYDROLYSIS OF NA SUB2 CO SUB3 IS NOT COMPLETE. THUS, GREATER FOAMING OF BOILER WATER CONTG. NA SUB2 CO SUB3 CAN BE EXPLAINED BY THE PRESENCE OF CO SUB3 PRIME2NEGATIVE IONS WHICH STRENGTHEN CONSIDERABLY THE STRUCTURE OF VAPOR BUBBLE FILM.

FACILITY: ROSTOV.-NA-DONU INST. INZH. ZHELEZNODOROZH. TRANSP., ROSTOV-ON-DON, USSR.

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202320012-7"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202320012-7

1/2 035 UNCLASSIFIED PROCESSING DATE--11DEC70

TITLE--TESTING OF THE PLASTIC COATING ON METAL SURFACES OF APPARATUS -U-

AUTHOR-(03)-LUKACH, YU.YE., PALEVSKIY, V.V., GONCHARENKO, V.V.

COUNTRY OF INFO--USSR

P

SOURCE--KHIM. PROM. UKR. 1970, (2), 48-50

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--PLASTIC COATING, ELECTRIC PROPERTY, EPOXY RESIN, METAL CONTAINING POLYMER, NICKEL, CURING AGENT, METAL COATING, TEST METHOD

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3005/0038 STEP NO--UR/0436/70/000/002/0048/0050

CIRC ACCESSION NO--AP0132333

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202320012-7"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202320012-7

2/2 035 UNCLASSIFIED

CIRC ACCESSION NO--AP0132333 PROCESSING DATE--11DEC70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. GREEN EPOXY ENAMEL E-5, FILLED WITH 43-66PERCENT NI DUST AND CURED WITH 10PERCENT H SUB2 N(CH SUB2) SUB6 NH SUB2 SOLN. IN ALC., WAS READILY DEPOSITED BY SPRAYING ON LAB. APP. THE HARDENED COATING (AT 85-120DEGREES) HAD GOOD ELEC. PROPERTIES.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202320012-7

1/2 021

UNCLASSIFIED

TITLE--ELECTRICAL DRIVING MECHANISM COMPOSED OF STANDARD UNITS -U-

PROCESSING DATE--11DEC70

AUTHOR--PALEY, A.B.

COUNTRY OF INFO--USSR

SOURCE--ASTRONOMICHESKII VESTNIK, VOL. 4, APR.-JUNE 1970, P. 133-135

DATE PUBLISHED--------70

SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR., NAVIGATION

TOPIC TAGS--TELESCOPIC EQUIPMENT, ELECTRIC MOTOR, ELECTRONIC AMPLIFIER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----FD70/605013/002 STEP NO--UR/0454/70/004/000/0133/0135

CIRC ACCESSION NO--AP0140390

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202320012-7"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202320012-7

2/2 021 UNCLASSIFIED

CIRC ACCESSION NO--AP0140390 PROCESSING DATE--11DEC70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DESCRIPTION OF AN ELECTRICAL TELESCOPE DRIVING MECHANISM COMPOSED OF UNIFIED UNITS OF AN AUDIO REFERENCE OSCILLATOR, AN ELECTRONIC POWER AMPLIFIER, AND A SYNCHRONOUS ELECTRIC MOTOR. RECOMMENDATIONS FOR SELECTING THESE UNITS AND FOR ASSEMBLING THE DRIVING MECHANISM ARE PROPOSED. FACILITY: VSESOIUZNOE ASTRONOMO-GEODEZICHESKOE OBSHCHESTVO; IVANOVSKII GOSUDARSTVENNYI PEDAGOGICHESKII INSTITUT, IVANOVO, USSR.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202320012-7

USSR

SHAPOVALOV, V.P., PALEY, V.M.

UDC 621.382.3

"Step-By-Step Fusion Of The Base Of Alloy-Type Germanium Transistors"

Elektron. tekhnika. Nauchno-tekhn. sb. Poluprovodn. pribory (Electronic Technology. Scientific-Technical Collection. Semiconductor Devices), 1970, No 1(51), pp 116-120 (from RZh--Elektronika i yeye primeneniye, No 12, December 1970, Abstract No 12B186)

Translation: The step-by-step fusion is investigated of the base of alloy-type germanium triodes with the effect of a series of short pulses between the emitter and collector leading to overstress of the transistor. It is shown that the delivery of each pulse leads to an increase of the local depth of fusion of the base at the most vulnerable point of the fusion front of the p-n junction. The variation factor of the fusion front of the p-n junction γ is introduced. The dependence is determined of the quantity of voltage pulses necessary for complete breakdown of the structure, on the value γ. An assumption is expressed concerning the possibility of using the magnitude γ for rejecting potentially unreliable alloy-type transistors. 7 ref. Summary.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202320012-7

Acc. Nr. AP0045791 — Abstracting Service: CHEMICAL ABST. 4/70

Ref. Code: NE 0000

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79136s Action of halogens upon Grignard and Iotsich reagents. Zakharkin, L. I.; Gavrilenko, V. V.; Pajei, B. A. (Inst. Org.-Elem. Compounds, Moscow, USSR). J. Organometal. Chem. 1970, 21(2), 269-72 (Eng). Chlorination of Grignard and Iotsich reagents RMgX (where X = Br, I) gives considerable amts. of RI and RBr together with RCl. Bromination of RMgI results in RI and RBr. Bromination of RMgCl leads to RBr, and iodination of RMgX(X = Cl, Br), to RI. A method is proposed for the prep. of RC:CCl by the reaction of Cl with RC:CMgCl.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202320012-7

USSR

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UDC 547.785.5'741

KOCHERGIN, P. M., SHEYNKER, YU. N., DRUZHININA, A. A., PALEY, P. M. and ALEKSEYEVA, L. M., All Union Scientific Chemical-Pharmaceutical Institute Imeni S. ORDZHONIKIDZE, Moscow

"Studies in the Imidazole Series. LVIII. Debenzylation of N-Benzyl-substituted 1H-Pyrrolo [1,2-a]imidazole and 4H-Pyrrolo [1,2-a]benzimidazole"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 6, Jun 71, pp 826-830

Abstract: Debenzylation of N-benzylsubstituted 1H-pyrrolo-[1,2-a] imidazole and 4H-pyrrolo [1,2-a]benzimidazole by the action of sodium in liquid ammonia was studied. Using IR and NMR spectral analysis it was shown that the products are derivatives of 7H-pyrrolo-[1,2-a]imidazole and 3H-Pyrrolo[1,2-a]benzimidazole. Debenzylation of 2,3-diphenyl-4-benzylpyrrolo[1,2-a]benzimidazole takes place with concurrent reduction of the pyrrole ring forming 1H-2,3-dihydro-2,3-diphenylpyrrolo[1,2-a]benzimidazole, m.p. 193-194°.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202320012-7

1/2 020 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--ION EXCHANGE SEPARATION OF SMALL AMOUNTS OF SILICIC ACID FROM OTHER ELEMENTS FOR ITS PHOTOMETRIC DETERMINATION -U-

AUTHOR-(03)-NEMODRUK, A.A., PALEY, P.N., BEZROGOVA, YE.Y.

