USSR

SIVACHEV, K. A., et al., Teploenergetika, No 6, Jun 73, pp 8-12

the chosen variant of boiler-turbine grouping and the flow sheet of the topping plant are shown. The main results of 60 operating periods in the years 1967-1971 of SKR-100 topping plant and of its individual blocks are discussed. Two figures, two tables.

2/2

172 024 UNCLASSIFIED

TITLE--DYNAMIC CHARACTERISTICS OF PULSED DC VOLTAGE STABILIZERS WITH PULSE WIDTH REGULATION -U-

PROCESSING DATE--13NOV70

AUTHOR-(02)-ALEKSANDROV, F.I., SIVAKOV, A.R.

COUNTRY OF INFO--USSR

SOURCE--ELEKTRICHESTVO (ELECTRICITY), 1970, NO 1, PP 60-65

DATE PUBLISHED-------70

SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR.

TOPIC TAGS--VOLTAGE STABILIZER, PULSE WIDTH MODULATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3004/0258

STEP NO--UR/0105/70/000/001/0060/0065

CIRC ACCESSION NO--AP0130991

UNCLASSIFIED

2/2 024 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0130991

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IT IS SHOWN THAT THE PULSED VOLTAGE REGULATOR OF THE STABILIZER CAN BE REPRESENTED APPROXIMATELY AS A CONTINOUS LINEAR STABILIZER ELEMENT, WHILE THE FAST RESPONSE PULSE WIDTH MODULATOR, DEPENDING ON THE OPERATING REGIME, CAN BE REPRESENTED AS A LINEAR INERTIAL ELEMENT OR AS A RELAY ELEMENT WITH PURE RANDOM DELAY. THE EQUATION OF STABILIZER DYNAMICS FOR SMALL INCREMENTS OF THE INPUT VOLTAGE IS PRESENTED AND THE FACTORS WHICH INCREASE THE STABILIZATION FACTOR IN THE STEADY STATE REGIME ARE DISCLOSED. THE OPERATING REGIME OF THE STABILIZER WITH STEP FUNCTION CHANGE OF THE INPUT VOLTAGE IS EXAMINED. EXPRESSIONS ARE WRITTEN FOR THE MAXIMAL DYNAMIC INSTABILITY (FOR ONE TIME COMMUTATION OF THE LOAD OR PART OF THE LOAD) AND FOR THE DYNAMIC PULSATION OF THE OUTPUT VOLTAGE (FOR PERIODIC LOAD COMMUTATION). THE BASIC THEORETICAL ASSUMPTIONS AND RELATIONS ARE CONFIRMED EXPERIMENTALLY.

UNCLASSIFIED

USSR

UDC: 621.315.3

CHUNIN, D. A., BOBYLEVA, T. M., SHMYREVA, M. F., SIVAKOV, P. M.

"Investigation of the Stability and Heat Resistance of Microwires"

Elektron. tekhnika. Nauchno-tekhn. sb. Radiokomponenty (Electronic Technology. Scientific and Technical Collection. Radio Components), 1970, vyp. 1, pp 66-76 (from RZh-Radiotekhnika, No 5, May 71, Abstract No 5V417)

Translation: The paper outlines the results of investigations of the stability of electrical properties of microwires during aging under natural conditions and under high-temperature conditions. Empirical relationships are given for the change in parameters. A graphic-analytical method is presented for predicting storage life. Resumé.

1/1

USSR

SIVANBAYEV, A. V.

UDC 624.139.68

"The Thawing of Permafrost Soils Underneath a High-Temperature Heat Source"

Moscow, Osnovaniya, Fundamenty i Mekhanika Gruntov, No 1, 1971, pp 28-29

Abstract: The article deals with determination of the thawing depth of permafrost soils under the action of high temperatures. The solution of the differential equations describing this process is given. Results of experimental research, on the basis of laboratory facilities, on determination of the moisture field and the temperature field in soil under a high-temperature heat source, are presented. 9 bibliographic entries.

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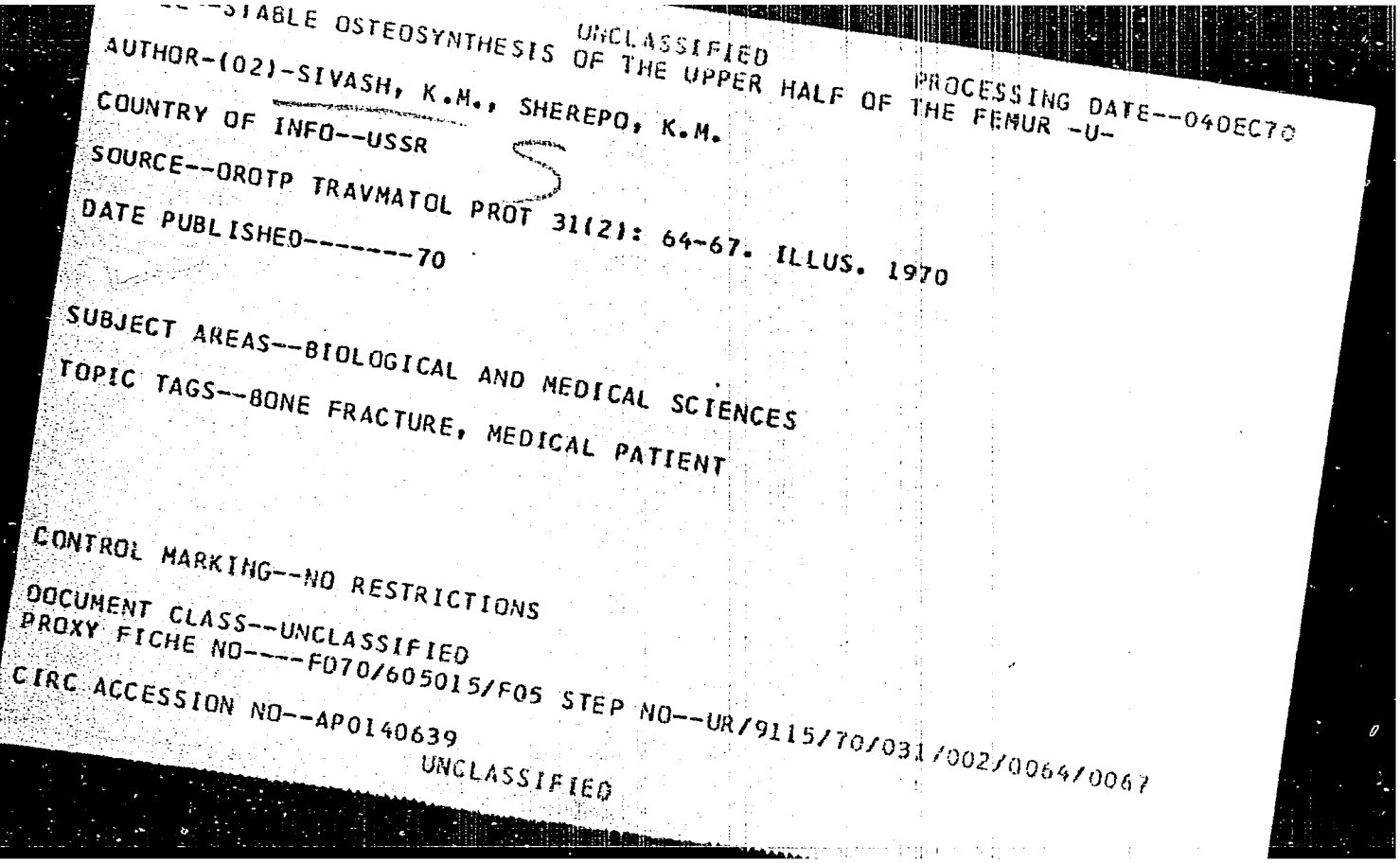

UNCLASSIFIED PROCESSING DATE--04DEC70

--STABLE OSTEOSYNTHESIS OF THE UPPER HALF OF THE FEMUR -U-

AUTHOR-(02)-SIVASH, K.M., SHEREPO, K.M.

COUNTRY OF INFO--USSR

SOURCE--OROTP TRAVMATOL PROT 31(2): 64-67. ILLUS. 1970

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--BONE FRACTURE, MEDICAL PATIENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----F070/605015/F05 STEP NO--UR/9115/70/031/002/0064/0067

CIRC ACCESSION NO--AP0140639

UNCLASSIFIED

2/2 013 UNCLASSIFIED

CIRC ACCESSION NO--AP0140639 PROCESSING DATE--04DEC70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CLINICAL EXPERIENCES IN THE TREATMENT OF 70 PATIENTS WITH FRACTURES OF THE DIAPHYSIS OF THE FEMUR INVOLVING THE USE OF THE CORKSCREW PIN DESIGNED BY K. M. SIVASH, THE V. T. 5-1 HAVE SHOWN THAT THIS METHOD ALLOWS THE INDUCTION OF STABLE OSTEOSYNTHESIS OF THE PROXIMAL SEGMENT OF THE FEMORAL DIAPHYSIS AND THE EARLY RESTORATION OF THE FUNCTION OF ALL THE EXTREMITAL JOINTS. IT PREVENTS THE DEVELOPMENT OF LESSENED MOBILITY AND JOINT CONTRACTURES, AND INSURES THE EARLIER RESTORATION OF THE ABILITY TO WALK AND RECOVERY OF THE SUPPORTIVE FUNCTION OF THE LIMB OF THE PATIENT. FACILITY: CENT. INST. TRAUMATOL. ORTHOPED., MIN. HEALTH USSR, MOSCOW, USSR.