COUNTRY OF INFO--USSR

SOURCE--ZH. ANAL. KHIM. 1970, 15(2), 319-23

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ION EXCHANGE RESIN, PHOTOMETRIC ANALYSIS, SILICON COMPOUND, INORGANIC ACID, CHEMICAL SEPERATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1993/0677 STEP NO--UR/0075/70/025/002/0319/0323

CIRC ACCESSION NO--AP0113548

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202320012-7"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202320012-7

2/2 020 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0113548

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ALPHA SILICIC ACID PASSES COMPLETELY THROUGH COLUMNS PACKED WITH CATION EXCHANGERS OR WITH WEAK BASE ANION EXCHANGERS DURING ITS SEPN. FROM OTHER ELEMENTS IN THE ABSENCE OF THE POLYMERIC FORMS OF SILICIC ACID AND CAN BE DETD. QUANT. IN THE FILTRATE. IN THE PRESENCE OF POLYMERIC FORMS (BETA AND GAMMA) THE ALPHA FORM CONCN. IN THE FILTRATE IS CONSIDERABLY OVERESTD., PARTIALLY DUE TO CONVERSION OF THE POLYMERIC FORMS TO THE ALPHA FORM DURING THE ION EXCHANGE PROCESS. ION EXCHANGE CANNOT BE USED FOR THE SEPN. OF SILICIC ACID FROM OTHER ELEMENTS DURING THE DETN. OF ITS TOTAL CONTENT BECAUSE THE POLYMERIC FORMS ARE MOSTLY DETAINED BY THE ION EXCHANGERS. THUS IT IS NECESSARY TO CONVERT ALL FORMS TO THE ALPHA FORM PRIOR TO PASSAGE THROUGH THE ION EXCHANGE COLUMN BY HEATING THE SOLN. WITH AN EXCESS OF NAOH. DIL. AN ALIQUOT CONTG. 10,500 UG SI IN A TEFLON FLASK TO 10ML WITH H SUB2 O, NEUTRALIZE WITH A 20PERCNET NAOH TO PH 2, 3, AND THEN ADD ANOTHER 3 ML 20PERCENT NAOH AND BOIL FOR 30 MIN. COOL POUR DROPWISE INTO 2 ML HNO SUB3 WHILE MIXING, NEUTRALIZE WITH 2N NAOH TO PH 1, DIL. WITH H SUB2 O TO 20 ML AND PASS AT A RATE OF 0.25 ML-MIN THROUGH A COLUMN FILLED WITH KU-2 OR DOWEX 50X8 (H POSITIVE FORM). WASH THE COLUMN WITH 20 ML H SUB2 O INTO THE FILTRATE. DIS. THE FILTRATE TO 50 ML WITH H SUB2 O AND DET. SI IN AN ALIQUOT CONTG. 4, 50MUG SI.

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Luminescence

USSR

5

UDC 543.70

ANTKINA, L. I., BAGREYEV, V. V., DOBROLYUBSKAYA, T. S., BOLOTOV, Yu. A., KARYAKIN, A. V., NIKLTSHANSKIY, A. Z., NIKITINA, N. G., PAREY, P. N., YAKOVLEV, Yu. V.

"Luminescent Determination of Gadolinium, Europium and Samarium as Impurities in Metallic Uranium"

Moscow, Zhurnal Analiticheskoy Khimii, Vol XX, No 7, pp 1014-1018

Abstract: A quantitative luminescent method of analyzing gadolinium, europium and samarium impurities in metallic uranium is described. A large part of the uranium was separated by a chromatographic method, passing uranyl sulfate in 1 N H_2SO_4 through a column with KaU-2 cation-exchanger. The rare-earth element impurities remaining in the column were washed out by 4-5 N HCl. It was established photometrically with the application of arsenazo III that an unacceptable high amount of uranium (~ 0.04 percent from a weighed sample of 10 grams of uranyl sulfate) was washed into the eluate, making necessary the development of additional methods for separation and determination of the rare-earth elements. Luminescent methods were then used. Gadolinium, europium and samarium in metallic uranium were analyzed by the radiation spectra of luminophors based on Y_2O_3 for gadolinium and YVO_4 for europium and samarium. The rare-earth elements were concentrated chromatographically, and the luminescence was spark-excited. A phosphoroscope was used to measure the spectra. The sensitivity of analyzing

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202320012-7

gadolinium, europium and samarium was $2 \cdot 10^{-6}$ percent, and the variation factor was 30 percent. The method permits quantitative determination of the indicated rare-earth elements from a weighed sample of up to 1 gram of uranium. As a control, the additive method was used. Gadolinium, europium and samarium were introduced in the amounts of $2 \cdot 10^{-5}$ and $5 \cdot 10^{-5}$ percent after decomposition of the metal uranium by nitric acid. An analysis flow chart and sample luminescence spectra are given in the article.

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202320012-7"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202320012-7

Nuclear Science and Technology

USSR

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KARALOVA, Z. K., PALEY, P. N., IVANOV, R. N., GABESKIRIYA, V. YA., and PYZHOVA, Z. I.

"Investigation of Protactinium and Uranium Accumulation by Thermal Neutran Irradiation of Th^{230} and Th^{232}"

Moscow, Akademiya Nauk SSSR, Atomnaya Energiya, Vol 28, No 3, Mar 70, pp 199-201

Abstract: An investigation was made to determine the accumulation of protactinium and uranium isotopes, and the burn-up of thorium isotopes during the irradiation of specimens with an isotope ratio $Th^{230}/Th^{232} = 1.462$ by a 1×10^{15} neutron/cm^2 · sec flux of thermal neutrons. The experimental procedure and technique are described in detail. It is shown that 3.5% of the original Th^{230} was transformed into Pa^{231} by the irradiation of the thorium specimen with a 1.462 isotope ratio for 10 periods of 24 hours each by a 1×10^{15} neutron/cm^2 · sec flux of thermal neutrons. The isotope ratio Th^{232}/Th^{230} increased from 1.464 to 1.557, which is connected to the more rapid burn-up of Th^{230} than of Th^{232}. The effective radiation capture cross sections of Th^{230}, Pa^{231}, and U^{232}, calculated from the experimental data are 78.5± 12, 280, and 170 barns, respectively. The obtained results were used to calculate the Pa^{231} accumulation for a given

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USSR

KARALOVA, Z. K. et al, Atomnaya Energiya, Vol 28, No 3, Mar 70, pp 199-201

Th^{230} in suspension as a function of integral neutron flux. The maximum Pa^{231} yield at a 1×10^{15} neutron/cm^2 . sec thermal neutraon flux density after 100 effective periods of 24 hours was about 26%. Orig. art. has: 3 figures, 1 table, and 4 references.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202320012-7

USSR

UDC 543.422.25:546.740'785.5

ALEKSEYEVA, L. M., DVORYANTSEVA, G. G., PERSIANOVA, I. V., SHEYNKER, YU. N., PALEY, R. M., and KOCHERGIN, P. M., All Union Scientific Chemical-Pharmaceutical Research Institute imeni S. Ordzhonikidze, Moscow

"Protonization of the Derivatives of Pyrrolo/1,2-a/benzimidazole"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 8, Aug 72, pp 1132-1137

Abstract: Protonization of a series of pyrrolo/1,2-a/benzimidazole derivatives in trifluoroacetic acid has been studied by PMR method. The 1,3-unsubstituted compounds protonize exclusively on the C_1 atom. Pyrrolobenzimidazoles with a methyl substituent on position 1 form a mixture of two protonized forms under identical conditions, corresponding to the addition of a proton to C_1 and C_3 respectively. Relative content of the C_3 protonized form decreases gradually from 81% to 18% going from a compound unsubstituted in position 3 to the respective 3-phenyl- and 3-methyl derivatives. Basicity constants of pyrrolobenzimidazoles decrease symbatically with the increase of the relative content of this form. Relative proton acceptor capability of indolizine, pyrrolo/1,2-a/imidazole and pyrrolo/1,2-a/benzimidazole has been calculated from the protonization data and from indexes of reactivity.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202320012-7

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UDC 547.491.8

USSR

KUKHAR', V. P., BUKOVSKII, M. I., KASHEVA, T. N., PALEYCHUK, V. S., PETRASHENKO, A. A., SOLODUSHENKOV, S. N., Institute of Organic Chemistry, Academy of Sciences Ukrainian SSR

"Phosphazo-1,3,5-triazines. IV"

Leningrad, Zhurnal Obshchei Khimii, Vol 40, No 6, Jun 70, 1226-1229

Abstract: 2-Azido-4,6-dimethoxy(phenoxy)-1,3,5-triazines easily react with tertiary phosphines and trialkyl phosphites to form 2-phosphazo-4,6-dimethoxy (phenoxy)-1,3,5-triazines. The reaction is exothermic and is completed within 10-15 min. Triphenyl phosphite reacts less rapidly. Tertiary phosphines react easily with azides of diaminotriazines to form 2-phosphazo-4,6-diamino-1,3,5-triazines. The phosphazo compounds are colorless crystals which readily dissolve in alcohol, acetone, methanol, but which are insoluble in water and hexane. They are hydrolyzed in boiling water or in 1N hydrochloric acid. The basicities of the compounds were determined in nitromethane and recalculated to the corresponding values in water. All these compounds were found to be weak bases. Presence of amino or alkylamino groups in the molecule raises the basicity by 3-4 units.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202320012-7

UDC 632.95

USSR

MIL'GROM, A. Ye., and PALEYEV, B. B.

"A Method of Synthesizing Derivatives of N,N'-Dialkylamidines Containing the 1,3-Dioxane Ring"

USSR Authors' Certificate No 256781, filed 19 Sep 68, published 11 Jun 70 (from RZh-Khimiya, No 3, 10 Feb 71, Abstract No 3N622 P)

Translation: The physiologically active compounds 2-MeC(-NR)N(R)CH_2- and 4-MeC(=NR)N(R)CH_2-dioxanes-1,3 (I and II) (R = alkyl) are synthesized by interacting N,N'-dialkylamidine with 2- or 4-BrCH_2-1,3-dioxane (IIIa, b). A mixture of 0.03 mole of IIIa and 0.06 mole of N,N'-dimethylacetamidine is heated for 8 hours at 110-120°C. Then the mixture is filtered, the residue is washed in absolute ether, the filtrate is dried, and the residue is distilled in a vacuum. The resultant product is compound I (R = Me), yield 75%, boiling point 110°C/2, $n^{20}D$ 1.4805, d_4^{20} 1.046. Compound II is analogously synthesized from IIIb and N,N'-dimethylacetamidine (R = Me), yield 64%, boiling point 105°/2, $n^{20}D$ 1.4739, d_4^{20} 1.016.

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1/2 040 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--EXPERIMENTAL STUDY OF ISOTHERMAL TURBULENT FLOW IN A RECTANGULAR CHANNEL WITH BLOWING ON ONE SIDE -U-

AUTHOR-(03)-PALEYEV, I.I., AGAFONOVA, F.A., DYMANT, L.N.

COUNTRY OF INFO--USSR

SOURCE--MINSK, IZVESTIYA VYSSHIKH UCHEBNYKH ZAVEDENIY, ENERGETIKA (NEW OF HIGHER EDUCATIONAL INSTITUTIONS, ENERGETICS), 1970, NO 1, PP 65-70

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--FLOW PROFILE, TURBULENT FLOW, FLOW VELOCITY, ENERGY SPECTRUM, WAVE NUMBER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1982/0550 STEP NO--UR/0143/70/000/001/0065/0070

CIRC ACCESSION NO--AT0052021

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2/2 040 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AT0052021

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. RESULTS ARE PRESENTED OF MEASUREMENTS OF THE LONGITUDINAL AVERAGED AND PULSATION VELOCITY PROFILES OF TURBULENT FLOW AT SEVERAL SECTIONS OF A RECTANGULAR CHANNEL FOR MODERATE BLOWING THROUGH THE POROUS LOWER WALL. A METHOD FOR CALCULATING THE AVERAGE LONGITUDINAL VELOCITY IS PROPOSED ON THE BASIS OF THE EMPIRICAL RELATIONS OBTAINED. RESULTS ARE PRESENTED OF A SPECTRAL ANALYSIS OF THE LONGITUDINAL PULSATION VELOCITY IN THE FORM OF THE DEPENDENCE OF THE ENERGY SPECTRAL FUNCTION PSI ON THE WAVENUMBER K.

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USSR UDC 021.36:538.4

AREF'YEV, K. M., and PALEYEV, I. I. (deceased)

"Principles of Thermoelectronic and Magneto-Hydrodynamic Energy Conversion"

Osnovy Termoelektronnogo i Magnito-Gidrodinamicheskogo Preobrazovaniya Energii [English Version Above], Moscow, Atomizdat Press, 1970, 215 pp

Translation of Introduction: The liberation of heat accompanies such processes as combustion, nuclear reactions, and the absorption of radiant energy. Thermoenergy is the energy of chaotic motion of the molecules of which a substance consists. Many industrial processes require thermoenergy, but electrical energy is most convenient, easily transported, and converted to other forms.

The method of conversion of thermoenergy to electrical energy involving a boiler, steam turbine, and electric machine generator (or gas turbine and generator, or engine and generator) is widely known and generally used. The turbine or engine contains rotating or reciprocating parts which are subjected to significant mechanical loads. These parts cannot operate (withstand loads) at high temperatures which can be reached by non-moving, unloaded parts, which are also easier to cool. Due to the insufficiently

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AREF'YEV, K. M., and PALEYEV, I. I. (deceased), Oxnovy Termoelektronnogo i Magnito-Gidrodanimecheskogo Preobrazovaniya Energii, Moscow, Atomizdat Press, 1970, 215 pp

high initial temperatures, the efficiency of large steam turbine thermo-power stations generally does not exceed 40-42%, even in the best models. It can be increased by 2-3% by improving equipment and improving operation. Significant increases in efficiency can be achieved only by great increases in the initial temperature of the working fluid.

Higher initial temperatures can be used with plasma methods of direct conversion of thermoenergy to electrical energy: the magneto-hydrodynamic and thermoelectronic (thermo-emission) methods. In the magneto-hydrodynamic method, the thermoenergy is first converted to the kinetic energy of a stream of electrically conducting gas (plasma), moving in a strong magnetic field. As the plasma cuts the magnetic lines of force, and electromotive force is induced in it, as in the windings of an ordinary machine generator, causing an electrical current to flow in the external circuits. As we see, the magnetohydrodynamic method is not in the true sense a method of direct conversion of thermoenergy to electrical energy. It should more properly be called a machineless method of production of electric energy, since no

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AREF'YEV, K. M., and PALEYEV, I. I. (deceased), Oxnovy Termoelektronnogo i Magnito-Gidrodanimecheskogo Preobrazovaniya Energii, Moscow, Atomizdat Press, 1970, 215 pp

machine electric generator is required. However, the energy conversion is performed in a single device, immediately after liberation of heat and heating of the gases. There are no rotating or moving parts, and the initial temperatures are high (up to 2,500°K and higher). This results in increased efficiency. The temperature of the gases leaving the magneto-hydrodynamic generator must still be high, since otherwise the gases lose their conductivity. If the heat of these gases, is used, for example, in a steam generator (steam boiler and turbine), gas turbine, etc., high efficiency for the entire combined unit can be achieved. Thus, as published materials show, the efficiency of thermoelectric stations can be increased by approximately 10%.