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--20NOV70

1/2 043

TITLE--OCCURRENCE OF A DETONATION IN A NONUNIFORMLY HEATED GAS -U-

AUTHOR-(04)-ZELDOVICH, YA.B., LIBROVICH, V.B., MAKHVILADZE, G.M., SIVASHINSKIY, G.I.

COUNTRY OF INFO--USSR

SOURCE--PMTF, ZHURNAL PRIKLADNOI MEKHANIKI I TEKHNICHESKOI FIZIKI, MAR.-APR. 1970, P. 76-84

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS, ORDNANCE

TOPIC TAGS--DETONATION, SHOCK WAVE, CHEMICAL REACTION, THERMAL EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

STEP NO--UR/0207/70/000/000/0076/0084

PROXY REEL/FRAME--3005/1402

ACCESSION NO--AP0123354

UNCLASSIFIED

2/2 043 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0133354

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. NUMERICAL SOLUTION OF THE PROBLEM OF THE OCCURRENCE OF A DETONATION IN A NONUNIFORMLY HEATED GAS CAPABLE OF CHEMICAL REACTION. IT IS SHOWN THAT THREE DIFFERENT REACTION REGIMES ARE POSSIBLE IN THIS CASE. IF THE TEMPERATURE DISTRIBUTION GIVEN AT THE INITIAL MOMENT IS SUCH THAT THE GAS IS HEATED ALMOST UNIFORMLY, THE REACTION OCCURS IN A THERMAL EXPLOSION REGIME. IN THE CASE OF A VERY STEEP INITIAL TEMPERATURE PROFILE A SHOCK WAVE WHICH SEPARATES FROM THE REACTION WAVE ARISES. FINALLY, THERE IS A TEMPERATURE DISTRIBUTION SUCH THAT THE SHOCK WAVE WHICH FORMS IS CAPABLE OF CAUSING A REACTION, AND A SWITCHOVER TO A STEADY DETONATION REGIME OCCURS.

UNCLASSIFIED

1/2 016 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--GLAZES CONTAINING LITTLE OR NO BORON IN THE PRODUCTION OF EARTHENWARE -U-

AUTHOR-(04)-SIVCHIKOVA, M.G., KOVALENKO, YU.G., BARSHCHEVSKAYA, A.F., SIDORENKO, A.I.

COUNTRY OF INFO--USSR

SOURCE--STEKLO KERAM. 1970, 27(3), 40-2

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--CERAMIC COATING, CHEMICAL COMPOSITION, THERMAL STABILITY, BORON OXIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1589 STEP NO--UR/0072/70/027/003/0040/0042

CIRC ACCESSION NO--AP0125211

UNCLASSIFIED

2/2 016 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125211

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TWO GLAZES OF THE COMPN. SIO SUB2 2.251, 2.67; AL SUB2 O SUB3 0.233, 0.25; CAO 0.304, 0.329; FE SUB2 O SUB3 0.005, 0.005; B SUB2 O SUB3 0, 0.185P NA SUB2 O 0.206, 0.248; K SUB2 O 0.044, 0.049; MGO 0.116, 0.100; SRO 0.167,0.174; AND ZNO 0.163, 0.098 MOLE WERE USED FOR GALZING OF EARTHENWARE WITH 9-12PERCENT OPEN POROSITY. THE FIRING WAS CARRIED OUT IN TUNNEL FURNACES AT 1140-1200DEGREES DURING 16-18 HR. AFTER FIRING, THE LOW B GLAZE SHOWS LEVEL SPREADING AND GOOD POLISH. THE GLAZE IS THERMALLY STABLE. ITS COEFF. OF THERMAL EXPANSION IS LSIGHTLY CHANGED: IT IS 7.0 TIMES 10 PRIME NEGATIVE6 IN THE INTERVAL 20-400DEGREES, AND 7.54 TIMES 10 PRIME NEGATIVE6 AT 20-600DEGREES WHILE THAT OF AN INDUSTRIAL SAMPLE WAS 7.15 TIMES 10 PRIME NEGATIVE6, AND 8.25 TIMES 10 PRIME NEGATIVE6-DEGREE. THE FUSIBILITY OF LOW B GLAZES IS COMPARABLE WITH THAT OF INDUSTRIAL ONES. AT 1140DEGREES IT IS CHARACTERIZED BY THE MIRROR SPREADING AND BY GLOSS. THESE PROPERTIES ARE PRESERVED EVEN AT 1230DEGREES. PETROGRAPHICALLY, THE GLAZE IS PURE GLASSY PHASE WITHOUT REMAINING QUARTZ GRAINS AND GASEOUS BUBBLES. ITS THICKNESS VARIES 100-30 MU. THE POSSIBILITY TO DECREASE THE B SUB2 O SUB3 CONTENT FROM 9.5 TO 4.7PERCENT IN THE GLAZES WAS VERIFIED BY PRODUCTION GLAZED EARTHENWARE. FACILITY: UKR. NAUCH. ISSLED. INST. STEKLO. FARFORO FAYANS. PROM., USSR.

UNCLASSIFIED

1/2 012 UNCLASSIFIED PROCESSING DATE--02OCT70

TITLE--MECHANISM OF THE REACTION OF TRICHLOROACETONITRILE WITH SULFURIC ACID MONOHYDRATE -U-

AUTHOR-(03)-MICHURIN, A.A., SIVENKOV, YE.A., ZILBERMAN, YE.N.

COUNTRY OF INFO--USSR

SOURCE--ZH. ORG. KHIM. 1970, 6(3) 626

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL REACTION RATE, CHLORINATED ORGANIC COMPOUND, ACETONITRILE, SULFURIC ACID, AMINE, SULFUR OXIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1992/1547 STEP NO--UR/0366/70/006/003/0626/0626

CIRC ACCESSION NO--AP0112541

UNCLASSIFIED

2/2 012 UNCLASSIFIED PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0112541

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE REACTION OF CL SUB3 CCN WITH H SUB2 SO SUB4 GAVE SMALLER THAN OR EQUAL TO 40PERCENT CL SUB3 CCONH SUB2 (I) AND SO SUB3. HEATING I IN A 3 FOLD EXCESS OF CL SUB3 CCN GAVE (CL SUB3 CCONH) SUB2-SO SUB2 (II). THIS COMPD. IS NOT FORMED WHEN I IS HEATED WITH SO SUB 2 ALONG; HOWEVER, UNDER CERTAIN CONDITIONS (P. BAUMGARTEN, ET AL., 1931) I REACTS WITH SO SUB2 TO GIVE CL SUB3 CCONHSO SUB2 OH. A CYCLIC MECHANISM IS PROPOSED FOR THE FORMATION OF II.

UNCLASSIFIED

USSR

UDC 531.352.396

GROBOV, V. A., and SIVENYUK, V. V.

"Theory of the Vibration-Rotation Movements of a Free Solid, Carrying Elastic Elements"

Kiev, Prikladnaya Mekhanika, Vol 8, No 2, Feb 72, pp 3-8

Abstract: The interrelated rotatory movements of a solid and the flexural oscillations of elastic rods, connected with it, are dealt with. Asymptotic methods are used for solving the problem. An analysis is made of the non-resonance regime of motion of the system, and of the case where one of the frequencies of the elastic oscillations is equal to the frequency of free precession. Conditions are found, at which the elastic oscillations of the elastic elements attached to the carrying solid may be used for quenching nutation. The proposed method for solving the problem, using the asymptotic method of N. M. Krylov, N. N. Bogolyubov, and Yu. A. Mitropol'skiy is very promising from the point of view of taking into account various kinds of small conservative and nonconservative disturbances acting upon a free system. Two figures, 4 references.

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USSR

UDC: 621.375.4

SIVERS, M. A., SPIRIDENKOV, E. M., SERGEYEV, A. Ya.

"A Wide-Band Transistorized Power Amplifier"

Kiev, Izvestiya VUZov, Radioelektronika, Vol 15, No 1, Jan 72, pp 99-102

Abstract: The authors examine the operation of a wide-band transistorized transformer power amplifier free of the nonlinear distortions caused by the scattering inductance of the load transformer. These nonlinear distortions are completely eliminated by ensuring current flow continuously through the transistors. In order to keep the efficiency of the amplifier high, operating conditions are chosen in such a way that each transistor operates in the saturation region during half the period of high frequency oscillations, and in a mode corresponding to the active region of the current-voltage curve of the device during the other half. Common-emitter and common-base versions of such a circuit are given. The proposed circuit ensures an efficiency equivalent to that of a power amplifier for class B operation. An experimental check of the computational procedure showed excellent agreement. The conclusions of the research are applicable to vacuum-tube amplifiers as well. Two figures, bibliography of two titles.

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USSR

UDC 621.373.421.1(088.8)

ARTYM, A. D., ALEKSANYAN, A. A., SIVERS, M. A., Leningrad Polytechnical Institute imeni Kalinin

"A Generator of Harmonic Oscillations"

USSR Author's Certificate No 258393, Filed 26 Feb 68, Published 14 Apr 70 (from RZh-Radiotekhnika, No 10, Oct 70, Abstract No 10D375)

Translation: This Author's Certificate introduces a generator of harmonic oscillations with AM dephasing. The oscillator is based on controlled diodes and contains a DC voltage supply source, charging and discharging chokes, commutators, a resonance tank system, and a source of controlling voltage (phase or time modulator). To extend the modulation range while simultaneously assuring high linearity of the modulation characteristic, the charge-discharge chokes are equipped with auxiliary recuperation windings, each of which is connected through an isolating diode to the supply source of the oscillator. V. P.

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USSR UDC 621.375.82

SIVERS, V. N., SHEMSHURA, V. Ye., and YUGAS, B. S.

"Determination of Density of Excited States in Three-Level Medium With Allowance for Multiple Light Scattering"

Opredeleniye plotnosti vozbuzhdennykh sostoyaniy v trekhurovnevoy srede s uchetom mnogokratnogo rasseyaniya sveta (cf. English above. Editorial Board of Zh. prikl. spektroskopii (Journal of Applied Spectroscopy)), Minsk, 1972, 11 pp, ill., bibliography with six titles (No 4204-72 Dep) (from RZh-Fizika, No 8, Aug 72, Abstract No 8D994 Dep from authors' abstract)

Translation: The authors consider the interaction of high-power monochromatic radiation with a three-level medium with equidistantly spaced energy levels. The medium is represented in the form of a one-dimensional array of scattering centers. With allowance for multiple light scattering in the medium, expressions are obtained which define the densities of scattering centers in states with energies E_1, E_2, and E_3. Stimulated emission is taken into account in the solution. The problem is considered under steady-state conditions. The density values of scattering centers make possible calculation of light conditions at any point in the medium. The results obtained are illustrated graphically.

1/1

USSR

UDC 669.245.018.44

ADLER, YU. P., DOLZHANSKIY, YU. M., MOLOSTOVA, I. I., and SIVILEVA, L. I., Institute for Improving the Qualifications of the Ministry of the Chemical Industry USSR, All-Union Institute of Aviation Materials

"Statistical Study of the Mechanical Properties in the Al-Zn-Mg-Cu System Using Projected-Experiment Methods"

Ordzhonikidze, IVUZ, Tsvetnaya Metallurgiya, No 5, 1973, pp 135-139

Abstract: The study related the mechanical properties of the Al-Zn-Mg-Cu system to the composition of the melt, containing the following weight % of metals: Zn, 7.5 and 8.5; Mg, 2.5 and 3.5; Cu, 1.5 and 2.3 and Zr, 0.13%. This resulted in 8 alloys for the first stage. The alloys prepared during the second stage had the following compositions: Zn, 8.0 and 9.5%; Mg, 1.5 and 2.5%; Cu, 1.0 and 2.0%; Zr, 0 and 0.13%; Co, 0 and 0.2%; Mn, 0. and 0.3%; Fe, 0.1 and 0.2%. The mechanical properties measured were the strength (σ_B in kg/mm^2) and the relative extension at the rupture point (δ, in %). Sets of equations of the form δ or $\sigma_B = A \pm BX_b \pm CX_c \ldots MX_n$ were set up and the coefficients A - N analyzed in matrix form. The X_n is the concentration

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USSR

ADLER, YU. P., et al., Tsvetnaya Metallurgiya, No 5, 1973, pp 135-139

of component N. The additions of Zn, Mn, Co resulted in an increase in the strength. The decrease of Mg from 3.5 to 2.5 increased the relative extension from 8.3 to 11.7%.

2/2

Nuclear Science and Technology

USSR UDC: 621.039.58,63:539.6

DIBOBES, I. K., KNYAZEV, V. A., MOISEYEV, A. A., MOSKALEV, YU. I., SIVINTSEV, YU. V., TEVEROVSKIY, YE. N., TSIKMAN, A. V., and SHANOV, V. P.

"Radiation Safety Standards (NRB-69)"

Moscow, Atomnaya energiya, Vol. 28, No 6, Jun 70, pp 463-467

Abstract: In August 1969 the Ministry of Health of the USSR approved the Radiadiation Safety Standards (NRB-69) developed by the National Commission on Radiation Protection. Recommendations of the International Commission of Radiological Protection served as the basis for the new standards. These standards set the basic permissible levels for ionizing radiation along with the permissible admission of radioactive isotopes into an organism. This includes three categories of people: Category A including service personnel, Category B including specific individuals in the population who live in areas where the permissible radiation doses may have been exceeded and where radiation conditions are checked, and Category C which includes the entire population with respect to estimating a genetically significant radiation dosage. The new standards are mandatory for the enterprises and establishments of all ministries and agencies using, applying, processing, transporting, storing, and burying radioactive substances and ioniding radiation sources. A short summary is given of the scientific basis which served as the framework for the new standards. The new standards are differentiated from the old. Tables are

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020017-4"

USSR

DIBOBES, I. K., et al., Atomnaya energiya, Vol 28, No 6, Jun 70, pp 463-467

given showing permissible somatic and genetic doses. Permissible surface contamination levels are also given.

1/2 019 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--CLINICAL TRIALS OF CHLORACIZIN IN ISCHEMIC CARDIAC DISEASE -U-

AUTHOR-(05)-LEVINA, TS.A., ROMANOVSKAYA, A.I., DMITRIYEVA, I.T., KONOVALENKO, A.V., SIVOKONEVA, N.A.

COUNTRY OF INFO--USSR

SOURCE--VRACHEBNOYE DELO, 1970, NR 4, PP 69-72

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--HEART DISEASE, ATHEROSCLEROSIS, ARTERY, DRUG TESTING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3002/1665 STEP NO--UR/0475/70/000/004/0069/0072

CIRC ACCESSION NO--AP0129055
UNCLASSIFIED

2/2 019 UNCLASSIFIED

CIRC ACCESSION NO--AP0129055 PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CHLORACIZIN WAS EMPLOYED IN 70 PATIENTS WITH CHRONIC CORONARY INSUFFICIENCY AND IT WAS FOUND THAT THIS DRUG IS ONE OF THE METHODS OF CHOICE IN THE TREATMENT OF ISCHEMIC CARIAC DISEASE, DUE TO ATHEROSCLEROSIS OF THE CORONARY ARTERIES.

FACILITY: ODESSKOGO MEDITSINSKOGO INSTITUTA.

UNCLASSIFIED

USSR UDC 621.762.4

TIKHONOV, G. F., PYRYALOV, L. A., SIVOV, A. V.

"Application of Surface-Active Substances When Obtaining Porous Rolled Products"

Tr. Gor'kov. politekhn. in-ta (Works of Gor'kiy Polytechnic Institute), Vol 26, No 15, 1970, pp 14-17 (from RZh-Metallurgiya, No 4, Apr 71, Abstract No 4G450)

Translation: On introducing surface-active substances, for example, machine oil and glycerine, into Fe, Cu, Ni, nichrome, stainless steel, and other powders, it becomes possible to roll a bimetallic strip from the powders differing sharply with respect to its properties whereas mixtures of different powders without surface-active substances give strips with very high bend after rolling with a difference in friction coefficients of these powders of more than 10-13%. The article contains 4 tables and a 4-entry bibliography.

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USSR UDC: 681.3.06:51

SIVKOV, A. V.

"An Interpreter for Processing Symbolic Information on the 'Minsk-22' Computer"

V sb. Elektronno-vychisl. tekhn. i programmir. (Computer Technology and Programming--collection of works), vyp. 3, Moscow, "Statistika", 1970, pp 50-56 (from RZh-Kibernetika, No 7, Jul 71, Abstract No 7V734)

Translation: This paper considers an attempt to extend computer possibilities by introducing supplementary instructions which are performed in the same manner as the conventional machine commands. An interpreter is developed for this purpose. Author's abstract.

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USSR

UDC: 621.762.3.001

SIVOV, A. V.

"Calculation Procedure for Determining the Frictional Force of Powders Against the Slide Gates of the Charging Machine When Rolling Bimetals"

Tr. Gor'kov. politekhn in-ta (Works of Gor'kiy Polytechnic Institute), Vol 26, No 15, 1970, pp 12-13 (from RZh-Metallurgiya, No 4, Apr 71, Abstract No 4G392)

Translation: Beginning with the conditions of taking the powders by the rolls, an expression has been derived for determining the frictional force against the slide gate: $L_{tot} \leq P \cos \alpha(f_1 + f_2) - 2P \sin \alpha$, where P is the force compressing the powder, f_1 and f_2 are the coefficients of external friction for each powder, α is the angle of contact. For the majority of metal powders with small angles of contact ($\alpha \approx 5°$) an entraining force of ~1 ton acts on the slide gate.

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Pesticides

USSR UDC 632.95

SIVKOV, I. G.

"Government Control of the Utilization of Toxic Chemicals"

Moscow, Zashchita Rastenii, No 9, 1970, pp 9-10

Abstract: A survey was made of practices in connection with the wide utilization of various pesticides. In spite of the recommendations published and formation of special committees, many regions failed to follow the recommendations. In particular the food products were not monitored for contamination, some had no special storage facilities for chemically treated grain, many had no storage place designated specifically for toxic chemicals. A large number of the places surveyed had no regulations published on safeguarding of these toxic materials, no special clothing, washing facilities and many utilized untrained personnel for application of the agents. Most of the deficiencies were corrected immediately after discovery.

1/1

USSR

UDC 537:226;537;311;33];538

SIVKOV, N. I., PYN'KO, V. G., ANTIPIN, I. P., MYAGKOV, V. G.

"Influence of Voltages on Domain Structure of Monocrystalline Films of Ni, Fe, and Co"

Fizika, khimiya i khim. tekhnol., [Physics, Chemistry and Chemical Technology -- Collection of Works], Krasnoyarsk, 1969, pp 40-43, (Translated from Referativnyy Zhurnal Fizika, No 10, 1970, Abstract No 10 Ye 1180 by the authors).

Translation: The effect of voltages applied to a monocrystalline film by compression of the film together with a substrate (LiF crystal) on the domain structure was observed. The behavior of the structure confirmed that the magnetostriction constants λ_{100} of nickel and λ_{110} of iron are less than zero. It is established that λ_{100} of β-Co is greater than zero.