In the thermoelectronic method, electric current is produced by emission of electrons from a cathode heated to high temperatures. The voltage in the external circuit arises due to the difference in the work functions of the cathode and anode--the contact potential difference. The thermoelectronic

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AREF'YEV, K. M., and PALEYEV, I. I. (deceased), Oxnovy Termoelektronnogo i Magnito-Gidrodanimecheskogo Preobrazovaniya Energii, Moscow, Atomizdat Press, 1970, 215 pp

method, like the magneto hydrodynamic method, can be used to convert nuclear energy to electrical energy.

The interelectrode gap in a thermoelectronic converter is generally filled with plasma-ionized cesium vapors. The plasma is also used in magneto-hydrodynamic generators. The operation of the two types of plasma converters has a great deal in common: the same processes occur, thermoelectronic emission, ionization, etc. However, there are also significant differences: in the magneto-hydrodynamic generator, the plasma moves in a magnetic field, and electromagnetic induction is used; in the thermoelectronic generator, the magnetic field and motion of the plasma are absent. In this book, we study thermoelectronic and magneto-hydrodynamic generators in consideration of the specific features of their operation.

The book is designed to provide a preliminary familiarization with the problem as a whole; many problems (particularly physical problems) are not presented with sufficient completeness and strictness; the design data on

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AREF'YEV, K. M., and PALEYEV, I. I. (deceased), Osnovy Termoelektronnogo i Magnito-Gidrodanimecheskogo Preobrazovaniya Energii, Moscow, Atomizdat Press, 1970, 215 pp

converters, detailed information on experimental results of their operation, etc., are omitted. The purpose of the book is to present the general concepts of the operation of plasma power converters in brief form.

The bibliography presented in the book is by no means complete, since a large number of works on problems of thermoelectronic and magneto-hydrodynamic energy conversion, plasma physics, etc., have been published recently. The flow of information increases continually. Therefore, the results of many investigations are presented in this book only as illustrations.

The book is divided into two sections. The first section analyzes the operation of thermoelectronic generators, while the second section studies magneto-hydrodynamic generators. Readers interested only in the second section should familiarize themselves first with Chapters I and IV from the first section. These Chapters study problems of thermoelectronic emission, ionization of gases, and plasma physics.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202320012-7

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1/2 022 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--DETERMINATION OF THE ENERGY OF THE ELECTRON AFFINITIES OF ANTIMONY AND BISMUTH ATOMS BY MEANS OF THE SURFACE IONIZATION METHOD, APPLICABLE

AUTHOR-(02)-ZANDBERG, E.YA., PALEYEV, V.I.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 190(3), 562-4

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--ELECTRON ENERGY, ANTIMONY, BISMUTH, SURFACE IONIZATION, SILVER, VAPOR STATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1984/0293 STEP NO--UR/0020/70/190/003/0562/0564

CIRC ACCESSION NO--AT0055086

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2/2 022 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AT0055086

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A METHOD IS DESCRIBED FOR DETG. THE ELECTRON AFFINITY ENERGY, S, FOR ELEMENTS WITH A COMPLEX VAPOR COMPN. BY MEANS OF THE SURFACE IONIZATION OF 2 ELEMENTS WHEN S IS KNOWN FOR ONE OF THEM. THE METHOD WAS USED TO DET. S FOR SB AND BI BY USING AG AS THE OTHER ELEMENT (S SUBAG EQUALS 2.0 I. BAKULINA, ET AL. 1951). S VALUES FOR SB, BI, AND IN ARE 1.50, 1.76 AND 0.8-1.1 V, RESP.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202320012-7

1/2 025 UNCLASSIFIED PROCESSING DATE--02OCT70

TITLE--USE OF LASYX (FURZEMID) IN RENAL EDEMA -U-

AUTHOR-(02)-PALEYEVA, F.M., MAKAROVA, N.A.

COUNTRY OF INFO--USSR

SOURCE--TERAPEVTICHESKIY ARKHIV, 1970, VOL 42, NR 3, PP 83-87

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--KIDNEY, EDEMA, NEPHRITIS, PROTEINURIA, BLOOD PLASMA, SODIUM, POTASSIUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1986/0817 STEP NO--UR/0504/70/042/003/0083/0087

CIRC ACCESSION NO--AP0102779

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2/2 025 UNCLASSIFIED PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0102779

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHROS INVESTIGATED THE CLINICAL EFFICACY AND THE MECHANISM OF ACTION OF THE DRUG IN 68 PATIENTS WITH RENAL DISEASES AMONG WHOM 49 SUFFERED FROM DIFFUSE GLOMERULONEPHRITIS, 4 WITH PYELINEPHRITES, 4 WITH RENAL POLYCYSTOSIS, 6, AMYLOIDOSIS, 2 HYDRONEPHROSIS, 3 DIABETIC GLOMERULOSCLEROSIS. 12 PATIENTS HAD RENAL INSUFFICIENCY OF DIFFERENT DEGREE. PROTEINOURIA FLUCTUATED FROM 33 TO 29PERCENT. TOTAL BLOOD PROTEIN WAS ESPECIALLY SHARPLY REDUCED IN 5 PATIENTS (3.2-3.3 GPERCENT). 30 PATIENTS SUFFERED FROM HYPERTENSION WITHIN THE RANGE OF 140-100-220-130 MM HG. A GOOD DIURETIC EFFECT WAS SEEN IN 61 PATIENTS. EDEMA COMPLETELY DISAPPEAPED IN 42 PATIENTS. IN GLOMERULAR FILTRATION LOWER THAN 10 ML-MIN THE USE OF LASYX WAS ALMOST INEFFECTIVE, AS WELL AS IN ACUTE HYPOPROTEINEMIA. NATRIURESIS APPEARED TO BE MOSTLY MARKED. POTASSIUM EXCRETION WITH THE URINE WAS PRACTICALLY UNCHANGEABLE WHICH WAS ALSO CONDUCIVE TO AN INCREASE OF THE SODIUM-POTASSIUM RATIO IN THE URINE. CONCENTRATION OF SODIUM AND POTASSIUM IN THE BLOOD PLASMA UNDERWENT NO SUBSTANTIAL CHANGES. TUBULAR REABSORBTION OF SODIUM AND WATER DROPPED WHEREAS POTASSIUM REABSORBTION ROSE. THE GLOMERULAR FILTRATION OF WATER AND SODIUM INCREASED IN MOST OF THE PATIENTS. A DROP OF THE ARTERIAL PRESSURE LEVEL WAS OBSERVED ONLY 6 PATIENTS OUT OF 30.

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USSR

UDC: 620.172.2

VEKSLER, Yu. G., SOROKIN, V. G., PALEYEVA, S. Ya., Sverdlovsk

"Study of Short-Term Creep In High-Speed Air Streams Considering Variable Loadings Resulting From Vibration"

Kiev, Problemy Prochnosti, No 11, 1970, pp 74-77

Abstract: The short-term creep of type OT4 titanium alloy is studied at 500°C under a loading of 8 kg/mm^2. The short-term creep of VZH98 heat-resistant alloy is also studied at 1000°C with a loading of 4 kg/mm^2 in a nonmoving air medium and in a high-speed stream. The influence of the velocity of the stream and angle of attack on short-term creep of the alloys is studied. It is determined that an increase in the velocity of the air stream from M = 0.94 to M = 1.6 for specimens of OT4 alloy at 500°C and from M = 0.7 to M = 1.6 for specimens of VZH98 alloy at 1000°C causes an acceleration of creep and a decrease in the total time to rupture as a result of the increase in the corrosion-erosion influence of the stream. The deformation at rupture is decreased by 2-2.5 times in comparison with tests in nonmoving air. An increase in the angle of attack at constant velocity (M = 0.94) accelerates creep as a result of the increase in the mean static value of the stress component.