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USSR

UDC 621.791.72,001.5:669.293+669.14

SIVOV, YE. N., and D'YACHENKO, V. V., Candidates of Technical Sciences, Moscow Aviation Technological Institute

"Effect of the Electron-Beam Thermal Welding Cycle on Seam Formation and Properties of Niobium (VN-2AE) and Steel (Kh18N10T) Weld Joints"

Moscow, Svarchnoye Proizvodstvo, No 4, Apr 73, pp 11-13

Abstract: In modeling the process of welding by means of applying a drop of melted steel on the surface of solid niobium it was established that for formation of strong chemical bonds at the solid-liquid interface boundary without development of an intermetallide substrate it is required that the niobium heating temperature in the zone of contact with the molten steel be in the limits of 1100-1600°C for not more than several seconds of contact. In electron-beam welding, a similar cycle can be obtained in the case when the niobium heating source is the edge of the molten steel. In electron-beam welding it is necessary to place the steel so as to prevent its direct action on the niobium surface. From weld tests it was found that heating niobium with a thickness of 0.3-0.5 mm up to 1600° C and with a thickness of 0.5-1.0 mm up to 1500°C does not cause the formation of an intermetallide substrate. A satisfactory strength of the weld joints can be achieved if the substrate is absent or the average thickness of a discontinuous substrate does not

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USSR

SIVOV, YE. N., and D'YACHENKO, V. V., Svarochnoye Proizvodstvo, No 4, Apr 73, pp 11-13

exceed 2.0 microns. The types of joints and optimum welding process were determined which provide weld seams of a given shape and satisfactory properties. The boundary angle of a wetting for the crystallizing seam is the criterion for evaluating the weld joint quality, and a satisfactory strength of the joint occurs for wetting angles of 45-70°. Six figures, two tables, three bibliographic references.

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USSR

UDC 669.046.5

ANSHELES, I. I., FEDOSEYEV, V. V., OYSK, G. N., YEGOROV, A. V., SOROKIN, S. P., TYURIN, Ye. I., DANILIN, V. I., SELIVANOV, V. M., SIVKOV, S. S., ZYRYANOV, Yu. Ye., and BALDAYEV, B. Ya.

"Use of Electromagnetic Stirring in Vacuum Melting of Steel in a Ladle"

Moscow, V sb. "Sovremennyye problemy kachestva stali" (MISiS), (Collection of Works. Modern Problems of Steel Quality) (Moscow Institute of Steel and Alloys), Izd-vo "Metallurgiya," No 61, 1970, pp 222-227

Translation of Abstract: Brief technical characteristics are given of the electromagnetic stirring of steel in a ladle. Data are presented on the effect of electromagnetic metal stirring on the uniform distribution of added deoxidizers and alloying elements, and also on the significant increase in the duration of vacuum smelting. A new production technology for the ShKh15 steel is presented in which complete deoxidation and alloying is conducted in the ladle at the end of vacuum smelting. The suggested method is theoretically substantiated. The results of the first experimental melts are presented. 3 tables.

1/1

USSR

UDC 621.165

DEYCH, M. Ye., FILIPPOV, G. A., SALTANOV, G. A., LAUKHIN, Yu. A., and SIVOBOROD, V. A.

"Investigation of Phase Transitions in Eddy Currents of Supersaturated Steam"

Moscow, Energetika i Transport, No 2, 1972, pp 160-166

Abstract: In the article are presented the results of an experimental investigation of the condensation of water vapor in a vortex wake behind a stream flowing lengthwise about a flat plate at $M_\infty < 1$. Special attention was devoted to the structure of the vortex wake and to the particle size of the liquid phase in the wake. The dispersion field of the liquid phase in the wake behind the edge was measured. The stream was photographed in order to obtain the wake structure more exactly. A theoretical justification of the possibility of steam condensation in eddy currents is given on the basis of the consideration of a single eddy. 5 figures. 9 references.

1/1

USSR

UDC 621.396.61:621.396.2

SIVOKHO, Ye. I.

"Calculating a Matching Device Made of Ferrovariometers for an Automatic Short-Wave Transmitter"

Materialy nauchno-tekh. konferentsii. Leningr. elektrotekhn. in-t svyazi. Vyp. 3 (Materials of the Scientific and Technical Conference. Leningrad Electrotechnical Communications Institute, Vyp. 3), Leningrad, 1970, pp 130-134 (from RZh-Radiotekhnika, No 8, Aug 70, Abstract No 8 D291)

Translation: The calculational relations permitting determination of the law of variation of inductance of ferrovariometers with respect to frequency band with a given value of the travelling wave coefficient are presented. An example of calculating the matching device for a URU is presented. There are two illustrations and a 1-entry bibliography.

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USSR

UDC 621.79.027

AMONENKO, V. M., AZHAZHA, V. M., V'YUGOV, P. N., GUMENYUK, V. S., and SIVOKON', V. V.

"The Possibility of Purification of Chemically Active Metals by Zone Melting"

Monokristally Tugoplavkikh i Redkikh Metallov [Single Crystals of Refractory and Rare Metals -- Collection of Works], Nauka Press, 1971, pp 5-12

Translation: An installation is described for zone cathode ray melting of zirconium with a residual pressure of ~$5 \cdot 10^{-8}$ torr. The heating chamber, sealed with metal, is evacuated with two oil-vapor pumps with sorption traps. Data are presented on the partial pressures of residual gases and their changes as functions of the duration of operation of the installations with the sorption traps. It is demonstrated that the use of the new 5F-4E vacuum oil as a working fluid in the oil-vapor pumps is promising for the production of vacuums of ~$4 \cdot 10^{-8}$ in metallurgical pipe installations. Data are presented on zone purification of zirconium in a vacuum of $7 \cdot 10^{-8}$-$1 \cdot 10^{-7}$ torr. 5 Tables; 6 Figures; 2 Bibliographic references.

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1/2 027 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--ENERGY OF THE FIRST STOKES COMPONENTS IN THE STIMULATED RAMAN SPECTRA OF SOME LIQUIDS -U-

AUTHOR-(04)-SHVEDOVA, N.D., GERASIN, A.P., SIVOLOBOV, V.V., SVERDLOV, L.M.

COUNTRY OF INFO--USSR

SOURCE--ZH. PRIKL. SPEKTROSK. 1970, 12(2), 270-3

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, PHYSICS

TOPIC TAGS--RAMAN SPECTRUM, PULSE EXCITATION, BENZENE, CYCLOHEXANE, ACETYLENE HYDROCARBON, EXCITATION ENERGY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1995/1237 STEP NO--UR/0368/70/012/002/0270/0273

CIRC ACCESSION NO--AP0116699

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020017-4"

2/2 027 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0116699

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECTS OF THE ENERGY OF THE EXCITING PULSE AND CELL WIDTH ON THE ENERGY OF THE FIRST STOKES COMPONENTS OF THE STIMULATED RAMAN SPECTRA OF BENZENE (I) (992CM PRIME NEGATIVE1), CYCLOHEXANE (II) (2846 CM PRIME NEGATIVE1), AND PHENYLACETYLENE (III) (1002 AND 2102 CM PRIME NEGATIVE1) WERE EXAMD. THE DATA SHOW THAT, AT LOW VALUES OF THE ENERGY OF EXCITING LIGHT, THE ENERGY OF THE FIRST STOKES COMPONENTS INCREASES MONOTONICALLY. THE RAMAN SPECTRA THRESHOLD DETD. FROM EXPTL. DATA WAS P EQUALS 1.5 FOR III AND 2.5 FOR II RELATIVE TO I. AN INCREASE OF CELL WIDTH CAUSED A DECREASE OF THE STIMULATED RAMAN SPECTRA THRESHOLD. THE ENERGY OF THE FIRST STOKES COMPONENTS INCREASED MONOTONICALLY WITH THE ENERGY PULSE INCREASE FOR CELLS OF 10, 20, 40, AND 80 MM WIDTH. FOR CELLS OF 350 MM WIDTH THIS INCREASE CEASED AT HIGHER ENERGIES OF EXCITATION. IN THIS CASE (WITH 350 MM CELL) THE ENERGY OF THE SECOND STOKES COMPONENT INCREASED SIGNIFICANTLY REACHING A HIGHER VALUE THAN FOR THE FIRST ONE.

UNCLASSIFIED

USSR

UDC 576.851.49 (Shigella).083.3

SIVOLODSKIY, Ye. P., Military Medical Academy imeni S. M. Kirov

"A Medium for Isolating S. sonnei From Conjugation Mixtures With E. coli or Other Shigella Species"

Moscow, Laboratornoye Delo, No 9, 1971, pp 550-552

Abstract: Shigella sonnei has greater resistance to benzylpenicillin than other Shigella species and many E. coli strains. This difference is most evident on Endo's medium. Since the resistance to benzylpenicillin exhibited by the great majority of S. sonnei strains is not transmissible, Endo's medium with penicillin can be used to isolate episome recombinants of S. sonnei from conjugation mixtures with E. coli or other Shigella strains. The optimum concentration of the antibiotic that does not affect the reproduction of S. shigella while completely suppressing the growth of E. coli and other Shigellae is 120 units per ml of Endo's medium.

Acc. Nr: AP0044184

Ref. Code: UR 0016

PRIMARY SOURCE: Zhurnal Mikrobiologii, Epidemiologii, i Immunobiologii, 1970, Nr 2, pp 86-91

EPIDEMIOLOGICAL STUDY OF EPISOMIC RESISTANCE OF SONNE DYSENTERY BACILLI TO ANTIBIOTICS

Sivolodskiy, Ye. P.