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Organ and Tissue Transplantation

USSR

PALIGOV, K. A.; ZARAYSKIY, A. A.; Chair of Traumatology and Orthopedics, Alma Ata Medical Institute, and Department of Orthopedics, East Kazakhstan Oblast Hospital

"Grafting Compact-Cancellous Homotransplants Preserved in Argon to Noninfected Bone Bed"

Alma Ata, Zdravookhraneniye Kazakhstana, No 4, 1971, pp 35-38

Abstract: Compact-cancellous homotransplants preserved for 1 to 6 months in argon were used to fill defects surgically created in the tibias of 5- to 6-month-old rabbits. As a control, similar experiments were performed with frozen and lyophilized homografts. Histological and X-ray studies of the repair processes showed that they proceeded at approximately the same tempo in both series of experiments. After 6 months the defects were replaced with new tissue indistinguishable from surrounding healthy bone.

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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

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202320012-7

2/2 018 UNCLASSIFIED PROCESSING DATE--30OCT70

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: 08/09/2001 CIA-RDP86-00513R002202320012-7

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

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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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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: 08/09/2001 CIA-RDP86-00513R002202320012-7"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202320012-7

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: 08/09/2001 CIA-RDP86-00513R002202320012-7"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202320012-7

1/2 021 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--FORMATION OF RING SPHERULITES UNDER THE INFLUENCE OF PERIODIC TEMPERATURE CHANGES -U-

AUTHOR-(02)-TEITELBAUM, B.YA., PALIKHOV, N.A.

COUNTRY OF INFO--USSR

SOURCE--VYSOKOMOL. SOEDIN., SER. B 1970, 12(1), 3-4

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--SPHERULITE, POLYETHYLENE, ADIPATE, CRYSTAL GROWTH, MICROSCOPY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1986/0256 STEP NO--UR/0460/70/012/001/0003/0004

CIRC ACCESSION NO--AP0102306

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202320012-7"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202320012-7

2/2 021 UNCLASSIFIED

CIRC ACCESSION NO--AP0102306 PROCESSING DATE--18SEP70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE FORMATION OF RING SPHERULITES IN POLY(ETHYLENE ADIPATE) (I) MELTS WAS OBSD. BY POLARIZED LIGHT MICROSCOPY. THE RADIAL ORIENTATION TOWARDS THE RING CENTER OF THE CRYSTG. I WAS ALSO OBSD. THE CRYSTAL GROWTH RATE IS INVERSELY PROPORTIONAL TO THE HEAT OF CRYSTN. EVOLUTION AT THE PERIMETER OF GROWING CRYSTALS.

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202320012-7"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202320012-7

USSR

SHCHEVELEV, YU. S., PALILOV, V. N., and BAYANOV, M. A., Sverdlovsk Scientific Research Institute of the Timber Institute

"Suspension for Track Rollers of a Tracked Vehicle"

USSR Authors' Certificate No 356190, Cl. B 62d 55/16, filed 9 Mar 70, published 23 Oct 72 (from Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 32, 1972, p 57)

Abstract: 1. The suspension contains longitudinal levers, each of which is securely mounted on a horizontally arranged axis hinged to a side member of the tracked vehicle, and elastic elements which interact with stops which are motionless with respect to the axes. To improve the roadability of the tracked vehicle, the stops are made separate from the suspension levers, are positioned between the side members and arranged on the axis of each lever with angular displacement of one from the other.

2. Suspension as above, whose distinguishing feature is that the levers are made of two parts which are female to the track rollers, while the lever axes are hinged to the side flanges of the side members, which are female to the suspension levers.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202320012-7

USSR

Fluid Dynamics

UDC 517.9:532

BORISOV, V. M., MARKOV, V. G., PALILOVA, S. F., Moscow

"On the Steady-State Motion of a Uniformly Dense Suspension in a Tube"

Moscow, Zhurnal Vychislitel'noy Matematiki i Matematicheskoy Fiziki, No. 3, May/Jun 71, pp 738-745

Abstract: The steady-state one-dimensional motion of uniformly dense suspensions is considered. The suspension is considered as a continuous medium, the state of which at each point under steady-state motion is characterized by three variables: the concentration of particles, the velocity, and the effective viscosity. The effective viscosity is defined as the proportionality coefficient between the amount of energy E dispersed in a unit volume per unit time and the second invariant deformation velocity vector of the medium. The analysis is based on a maximum principle of the dispersed energy in steady-state motion. The assumption is not made that the flow of the suspension satisfies the Navier-Stokes equations with an effective viscosity. The more natural use of a maximum principle for dissipation made it possible to make an analogy with the familiar Helmholtz principle for slow flows of a viscous incompressible fluid. It is shown that layering

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202320012-7

USSR

BORISOV, V. M., et al, Zhurnal vychislitel'noy matematiki i matematicheskoy fiziki, No. 3, May/Jun 71, pp 738-745

of the suspension occurs in all cases. The rate of entrainment of the column of the solid phase formed is obtained for the case of a wall effect. It is pointed out that the model used applies when the flow of the suspension is essentially one-dimensional.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202320012-7

Instruments and Methods

USSR

PALIN, A. V.

"Improved Method of Measuring the Impedance of a Biological Object"

Moscow, Voprosy Mediko-Biologicheskikh Issledovaniy. Materialy Konferentsii Molodykh Nauchnykh Rabotnikov Mediko-Biologicheskogo Fakul-teta (Aspects of Biomedical Research. Materials of a Conference of Young Scientific Workers of the Biomedical Faculty), Ministerstvo Zdravookhraneniya SSSR, 1970, 93 pp, pp 38-39

Abstract: A method is described which permits the elimination of errors in measuring the impedance of a biological object caused by polarization at the electrodes. The proposed method makes it possible to determine the back EMF and thereby calculate the errors developed in measuring the electrical parameters of a biological object. The method involves introduction of additional controlled EMF sources into the balanced measuring system, and by removing the dependance of the change in standard

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USSR

PALIN, A. V., Voprosy Mediko-Biologicheskikh Issledovaniy. Materialy Konferentsii Molodykh Nauchnykh Rabotnikov Mediko-Biologicheskogo Fakul-teta, 1970, 93 pp, pp 38-39

resistance from the value of EMF controlled source. The method was successfully tested on chemical solutions, blood plasma, and nerve tissue cultures at the Chair of Physiology and Biophysics.

Greater precision in measuring the passive electrical parameters of a biological object makes it possible to obtain a better conception of the chemical and physical processes taking place in the object, and can be highly useful in the development of medical equipment.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202320012-7

Hygiene & Health

UDC: 616.43-082-039.57:65.011.42(47.21)

MEANS OF RATIONALIZING THE WORK OF ENDOCRINOLOGISTS IN MUNICIPAL POLYCLINICS

[Article by E.B. Palinkashi, All-Union Scientific Research Institute of Social Hygiene and Public Health Organization imeni N.A. Semashko; Moscow, Sovetskoye Zdravookhraneniye, Russian, No 11, 1972, submitted 23 May 1972, pp 43-46]

In order No 81, dated 3 February 1972, issued by the USSR Minister of Health it is stated that "in order to fulfill successfully the tasks before Soviet public health in the ninth five-year period it is imperative to expand and improve work pertaining to scientific organization of labor, improve organizational forms of work of public health agencies and institutions.

Our investigation on rationalization of the work of endocrinologists in urban polyclinics was motivated by the existence of flaws in organization of this work as well as the lack of works on this subject.