The author studied the strains isolated during a food-borne outbreak of dysentery, caused by Sonne bacilli with episomic resistance to levomycetin (150 micrograms per ml) and tetracycline (100 micrograms per ml). Ten persons were infected with acute dysentery and 25 proved to be Shigella carriers. The index of manifestation of the infection was 0.2. There proved to be an intensive process of transmission of an episomic R-factor from Sh. sonnei to E. coli in the intestine of patients and carriers. Treatment with levomycetin, resistance to which was controlled in the causative agent by R-factor, proved to be of low efficacy (repeated isolation of Shigellae from 17 persons), and promoted, even in cases with positive therapeutic results, selection of E. coli with R-factor. All the strains of Sh. sonnei (31 primary and 17 repeated) retained the R-factor type during the outbreak. Thus, stability of R-factor type of Shigella can be used for establishment of epidemic connections.

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REEL/FRAME 19770669

6 DI

USSR

UDC 612.013.7:612.014.428

FAYTEL'BERG-BLANK, V. R. and SIVORINOVS'KIY, G. O., Odessa Agricultural Institute

"Effect of Ultrasound and Superhigh-Frequency Electromagnetic Field in the 3 cm Range on Oxidative Phosphorylation in Liver and Kidney Mitochondria"

Kiev, Fiziologichniy Zhurnal, No 6, 1972, pp 808-814

Abstract: Ultrasound at an intensity of 0.1 w/cm^2 applied to the abdomen of rats had no significant effect on oxidative phosphorylation in liver and kidney mitrochondria after 1 or 10 exposures. Sonication at 0.3 w/cm^2 intensified oxidative phosphorylation after a single exposure, but oxidation became completely dissociated from phosphorylation after 10 exposures. A single exposure to an electromagnetic field in the 3 cm range at intensities of 25, 50, and 100 μ w/cm^2 decreased the efficiency of phosphorylation in the mitochondria, whereas the parameters of phosphorylation returned to normal after 10 exposures. This suggests that ultrasound has cumulative effects while a low-intensity electromagnetic field permits adaptation.

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USSR

UDC: 537.533.3

KORSHUNOVA, Ye. N., SIVOV, A. N.

"Limits of Applicability of an Asymptotic Description of a Thin Lens"

Moscow, Radiotekhnika i Elektronika, Vol 17, No 4, Apr 72, pp 863-866

Abstract: In the quasioptical approximation, a dielectric lens is treated as a phase corrector, i. e. the amplitude and phase of the field passing through the lens are assumed to be equal in the cross section to the amplitude and phase of a plane wave at the output of an infinite equivalent dielectric plate. Strictly speaking, this approximation is true only for $ka \gg 1$, $a/b \gg 1$ (a and b are the longitudinal and transverse dimensions of the lens, $k = 2\pi/\lambda$). The authors determine the limits of applicability of the approximation by rigorously analyzing the problem of diffraction of a plane wave by a dielectric cylinder of elliptical cross section. For this purpose, use is made of a system of two one-dimensional Fredholm's integral equations of second kind which constitute the essence of the two-dimensional problem of diffraction by a dielectric body. The analysis relates to the case of E-polarization, i. e. the case where the electric vector is parallel to the generatrices of the cylinder. The results show that even for rather

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USSR

KORSHUNOVA, Ye. N., SIVOV, A. N., Radiotekhnika i Elektronika, Vol 17, No 4, Apr 72, pp 863-866

modest values of ka and a/b (of the order of 5) the asymptotic description of the lens gives an error in phase and amplitude calculations at the output of the order of 10%. The results of the paper were presented to the Fifth All-Union Symposium on Wave Diffraction and Propagation (June 1970). The authors thank B. Z. Katsenelenbaum for interest in the work.

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USSR

UDC 621.791.001.5:669.14+669.291:541.124/128

SIVOV, Ye. N., and KARTASHKIN, B. A., Candidates of Engineering Sciences, Moscow Institute of Aviation Technology

"Interaction of Molten Steel With Solid Niobium and the Formation of the Intermetallic Layers"

Moscow, Svarochnoye Proizvodstvo, No 1, Jan 73, pp 6-8

Abstract: Tests were conducted into the reaction processes occurring when steel and niobium are welded. Welding was done using an electron-beam unit at a vacuum of 5 x 10^{-5} mm Hg with the beam focused on the niobium base (VN-2AE niobium alloy), 0.5 mm thick, and a weighed portion of Kh18N10T steel (approximately 0.4 g). It was established that the basic processes involved in welding steel with niobium is the wetting of the niobium with the molten steel and the dissolving and subsequent diffusion of niobium into the steel. Temperature and length of contact of the molten metal with the solid metal are the determining factors of these processes. It was shown that the formation of intermetallic layers leads to a significant lowering of the mechanical properties of niobium+steel joints. For a layer thickness of 2-3 microns the weld joint strength is reduced from 55 to 37 kgf/mm^2. The established principles make it possible to evaluate the

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020017-4"

USSR

SIVOV, Ye. N., and KARTASHKIN, B. A., Svarochnoye Proizvodstvo, No 1, Jan 73, pp 6-8

probability of intermetallic layer formation both during welding and during performance of the weld seam at high temperatures. A method of calculating intermetallic layer thickness has been developed in relation to the process temperature and time of solid and liquid phase contact. Seven figures, 1 table, 5 bibliographic references.

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USSR

UDC 541.127:541.14+541.515

VOL'KENSHTEYN, F. F., MARKIN, Yu. A., SIVOV, Yu. A., and STYROV, V. V., Institute of Physical Chemistry, Academy of Sciences USSR, and Tomsk Polytechnic Institute

"Theory of Radical-Recombination Luminescence. 3. Kinetics of Radical-Recombination Luminescence"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 8, Aug 71, pp 1664-1672

Abstract: The kinetics of the build-up of radical-recombination luminescence (RRL) were first studied by V. A. SOKOLOV and A. N. GORBAN'. The present article is a continuation of these studies. Experiments were performed on a vacuum device with a mercury diffusion pump, permitting a vacuum of 10^{-5} torr. RRL was excited by atomic hydrogen obtained by means of a high-frequency discharge. Kinetic curves were plotted in the 300-550°K range at various hydrogen pressures. Powdered phosphors were applied from an alcohol suspension to glass substrates. It was found that the character of the kinetic isotherms differs for a very clean surface and one that is insufficiently clear. The kinetic curve rises in the former case, falls in the latter case due to the fact that the surface holds residues of pre-chemisorbed hydrogen in the

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VOL'KENSHTEYN, F. F., et al., Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 8, Aug 71, pp 1664-1672

charged state, the hydrogen being gradually removed from the surface as a result of the recombination reaction. After RRL halts, the content of the charged form of chemisorption on the surface first rises, then begins to decline as a result of desorption. The initial ascending branch of the curve is due to the fact that the system approaches steady-state electronic equilibrium in the absence of recombinations. In the case where the discharge is interrupted, then is on again after a certain pause, the "memory effect" is observed. The character of the RRL kinetics here depends on the length of the pause, due to the fact that the quantity of chemisorbed hydrogen remaining on the surface after the pause varies according to the pause length.

The authors thank V. A. SOKOLOV for discussing the results of the work and for his guidance in the experimental portion.

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USSR

UDC 615.847.8+615.837.3 .015.4

SIVORINOVSKIY, G. A., Central Institute of Health Resort Therapy and Physiotherapy, Moscow

"Mechanism of the Biological Activity of Ultrasonic and Very High Frequency Electromagnetic Fields in the Three-Centimeter Range"

Moscow, Voprosy Kurortologii Fizioterapii i Lechebnoy Fizicheskoy Kul'tury, No 3, 1973, pp 222-227

Abstract: White rats were subjected to the following either 1 or 10 times per day: 880 kilohertz ultrasonic fields with intensities of 0.1, 0.3, or 1.6 volts/cm^2 or an electromagnetic field with intensities of 25, 50, or 100 microvolts/cm^2. Both the temperature and blood sugar concentration of the rats increased after the treatment by variable amounts related to experimental conditions. The temperature before treatment gradually increased from about 36 to 38° over the 10-day experiment; however, the sugar level before and after treatment showed an overall decline. After 10 days the rats were killed and their mitochondria separated in order to study the effect of the fields on oxidative phosphorylation (OP). The 0.1 volt/cm^2 treatment did not alter the OP of the mitochondria. The once-a-day 0.3 volt/cm^2 treatment stimulated and the ten-per-day treatment suppressed the

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USSR

SIVORINOVSKIY, G. A., Voprosy Kurortologii Fizioterapii i Lechebnoy Fizicheskoy Kul'tury, No 3, 1973, pp 222-227

OP. Once-a-day treatment of all three electromagnetic field intensities suppressed the OP somewhat; but the OP was normal for the ten-per-day treatment.

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1/2 038 UNCLASSIFIED PROCESSING DATE--11SEP70

TITLE--POLYMERS PREPARED FROM BIS(4,CARBOXYPHENOXYMETHYL)(METHYL)PHOSPHINE OXIDE -U-

AUTHOR--BORISOV, G., SIVRIEV, KHR., TSVETKOV, E.N., KABACHNIK, M.I.

COUNTRY OF INFO--USSR

SOURCE--VYSOKOMOL. SOEDIN., SER. A 1970, 12(3) 620-5

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--POLYMER, ESTERIFICATION, ORGANIC PHOSPHORUS COMPOUND, CARBOXYL RADICAL, BENZENE DERIVATIVE, POLYESTER RESIN, PHTHALATE, THERMAL STABILITY, ADHESION, METAL TO NONMETAL BONDING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1989/0242 STEP NO--UR/0459/70/012/003/0620/0625

CIRC ACCESSION NO--AP0106898

UNCLASSIFIED

2/2 038 UNCLASSIFIED

CIRC ACCESSION NO--AP0106898 PROCESSING DATE--11SEP70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TRANSESTERIFICATION OF (4-MEO SUB2 CC SUB6 H SUB4 OCH SUB2) SUB2 P(O)ME (I) WITH HOROH (R IS (CH SUB2) SUB2, CH SUB2 CHME, (CH SUB2) SUB4, (CH SUB2) SUB5, (CH SUB2) SUB6, OR (CH SUB2 CH SUB2) SUB2 O) IN THE PRESENCE OF (ACO) SUB2 ZN AS THE CATALYST GAVE 87-90PERCENT POLYESTERS (II). SIMILARLY THE TRANSESTERIFICATION OF I,DI,ME TEREPHYHALATE MIXT. WITH HOROH GAVE A MIXT. OF II, CORRESPONDING POLYTEREPHTHALATES (III), AND COPOLYMERS. THE SOLY. OF II AND III IN CHCL SUB3 DIFFERS CONSIDERABLY, ENABLING SEPN. TURBIDIMETRIC TITRN. OF THE HOMOPOLYESTERS, COPOLYMER MIXTS., USING TETRACHLOROETHANE AS THE SOLVENT AND MEOH AS THE PRECIPITANT, DEMONSTRATED THE EXISTENCE OF THE COPOLYMER. THE COPOLYMER M.P. DECREASES WITH THE INCREASE CONTENT. THE THERMAL STABILITY OF II IS SUPERIOR TO THAT OF III; AT 300DEGREES IN THE AIR II LOSE 4-52PERCENT WT. IN 3 HR. II ARE SEMI TRANSPARENT; THEIR MELTS CAN BE DRAWN INTO FIBERS AND FORMED INTO FILMS. THE COPOLYMERS CONTG. LARGER THAN 20PERCENT I UNITS LOSE 4-5PERCENT WT. AT 300DEGREES IN THE AIR DURING 3 HR. THEIR ADHESION TO STEEL INCREASES TO 84 KG-CM PRIME2 WITH INCREASING I UNIT CONTENT.

UNCLASSIFIED

1/3 015 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--SYNTHESES BASED ON TETRAMETHYLOLPHOSPHONIUM CHLORIDE. SOME TRANSFORMATIONS OF TRIS(CHLOROMETHYL)PHOSPHINE AND

AUTHOR-(05)-TSVETHKOV, YE.N., BORISOV, G., SIVRIYEV, KH., MALEYANNAYA, R.A., KABACHNIK, M.I.

COUNTRY OF INFO--USSR

SOURCE--ZH. OBSHCH. KHIM. 1970, 40(2) 285-91

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL SYNTHESIS, ORGANIC PHOSPHORUS COMPOUND, CHLORINATED ORGANIC COMPOUND, THIOL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1985/1397 STEP NO--UR/0079/70/040/002/0285/0291

CIRC ACCESSION NO--AP0101489

UNCLASSIFIED

CIRC ACCESSION NO--AP0101489 PROCESSING DATE--18SEP70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ADDN. OF 350 G (HOCH SUB2) SUB4 PCL TO 1680 G PCL SUB5 IN 2 L. CCL SUB4 AT REFLUX AND HEATING 4 HR GAVE 97PERCENT (CLCH SUB2)SUB4 PCL (I), M. 198 TO 90DEGREES. I (200 G) TREATED WITH 60.7 G NAOH IN 300 ML H SUB2 O AT 10 TO 15DEGREES IN 400 ML H SUB2 O TO 400 ML CHCL SUB3 UNTIL ALK. TO PHENOLPHTHALEIN, GAVE 81.5PERCENT (CLCH SUB2) SUB3 P (II), B SUB2 56 TO 7DEGREES, D PRIME20 2.4204, N PRIME20 D 1.5530, WHICH ON STANDING DEPOSITED A FLAKY COLORLESS SOLID OF UNDETD. COMPN.; DURING EVAPN. OF THE SOLVENT FROM II THE TEMP. MUST BE HELD UNDER 90DEGREES AS EXPLOSIONS OCCURED AT 100DEGREES OR HIGHER. II AND 24PERCENT NAOH AT 10 TO 20DEGREES THEN AT REFLUX 3 HR UNTIL HOMOGENEOUS GAVE MEP(O)(CH SUB2 CL) SUB2 (III), B SUB7 149 TO 50DEGREES, M. 49 TO 50 DEGREES. III ALSO FORMED AFTER SIMILAR HEATING OF II WITH H SUB2 O ALONE. HEATED WITH NAOAC ACOH 6 HR AT 200DEGREES III GAVE THE DIACETATE, B SUB5 163 TO 4DEGREES, 1.2326, 1.4670. ALSO PREPD. FROM II AND ACOH ACONA 10 HR AT 150DEGREES. HEATING II WITH ETSH ETSNA 9 HR AT 130DEGREES IN ET SUB2 O IN AN AUTOCLAVE GAVE 84PERCENT (ETSCH SUB2) SUB3 P, B SUB2 137 TO 8DEGREES, 1.0749, 1.5665. MEP(O) (CH SUB2 CL)SUB2 (IV) AND ET SUB2 NH IN 15 HR AT 125DEGREES GAVE 49PERCENT MEP(O)(CH SUB2 NET SUB2) SUB2, B SUB2 TIMES SUB5 118 TO 19DEGREES, 0.9391, 1.4681.

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3/3 015 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0101489

ABSTRACT/EXTRACT--HEATING 3 G IV AND 10 G PH SUB3 P IN ME SUB2 NCHO 12 HR. AT 150 TO 60DEGREES GAVE ON ADDN. OF ME SUB2 CO 67.5PERCENT (PH SUB3 PCH SUB2)SUB2 P(O)ME PRIME POSITIVE PRIME POSITIVE2 CL PRIME NEGATIVE, M. 300 TO 1.5DEGREES. IV (4G) IN MEPH AND A REACTION PRODUCT OF 1.37 G NA AND 10 ML MEOCH SUB2 CH SUB2 OH IN MEPH GAVE IN 6 HR REFLUXING 53.5PERCENT MEP(O)(CH SUB2 OCH SUB2 CH SUB2 OME) SUB2 B SUB5 185 TO 6DEGREES, 1.1117, 1.4625. SIMILARLY WAS PREPD. 52PERCENT MEP (O) (CH SUB2 OCH SUB2 CH SUB2 OBU) SUB2, B SUB5 210 TO 11.5DEGREES, 1.0082, 1.4547. PHONA SIMILARLY GAVE 83PERCENT MEP(O)(CH SUB2 OPH) SUB2, M. 96 TO 7 DEGREES. SIMILARLY WAS PREPD. 80PERCENT P TOLYL ANALOG, M. 122 TO 4DEGREES; 79PERCENT P NITROPHENYL ANALOG, M. 169 TO 70DEGREES; M NITROPHENYL ANALOG, M. 90 TO 1DEGREES; P CARBO METHOXPHENYL ANALOG, M. 133 TO 5DEGREES; P CARBONYPHENYL ANALOG, M. 295 TO 6DEGREES; M ISOMER, M. 142 TO 3 DEGREES.

UNCLASSIFIED

UDC 546.18.181.1

USSR

TSVETKOV, YE. N., BORISOV, G., SIVRIEV, KH., MALEVANNAYA, R. A., and KABACHNIK, M. I., Institute of Organoelemental Compounds, Academy of Sciences USSR, and Institute of Organic Chemistry, Bulgarian Academy of Sciences, Sofia

"Syntheses Based on Tetramethylolphosphonium Chloride. Some Transformations of Tri(chloromethyl)phosphine and Methyldi(chloromethyl)phosphine Oxide"

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 2, Feb 70, pp 285-291

Abstract: The article describes some reactions of tri(chloromethyl)-phosphine and a number of transformations of methyldi(chloromethyl)-phosphine oxide. Reactions of tri(chloromethyl)phosphine with water and with sodium acetate in glacial acetic acid are accompanied by a pseudoallyl rearrangement and yield methyldi(chloromethyl)phosphine oxide and methyldi(acetoxymethyl)phosphine oxide respectively. Tri-(chloromethyl)phosphine reacts with sodium ethylmercaptide in the presence of an excess of ethyl mercaptan without a rearrangement to

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USSR

TSVETKOV, YE. N., et al., Zhurnal Obshchey Khimii, Vol 40, No 2, Feb 70, pp 285-291

give tri(ethylmercaptomethyl)phosphine. Substitution reactions were staged involving the displacement of chlorine atoms in methyldi(chloromethyl)phosphine oxide by dialkylamino, alkoxy, arylhydroxy and other groups.