Some aspects of organization of labor of endocrinologists were discussed in the works of V.Ya. Aber, Ye.A. Loginova, and others who noted that there was a considerable load with regard to reception of outpatients and the complexity of caring for patients with metabolic and endocrine pathology. At the same time, according to the data of V.P. Ionisyants, Ye.D. Anatol'yeva, M.I. Santotskiy, the actual distribution of endocrine disease is ten times greater than the generally known statistical indices and the volume of work done in endocrinology offices of polyclinics as a whole should be considerably greater than it is at the present time. There should be broader work dealing with detection and treatment of discrete early forms of endocrine diseases; dispensary care should be initiated not only for patients with such widespread pathology as diabetes mellitus but also for individuals suffering from less common diseases such as hypophyseal-adrenal pathology and toxic goiter (V.Ya. Aber, D.B. Kalikshteyn, Ye.A. Bulanovich, V.P. Komissarenko). For this reason, problems pertaining to rationalization of endocrinologists' work, the search for work time reserves that could be directed to improve the quality and scope of specialized endocrinological care acquire important significance.

PALINKASHI, E.B.

JPRS 57875
2 Jan 73

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202320012-7"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202320012-7

USSR UDC 621.397.132:621.397.238

TSIRLIN, V. M., SHESTAKOV, Yu. N., TARASENKOV, G. V., PALITSKIY, V. M.

"A Device for Transmitting Image Signals and Accompanying Audio in a Single Channel in a Television System"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, 1970, No 36, Soviet Patent No 288026, class 21, filed 24 May 67, published 3 Dec 70, p 52

Translation: This Author's Certificate introduces a device for transmitting image signals and accompanying audio in a single channel in a television system based on Soviet Patent No 221029. As a distinguishing feature of the patent, the frequency band of the audio channel is expanded by connecting the output of the pulse-duration modulator to the inputs of the AND circuit both directly and through a delay line. The output of the AND circuit is connected to one of the inputs of a coincidence circuit, and the signal from a flip-flop is sent to the other input of the coincidence circuit.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202320012-7

TELEVISION

USSR UDC 621.397.238:621.397.62

KOROBKOV, L. A., TSIRLIN, V. M., SHESTAKOV, Yu. N., PETROV, V. A., PALITSKIY, V. M., KHOROBRYKH, V. T., BEREZIN, I. I.

"A Device for Reception of Television Image Signals With Accompanying Audio"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, 1970, No 36, Soviet Patent No 288028, class 21, filed 19 Apr 67, published 3 Dec 70, p 52

Translation: This Author's Certificate introduces a device for reception of television image signals with accompanying audio combined in a single channel of a television system. The device contains a synchropulse selector, sound and image separation modules, and modules for demodulating the audio channel signals. As a distinguishing feature of the patent, the device is designed for reducing transient interference and increasing the resistance to interference of the accompanying audio channel. Connected at the input of the installation are two devices for restoring the DC component of the video signal. One of these signal-restitution devices is connected to a device for synchromixture regeneration through an electronic switch controlled by a signal from the synchropulse selector. Signals from the synchropulse selector and synchrogenerator are sent to the device for

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USSR

KOROBKOV, L. A., et al., Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, 1970, No 36, Soviet Patent No 288028, class 21, filed 19 Apr 67, published 3 Dec 70, p 52

synchromixture regeneration. The second signal-restitution device is connected to a code-pulse demodulator and an amplifier through an electronic switch controlled by a signal from the synchropulse selector. The signal from the amplifier is sent to the output of the device through an optimum low-frequency filter and a bilateral clipper with low-frequency filter. Priority dates from 2 March 1967.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202320012-7

AP9043454

PRIMARY SOURCE: Standarty i Kachestvo, 1969, Nr 8, pp 25-27

UR 0422

Some Economic Problems of Quality and Reliability of Industrial Products. [redacted] "Standarty i kachestvo", 1969, No. 8.

The problems considered are as follows: reception and volume of information on production quality; price fixing for products of improved quality; and necessity of material encouragement of employees towards improving the product quality.

Bibl. 2.

1944 2396

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202320012-7

Organometallic Compounds

USSR UDC 547.13:546.72 + 546.14/15

NESMEYANOV, A. N., KOCHETKOVA, N. S., MATERIKOVA, R. B., PALITSYN, N. P., KSENZENKO, V. I., and SOBOLEVA, T. S., Institute of Metal Organic Compounds, Academy of Sciences USSR

"Reaction of Ferrocene Derivatives With Bromine and Iodine"

Leningrad, Zhurnal Organicheskoy Khimii, Vol 9, No 2, Feb 73, pp 378-380

Abstract: Reaction of bromine and iodine with ferrocene substituted with electron donating and electron accepting substituents was studied. At -20° in heptane bromine decomposes ethyl- and 1,1'-diethylferrocene; with 1,1',3,3'-tetra-tert-butylferrocene it forms the tribromide of 1,1',3,3'-tetra-tert-butylferrocenium. At 50° in benzene iodine does not decompose ferrocene or its derivatives, forming addition products with various quantities of iodine. In general, presence of electron-donating substituents and reaction with strong oxidizers (Cl_2, Br_2) favor the decomposition of the ferrocene ring. In case of hindered derivatives or when the halogen is a weak oxidizer (iodine) mainly oxidation products are obtained, with an intact ferrocene ring. Oxidation to ferrocenium evidently preserves the system from further decomposition by the halogen.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202320012-7

USSR

UDC: 551.596+534-143

YEMEL'YANENKO, I. V., LIBENSON, Ye. B., PALIY, ~~A. F.,~~ and PAPERNO, A. I.

"Some Results of Experimental Investigations Into Sea Reverberation in the Radiation of Complex Signals"

Moscow, V sb. Tezisy dokl. 3-y Vses. shkoly--seminara po stat. gidroakustike, 1971 (Theses of Reports, Third All-Union School--Seminar on Statistical Hydroacoustics, 1971 -- collection of works) 1972, pp 343-347 (from RZh--Fizika, No 4, 1973, Abstract No 4Zh650)

Translation: Results are given of an experimental investigation into the degree of correlation of sea reverberation (R) and complex probing signals in mutual correlation processing. The presence of correlated components of sea R is detected in the near zone as well as in the far zone of the acoustical field. The experiments were conducted in the sea area at a depth of 3000-3500 m. The hydroacoustical conditions of the experiments and the equipment used for recording and processing the signals are described. Examples are

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202320012-7

USSR

YEMEL'YANENKO, I. V., et al., Tezisy dokl. 3-y Vses. shkoly--seminara po stat. gidroakustike, 1971, (from RZh--Fizika, No 4, 1973, Abstract No 4Zh650)

given of the recorded envelopes and samples of received R. The correlograms obtained are analyzed in detail. The general idea here is the following: with an increase in frequency deviation, the level of the uncorrelated component of R is reduced and the level of the correlated components comparable with the maximum autocorrelation function of the probing signal is also reduced. It is noted that the expression for the correlated components of R varied only slightly although the number of responses with a relatively high correlation level dropped noticeably. On the basis of a comparison of the moments of appearance of correlation maxima with the depth of the locale and the radiation picture, it can be assumed that they are the result of reflections not only from the floor and surface but also from the scattering objects, the distance between which is small compared with the wavelength of the sound. L. V. Tikhomirova

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202320012-7

1/2 020 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--SYNTHEIS AND ANTIMICROBIAL ACTIVITY OF AMMONIUM DERIVATIVES OF CYCLOHEXANE -U-

AUTHOR-(04)-UDOVITSKAYA, V.V., LOPUSHANSKIY, A.I., PALIY, G.K., BURDENYUK, I.P.