USSR

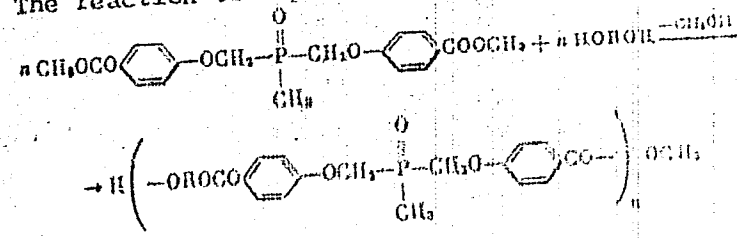
UDC: 541.64:678.674:86

BORISOV, G., SIVRIYEV, KHR., TSVETKOV, YE. N., KABACHNIK, M. I., Institute of Organic Chemistry of the Bulgarian Academy of Sciences, Sofia; Institute of Organo Elemental Compounds, Moscow, Academy of Sciences USSR

"Synthesis of Polymers from Di-(4-carboxyphenoxymethyl)methylphosphine Oxide"

Moscow, Vysokomolekulyarnyye Soyedineniya, Vol XII, No 3, Mar 70, pp 620-625

Abstract: Polyesters were synthesized from di-(4-carboxyphenoxymethyl)-methylphosphine oxide and the following glycols: ethylene glycol, propylene glycol-1,2, n-butylene glycol-1,4, pentamethylene glycol, hexamethylene glycol and diethylene glycol. Ester exchange was carries out in the presence of zinc acetate as a catalyst in an excess of glycol in a purified nitrogen atmosphere. The reaction took place as follows:



USSR

BORISOV, G., et al, Vysokomolekulyarnyye Soyedineniya, Vol XII, No 3, Mar 70, pp 620-625

The resultant polyesters in the fused state are semitransparent vitreous substances. After reprecipitation, the compounds are colorless or yellowish powders. Fibers may be drawn from the melts, and the solutions produce excellent films. They are soluble in chloroform, dimethylformamide, cresol, and nitrobenzene. It was found that the melting point of the polyester decreased with an increase in the number of methylene groups in the glycol. The polyesters are fairly heat resistant, losing from 4 to 20% of their total weight when heated to 300°C for 3 hrs. It was also found that the thermal stability of the polyester decreases with an increase in the number of methylene groups in the glycol. The polyester products adhere well to glass and metal surfaces and will not burn when removed from an open flame.

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USSR

UDC 632.954:635.132

SIVTSEV, M. V., and KUZNETSOVA, Ye. A., Simferopol University

"The Condition of Plastid Pigments in Carrot Leaves in Connection With the Application of the Herbicide Solan"

Moscow, Agrokhimiya, No 2, 1973, pp 134-137

Abstract: Field experiments were conducted in the Crimean piedmont in 1970-1971 with 70% soil moisture. Solan (3-chloro-2-methyl-p-valerotoluidide) was sprayed on sprouts in dosages of 3.0 and 6.0 kg./ha. Pigment content were determined spectrophotometrically, chlorophyllase activity by the method of Sud'ina, and the photochemical activity of the chloroplast homogenates by the difference in reconstituted chlorophyll in light and in darkness in a period of 5 minutes. The tests were repeated four times over 2 years. Results indicated that solan led to reduction of green pigmentation in the carrot leaves and reduction of carotinoid in the leaves and also an increase of carotinoid in the root crop. One reason for the reduction of green pigmentation may be an increase in the hydrolytic current of chlorophyllase. The greater the dosage of herbicide the lesser was the photochemical activity of chloroplasts.

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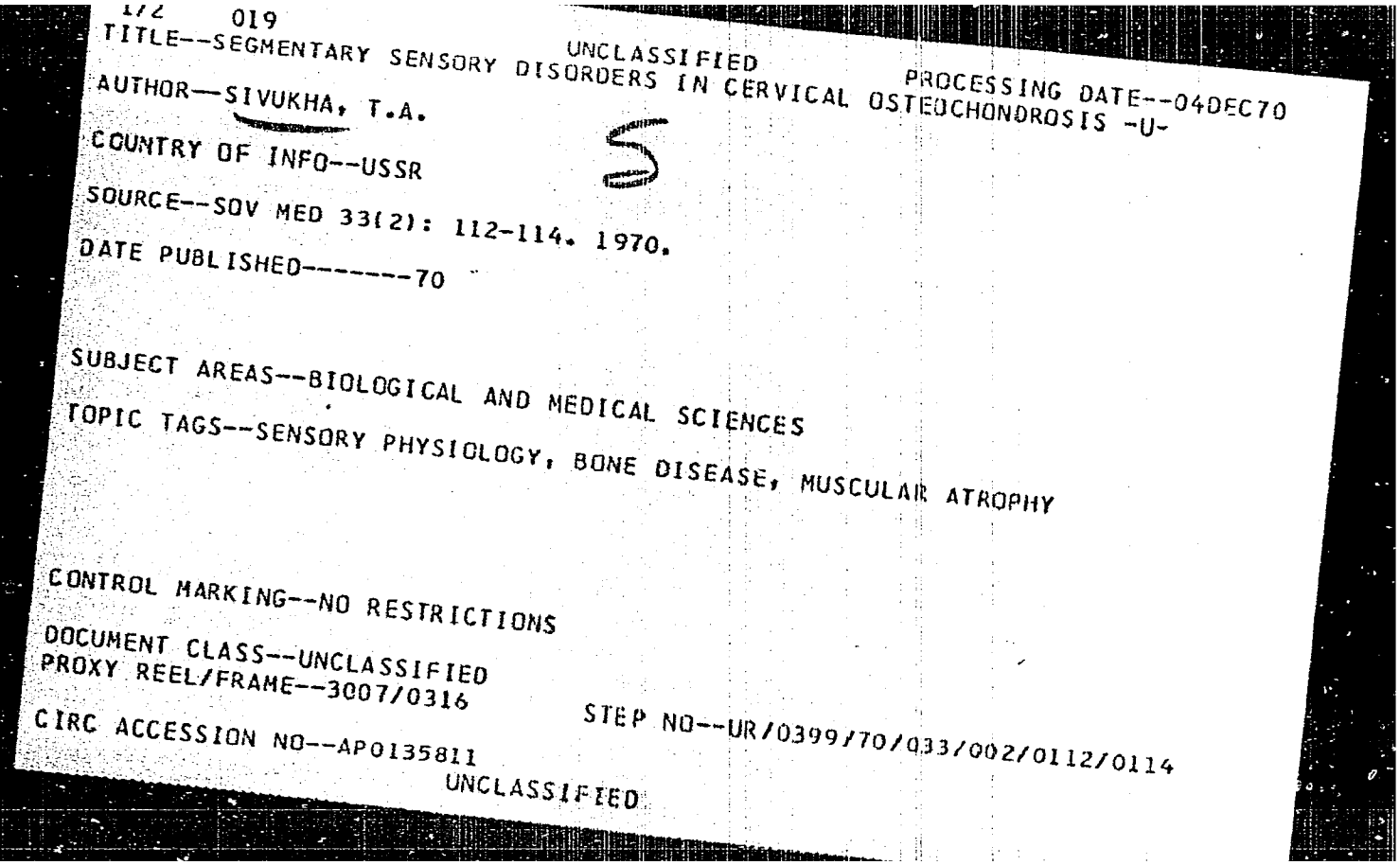


1/2 019 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--SEGMENTARY SENSORY DISORDERS IN CERVICAL OSTEOCHONDROSIS -U-

AUTHOR--SIVUKHA, T.A.

COUNTRY OF INFO--USSR

SOURCE--SOV MED 33(2): 112-114. 1970.

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--SENSORY PHYSIOLOGY, BONE DISEASE, MUSCULAR ATROPHY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3007/0316 STEP NO--UR/0399/70/033/002/0112/0114

CIRC ACCESSION NO--AP0135811
UNCLASSIFIED

2/2 019 UNCLASSIFIED

CIRC ACCESSION NO--AP0135811 PROCESSING DATE--04DEC70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SEGMENTAL DISSOCIATED SENSORY DISTURBANCES IN THE BODY, UNILATERAL OR BILATERAL, WERE REGISTERED IN 27 OF 111 PATIENTS EXAMINED FOR CERVICAL OSTEOCHONDROSIS. A LOWERED SURFACE SENSITIVITY WAS NOTED LARGELY IN THE SEGMENTS D SUB1-D SUB3-4, AND ALSO IN D SUB1-D SUB5-6. IN MOST PATIENTS SENSORY DISORDERS WERE SEEN TO OCCUR AGAINST THE BACKGROUND OF TENDON AND PERIOSTEAL REFLEXES IN ALL LIMBS, WITH MUSCLE ATROPHY OF THE UPPER EXTREMITIES ALSO APPARENT IN SOME CASES. SEGMENTAL SENSORY DISTURBANCES IN OSTEOCHRONDROSIS MAY BE ATTRITUTED TO VASCULAR DISORDERS. OWING TO COMPRESSION OF THE INFERIOR CERVICAL RADICULAR ARTERY, THE POSTERIOR HORN OR SPINAL THALAMIC PATHWAYS WITHIN THE ZONE OF THEIR CROSSING BECOME THE TARGETS FOR LESION.

UNCLASSIFIED

USSR

UDC: 621.528:621.59

GORIN, V. P., SHUMSKIY, K. P., LEONOV, V. V., IVANOV, A. Ye., ZAKHAROV, V. S., SIVUSHCHKOV, B. P., KUPRIYANOV, V. I., RODIONOV, A. Kh., BARANOV, V. S., SHTRAKHMAN, A. Ya.

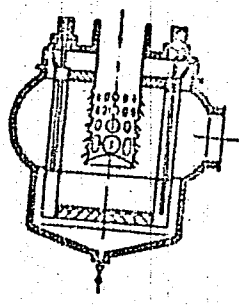
"A Cold Trap"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 10, Apr 72, Author's Certificate No 332253, Division F, filed 9 Jan 69, published 14 Mar 72, pp 136-137

Translation: This Author's Certificate introduces a cold trap for vacuum pumps. The device contains a thermally insulated housing with fittings for connecting it to the exhausting vacuum pump and to the space being evacuated. Located in the housing are optically opaque cryogenic panels cooled by a liquid coolant such as nitrogen. As a distinguishing feature of the patent, the effectiveness of the trap is improved by making the cooled panels in the form of a vertical annular louvred screen with cooling tubes on the faces and collectors for the upper and lower shields located in the cavities of the louvred screen. The screen and shields taken together form a closed nonhermetic chamber which accommodates a dis-

.IN, V. P. et al., USSR Author's Certificate No 332253

.ributor pipe coaxial with the annular screen and passing through the upper shield. The lower end of the distributor pipe is closed off, and holes are made in the side wall which have a diameter increasing downward along the flow of the gas-vapor mixture. The flow channels between the louvres in the vertical screen increase in cross sectional area toward the periphery, and the upper and lower shields are made with a greater hydraulic drag than the vertical screen.