COUNTRY OF INFO--USSR

SOURCE--KHIM.-FARM. ZH. 1970, 4(1), 17-20

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--BACTERIOSTASIS, AMMONIUM COMPOUND, CYCLOHEXANE, CHEMICAL SYNTHESIS, STAPHYLOCOCCUS AUREUS, ESCHERICHIA COLI

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1993/0313 STEP NO--UR/0450/70/004/001/0017/0020

CIRC ACCESSION NO--AP0113242

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202320012-7"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202320012-7

2/2 020 UNCLASSIFIED

CIRC ACCESSION NO--AP0113242 PROCESSING DATE--16OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. HALOACETATES (IA) OF SUBSTITUTED CYCLOHEXANOLS, XCH SUB2 CO SUB2 R, WERE PREPD. BY THE METHOD OF CONRAD (1877) AS FOLLOWS (R, X, B.P.-MM, PERCENT YIELD, N PRIME20 SUBD, AND D PRIME20 REPORTED): (SHOWN ON MICROFICHE). ALL THE QUATERNARY SALTS PREPD. WERE TESTED IN VITRO AGAINST STAPHYLOCOCCUS AUREUS AND ESCHERICHIA COLI. FACILITY: CHERNOVITS. MED. INST., CHERNOVTSY, USSR.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202320012-7

USSR

UDC: 529.781:621.397.6:629.195.1

PALIY, G. N. and FEDOROV, Yu. A.

"A Method of Tying Time Scales Using Satellite Communication and Ground TV Nets"

Moscow, Izmeritel'naya tekhnika, No 3, 1972, pp 23-26

Abstract: The present methods for tying time scales use television signals to provide simultaneous vertical sync pulse recording at two different points or to transmit special pulses or time markers within the television signal. The system proposed in this article takes advantage of the experimental system that has been created in the Soviet Union for transmitting time and frequency information from the highly stable quartz oscillator from the television station in Moscow. Its advantage is that it resolves the ambiguity of counting at second intervals with the reception of vertical pulses without first tying in the scales of compared clocks. The use of satellites involved in TV broadcasting guarantees the constancy of the moment for release of second pulses from the satellite transmitting antenna, and permits combining this moment with that of second pulses from the Moscow transmitter.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202320012-7

USSR

529.781:621.397.6

PALIY, G.N., LUK'YANCHENKO, YA.I., FEDOROV, YU.A., VNUKOV, YE.M.

"Experimental High-Precision System Of Transmission Of The Dimensions Of Time And Frequency Units On Television Broadcasting Channels"

Izmeritel'naya tekhnika, Moscow, No 1, Jan 1972, pp 34-37

Abstract: An established experimental system is described which assures joining the time scale of television channels in various cities of the European part of the USSR with an error of less than 1 microsecond. A block diagram of the system is shown. The authors express their thanks to S.N. Mordovin, V.F. Zhelezov, V.S. Krasulin, V.G. Il'in, L. A. Abramov, G.A. Zadykin, M.D. Sopel'nikov and other specialists who took an active part in creation of the system. Received by editors 20 Sept 71. " fig. 1 tab. 7 ref.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202320012-7

USSR

UDC [629.12:624.02/.09].001.2:681.3

PALIY, O. M. and CHUVIKOVSKIY, V. S.

"Reliability of Numerical Calculations in Ship Structural Mechanics"

Leningrad, Sudostroyeniye, No 10, Oct 72, pp 15-17

Abstract: An analysis is made of the reliability of calculations of hull structures conducted by means of electronic digital computers. In judging the reliability of the results of numerical calculations, a distinction is made between the possibility of direct mistakes in programming and the possibility of errors as a consequence of inaccuracy of the initial data, the approximate nature of the algorithm as a whole, or error accumulation during the conduct of the calculations themselves (e.g., rounding off). The elimination of mistakes is called the provision of calculation reliability, and the attainment of acceptable error is called the provision of counting stability.

It is indeed important to obtain calculation reliability, i.e., the elimination of direct mistakes. But this can be accomplished by means of the usual methods of reliability theory. In the present study, attention is devoted to the question of attaining counting stability. Each stage of the calculation process, namely that of a physical model, the transformed mathematical

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202320012-7

USSR

PALIY, O. M. and CHUVIKOVSKIY, V. S., Sudostroyeniye, No 10, Oct 72, pp 15-17

model, and the scheme of the computing algorithm is aimed at optimal convergence and specificity with respect to the preceding stage, where by convergence is meant the degree to which a stage reflects the properties of the preceding (simulated) stage, and by specificity is meant the permissibly small change of the output data under consideration for variations (discrepancies) of the initial data. 1 figure. 2 references.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202320012-7

1/2 014 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--PURIFICATION OF PETROLEUM INDUSTRY WASTE WATERS BY PRESSURIZED SETTLING -U-

AUTHOR-(03)-KARELIN, YA.A., PALIY, P.A., SOKOLOV, A.G.

COUNTRY OF INFO--USSR

SOURCE--NEFT. KHOZ. 1970, 48(3), 63-5

DATE PUBLISHED-------70

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

TOPIC TAGS--PETROLEUM INDUSTRY, INDUSTRIAL WATER, WATER PURIFICATION, PETROLEUM PRODUCT, WATER POLLUTION CONTROL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3005/1955 STEP NO--UR/0093/70/048/003/0063/0065

CIRC ACCESSION NO--AP0133799

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202320012-7"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202320012-7

2/2 014 UNCLASSIFIED

CIRC ACCESSION NO--AP0133799 PROCESSING DATE--13NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. WATERS CONTG. 50-100 MG-L. SUSPENDED MATTER, OBTAINED FROM THERMAL CHEM. DEHYDRATION OF GAS SATD. PETROLEUMS, WAS PURIFIED BY SETTLING IN HORIZONTAL AND SPHERICAL TANKS AND COULD BE INJECTED INTO DISPOSAL AND PRODUCTIVE WELLS IN HIGHLY FRACTURED STRATA. THE METHOD WAS A PRELIMINARY TREATMENT FOR WATER INTENDED TO BE FILTERED FOR FLOODING PRODUCTIVE STRATA.

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202320012-7"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202320012-7

JPRS 59208

6-73

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IV-5. INTENSIFICATION OF THE GROWTH PROCESSES OF EPITAXIAL LAYERS BY PHOTO EXITATION AND THE APPLICATION OF ELECTROMAGNETIC FIELDS

[Article by Yu. D. Chistyakov, A. D. Gorsimov, Yu. P. Raynova, A. N. Paliyenko, V. A. Kiryukhin, V. I. Sharapov, Moscow; Novosibirsk, III Simpozium po Protsessam Rosta i [illegible] Poluprovodnikovykh Kristallov i Plenok, Russian, 12-17 June, 1972, p 46]

The effect on the system from photoirradiation and electromagnetic fields permits, in contrast to the thermal effect, stimulation of defined chemical reactions both in the volume and at the phase interface. Each chemical act, depending on the electronic transitions taking place in it requires irradiation by light of a strictly defined wave length. The photoirradiation offers the possibility of simple realization of a selective crystal growth with respect to area.

In the papers by Frazier and Kumagova it was demonstrated that irradiation by ultraviolet light lowers the autoepitaxy temperature of the silicon in the presence of hydrogen reduction of $SiCl_4$ and Si_2Cl_6 respectively, and with a constant temperature it increases the growth rate.

In the experiments of the authors by application of an electric field with an intensity of 3 kv/cm in the chloride process of silicon autoepitaxy, it was possible to increase the growth rate of the epitaxial layers and also to reduce the process temperature. In addition, the variation in intensity of the electromagnetic field permits variation of the alloying level without varying the composition of the vapor-gas mixture.

The indicated effects also open up new possibilities for integrating the technological processes.

PALIYENKO, A.N.

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PALKIN, B.N.

MEDICINE

JPRS 56177
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FACTORS INVOLVED IN CHOICE OF THE MEDICAL PROFESSION BY MEDICAL INSTITUTE STUDENT

[Article by B.N.Palkin, A.I. Alekseyev, Chair of Social Hygiene and Public Health Organization (headed by Docent B.N. Palkin), Novosibirsk Medical Institute; Moscow, Sovetskoye Zdravookhraneniye, Russian, No 4, 1972, submitted 9 August 1971, pp 40-46]

One of the most important tasks in the area of public health, defined in the Directives of the 24th Congress of the CPSU pertaining to the five-year plan of development of the national economy of the USSR, is to improve the level of training of medical personnel. In recent years, much has been done in our country to improve the system of higher medical education. The continuous improvement of syllabuses and curriculums, a good educational-material and scientific base, availability of highly qualified professorial and instructor personnel, introduction of new teaching methods in medical VUZ provide the necessary prerequisites for graduating physicians who meet the present demands of medical science and practice. However, the quality of training specialists is also considerably affected by such factors as the composition of students, the reasons that brought them to a given VUZ: their love or lack of love for the chosen specialty, and a number of others which, on the whole, determine the students' attitude toward education, and their "activity" in the course of acquiring knowledge. Without this, the most perfect pedagogic means and methods cannot yield the proper effect.

Elucidation of such factors could help develop criteria for screening candidates for medical institutes, not only according to the grades they received on the entrance examinations but also such indices, that are particularly important for the medical profession, as calling and suitability for this profession.

In 1968, we passed out a special anonymous questionnaire among senior year students (4th-6th), i.e. at a time when individuals who were accidentally among medical institute students had been sifted off. There were several groups of questions reflecting the student's personality, his relatives referable to three generations (brothers and sisters, parents, grandmothers and grandfathers), factors involved in his choice of the medical profession, and his attitude toward his chosen specialty. We received 724 questionnaires that were filled

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USSR

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UDC: 533+621.5:533

GADION, V. N., IVANOV, V. G., MISHIN, G. I., PALKIN, S. N., SKURIN, L. I., Physicotechnical Institute imeni A. F. Ioffe, Academy of Sciences of the USSR, Leningrad

"Investigation of the Electronic and Gas-Dynamic Parameters of a Hypersonic Wake Behind Models Moving in Argon"

Leningrad, Zhurnal Tekhnicheskoy Fiziki, Vol 42, No 5, May 72, pp 1049-1055

Abstract: The paper presents experimental results on measurement of the conductivity, velocity and diameter of the wake behind models moving in argon at 3300-4900 m/s. The pressure in the test chamber was varied from 30 to 100 mm Hg. The models were cylinders with low aspect ratio with a spherical nose and a tapered skirt 8 mm in diameter. The test models were made from polyethylene, and control measurements were made on aluminum copper-plated spheres 5.4 mm in diameter. Taking the initial conditions of the experiment as a basis, a theoretical analysis is made of the temperature, velocity and diameter of the wake, and the electron concentration along the wake using various models of viscosity. The viscosity models are evaluated by comparing theoretical and experimental data on wakes with a length up to 500 times the diameter of the model.

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(5)

where u_n and v_n are a projection of the velocity vectors of the corresponding components on the x and y axes; N is the number of components, while ρ_{nO} are unperturbed values of their densities, permitting the flow of each component to be considered irrotational and accordingly the introduction of a perturbation potential for each component. The remainder of the investigation is done using operational calculus methods.

Gadion, V. N., V. G. Ivanov, G. I. Mishin, S. N. Palkin, and L. I. Skurin. Electronic and gas dynamic parameters of hypersonic wakes behind models moving in argon. ZhTF, no. 5, 1972, 1049-1055.

The conductivity, velocity, and width of hypersonic wakes behind models moving in argon were studied within a velocity range of 3300-4900 m/sec, at pressures of 30, 40, 60, 80, and 100 torr and a temperature of about 290° K. The experiments were conducted on polyethylene 8 mm cylindrical models of small elongation with spherical noses and conic skirts. Copperplated aluminum spheres 5.4 mm in diameter were used for control experiments. The models were shot into a pressure chamber provided with instrumentation for measurement of the wake conductivity and velocity. Wake velocity was measured electrodynamically and by the Toepler method.

Measurement results are presented for tests of wake conductivity at a constant pressure and variable velocity or at a constant velocity and variable pressure. The latter test results show that as the distance from the body increases, a relationship develops between the

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USSR

UDC 533.932

GADION, V. N., IVANOV, V. G., MISHIN, G. I., PALKIN, S. N., Physico-Technical Institute imeni A. F. Ioffe of the USSR Academy of Sciences, Leningrad

"Study of the Conductivity of Hypersonic Wakes on a Ballistic Device"

Leningrad, Zhurnal Tekhnicheskoy Fiziki, Vol XLII, No 3, 1972, pp 635-637

Abstract: Results are presented from measuring the conductivity of a hypersonic wake for model flight speeds of 3.3-6.4 km/sec and an air pressure of 40, 80 and 160 mm Hg. These data are used to calculate the electron concentration drop downstream which offers the possibility of estimating the electron concentration decrease rate. Analysis of the results shows that the decrease in electron concentration in the "hot" part of the far wake ($T > 1000°$ K) is determined by the process of dissociative recombination $NO^+ + e \rightarrow N + O$, and the recombination coefficient is approximately described by the function $\alpha \approx 3 \cdot 10^{-3} T^{-3/2}$ cm^3/particle-second.

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USSR

PALKIN, Ye. S., BONDAREVSKIY, Yu. P. UDC 539.4:624

"Stress State of the Arch-Gravity Dam of Sayanskoy Hydroelectric Power Station"

Tr. Vses. proyekt.-izyskat. i NII "Gidroproyekt". Leningr. otd. (Works of the All-Union Experimental Design and Planning and Scientific Research Institute "Gidroproyekt". Leningrad Department), 1971, Collection 25(13), pp 105-114 (from RZh-Mekhanika, No 6, Jun 72, Abstract No 6V771)

Translation: Static and experimental studies of the total stress state of a dam under combinations of two basic and three particular sets of loads and actions, including seismic, are described. The methods of test loads are used in calculations of the dam (the complete method for hydrostatic water pressure and the first radial equation for displacements for seismic loads). The central cantilever method is also used. Experimental studies were made on elastic and brittle models. The most unfavorable stress state of the dam arises with the combination of the basic loads considering temperature effects and the effect of a longitudinal seismic force, i.e., directed along the axis of the dam. For this case the maximum tensile stress was 20 kg/cm^2 and the maximum compressive stress was 103 kg/cm^2. The compu-

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PALKIN, Ye. S., BONDAREVSKIY, Yu. P., Tr. Vses. proyekt.-izyskat. i NII "Gidroproyekt". Leningr. otd., 1971, Collection 25(13), pp 105-114

tational and experimental results of the studies agree satisfactorily. A truer picture of the distribution of the major compressive forces at the downstream face at the base of the channel portion of the dam was established by the experimental studies. A. S. Kozhevnikov.

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1/2 019 UNCLASSIFIED PROCESSING DATE--04DEC70

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AUTHOR-(03)-PALLADIN, A.V., KIRSENKO, O.V., VAVILOVA, G.L.

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