2/2

USSR

UDC 542.48

PODBEREZHNYY, V. L., ROZEN, A. M., and SIYANKO, K. S.

"Desalination of Sea Water by Means of a Hydrophobic Heat Carrier"

Moscow, Vodosnabzheniye i Sanitarnaya Tekhnika, No 6, 1971, pp 8-13

Abstract: The essence of the desalination process based on hydrophobic heat carriers, in contrast to common distillation equipment, is that metallic heat conductors are replaced by the surface of a movable heat carrier immiscible with water. This makes it possible to carry out all heat exchange processes in direct contact of two phases: water-heat carrier and vapor-heat carrier, simplifying the apparatus, lowering the maintenance problems. In this study laboratory experiments have been utilized to show a feasibility of using simple components for water desalination: triple liquid exchanger, a condenser for mixing and an evaporation chamber. It has been shown that such a system works, and for the conditions studied shows good indicators. The need has been pointed out for developing equipment and finding conditions for industrial application of this process.

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USSR

UDC 681.142.01

SIYMON, A., Institute of Cybernetics, Academy of Sciences Estonian SSR

"A Method of Forming Vector-Time Switching Functions From Microprograms"

Tallin, Izvestiya Akademii Nauk Estonskoy SSR, Vol 22, No 1, 1973, pp 22-30

Abstract: The article considers the formation of vector-time switching functions (previously studied by the author) from microprograms. If the microprogram or system of microprograms is represented in the form considered by V. M. GLUSHKOV, the following procedure is required to obtain vector-time switching functions:

1) select the element structure (potential, potential-pulse, pulse, or logic delay element structure);

2) select the type of information coding;

3) form Boolean analogs of the excitation and output functions for the flip-flops of each register digit, disregarding the time relation between signals;

USSR

SIYMON, A., Izvestiya Akademii Nauk Estonskoy SSR, Vol 22, No 1, 1973, pp 22-30

4) note the type of signals in the resultant expressions (for example, use an asterisk (*) to denote a pulse signal, no asterisk for a potential signal);

5) use a timing chart to arrange the time coordinates for the existence of signals;

6) form expressions for the digit flip-flops;

7) determine what signals can be obtained from outside as the input signals of a given logic circuit;

8) delay a signal as necessary, with due regard for the type of signal;

9) form a vector-time switching function for the control part of the automaton that realizes a given system of microoperations;

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USSR

SIYMON, A., Izvestiya Akademii Nauk Estonskoy SSR, Vol 22, No 1, 1973, pp 22-30

10) from the operating conditions of a circuit, determine the maximum permissible time for the appearance of a signal at the δ-th output of a given logic circuit.

A detailed description is given of some of the steps of this algorithm. The method is suitable for a system of nonsimultaneous microprograms.

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USSR

SIYMON, A. UDC 577.4

"Some Problems of Structural Synthesis of Logical Circuits"

Izv. AN EstSSR, Fiz. mat. (News of the Estonian SSR Academy of Sciences. Physics and Mathematics), 1972, Vol 21, No 3, PP 253-257 (from RZh-Kibernetika, No 12, Dec 72, Abstract No 12V249)

No abstract

1/1

5

USSR

Foundry

7

UDC 669.185.1

NIKIFOROV, B. V., SMOKTIY, V. V., GUL'YEV, G. F., ORLOV, V. S., SIZENKO, A. S., SAFRONOV, YU. YA., KOLESNIK, V. D., BASHKATOV, YU. V., RUDNITSKIY, YA. N., FAYERSHTEYN, A. D., KAGAN, I. I., Institute of Ferrous Metallurgy in Dnepropetrovsk and Krivoy Rog Metallurgical Plant

"Operating Experience With a 55-Ton Converter With Increased Blowing Rate"

Moscow, Stal', No 3, Mar 70, pp 215-218

Abstract: Metallurgists of the Institute of Ferrous Metallurgy in Dnepropetrovsk and Krivoy Rog Metallurgical Plant have developed a technique for smelting in 55-ton converters with the oxygen feed rate almost doubled from 2.8-3 to 5-6 cu m/t per minute. A new-type tuyere is used, the nose of which has two rows of concentrically arranged nozzles with independent oxygen feed to each row. The increased blowing rate improves slag formation. The yield of acceptable product and the degree of improvement in slag formation are determined by the structural characteristics of the noses. Nose No. 5 was found to be

USSR

NIKIFOROV, B. V., et al., Stal', No 3, Mar 70, pp 215-218

the most effective of all those tested. The use of a tuyere with nose No. 5 reduces the blowing time by 40 percent and increases converter productivity by 20.5 percent. Steels K St. 5sp, K St. 3sp, 35GS, K St. 5 ps, K St. 3ps, K St.0m, 08kp, 10kp, K2, K3, KExp., K3kar, T, and Sv-08A were obtained without any decrease in the yield of acceptable product, deterioration of metal quality, or decrease in refractory lining resistance. In newly designed shops provision should be made for a gas circuit capacity and oxygen feed system sufficient for the operation of converters with a blowing rate of 5-6 cu m/(t. min).

2/2

SIZIKOVA, Ye. L.

REDUCTION OF TIME SPENT ON RECEIVING POLYCLINIC CARE

UDC: 362.121.006

[Article by I.P. Barskiy, Ye.L. Sizikova, Medical and Sanitary Center of Novomoskovskiy Chemical Combine; Moscow, Sovetskoye Zdravookhraneniye, Russian, No 9, 1972, submitted 5 April 1972, pp 16-19]

In the decree of the Central Committee of the CPSU "On further improvement in organizing socialist competitions," attention is given to the fact that there is still much to do in the nonindustrial area to improve the quality and standards of care. This applies in full measure to the operation of public health agencies and institutions, since not only the effectiveness of disease prevention and treatment but also the time spent by blue and white collar workers to receive medical care depend on the level of organization of their activity, while the psychological atmosphere prevailing in polyclinic and outpatient centers determines the emotional background against which the visitor will communicate with the medical worker or doctor. All this is particularly important in cities with a large industrial potential, where most of the adult population is at work during the day.

We can distinguish two variants of location of polyclinic institutions: the urban polyclinic which is located in the center of a rayon and takes care of all its population as well as industrial workers in the same rayon; polyclinic (medical and sanitary center) located near or on the premises of an enterprise which takes care primarily or exclusively of the employees of this and neighboring enterprises. Of course, industrial workers do not have the same opportunity to visit both types of polyclinic institutions and make use of them; the differences are related primarily to the time required. B.F. Zimovskiy and G.A. Malysheva indicate that a significant number (30%) of patients spend an average of more than one hour waiting to be seen by a doctor in a municipal polyclinic.

If workers visit a municipal polyclinic only after work, i.e. in the evening, this means that they spend part of their leisure time there, and this creates difficulties, especially when the visits are related to dispensary care, i.e. when the visitors feel well. If the polyclinic is close to their job, the situation is different: the closer it is the more individuals can go there during work time.

JPRS 57351
27 Oct 72

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002203020017-4"

USSR

UDC: 531.715.2 531.717.53

SIZONENKO, G. A., BOCHETS, G. N., SHUKIS, Z. E., GOKHBERG, Yu. L., KOLO-DYAZHNYY, A. P., VYKHRIST, N. S., MINAKOV, N. A.

"A Device for Measuring the Thickness of Nonmagnetic Coatings on the Inside of Pipes"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 7, Mar 72, Author's Certificate No 329373, Division G, filed 25 Mar 70, published 9 Feb 72, p 151

Translation: This Author's Certificate introduces a device for measuring the thickness of nonmagnetic coatings on the inside of pipes. The device contains a micrometer unit, a tubular bar, a movable rod, a force-measuring spring, and a head with a permanent magnet connected to the movable rod. The micrometer unit is fastened to the end of the tubular bar which is on the outside of the pipe to be inspected, and the movable rod is coaxial with the tubular bar and is coupled to the micrometer unit. The head with permanent magnet is fastened to the end of the tubular bar on the inside of the pipe to be inspected. As a distinguishing feature of the patent, the device is designed for improved accuracy in measuring the thickness of coatings on

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SIZONENKO, G. A. et al., USSR Author's Certificate No 329373

the inside of long pipes, and especially those of small cross section. Inside the measurement head is a modular mechanism made up of two rollers wound with a flexible thread fastened by one end to the permanent magnet, and connected by the other end to the force-measurement spring. Also included in the device is a microcontact indicator of the position of the magnet fastened to one of its ends.

UNCLASSIFIED

TITLE--SOLVENT EXTRACTION OF COPPER(II) AND NICKEL(II) AS THEIR CHELATE COMPOUNDS WITH 1,PHENYL,3,METHYL,4,BENZOYL,5,PYRAZOLONE -U-

PROCESSING DATE--23OCT70

AUTHOR-(02)-ZOLOTOV, YU.A., SIZONENKO, N.T.

COUNTRY OF INFO--USSR

SOURCE--ZH. ANAL. KHIM. 1970, 25(1), 54-8

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--SOLVENT EXTRACTION, COPPER, COMPLEX COMPOUND, NICKEL

CONTROL MARKING--NO RESTRICTIONS

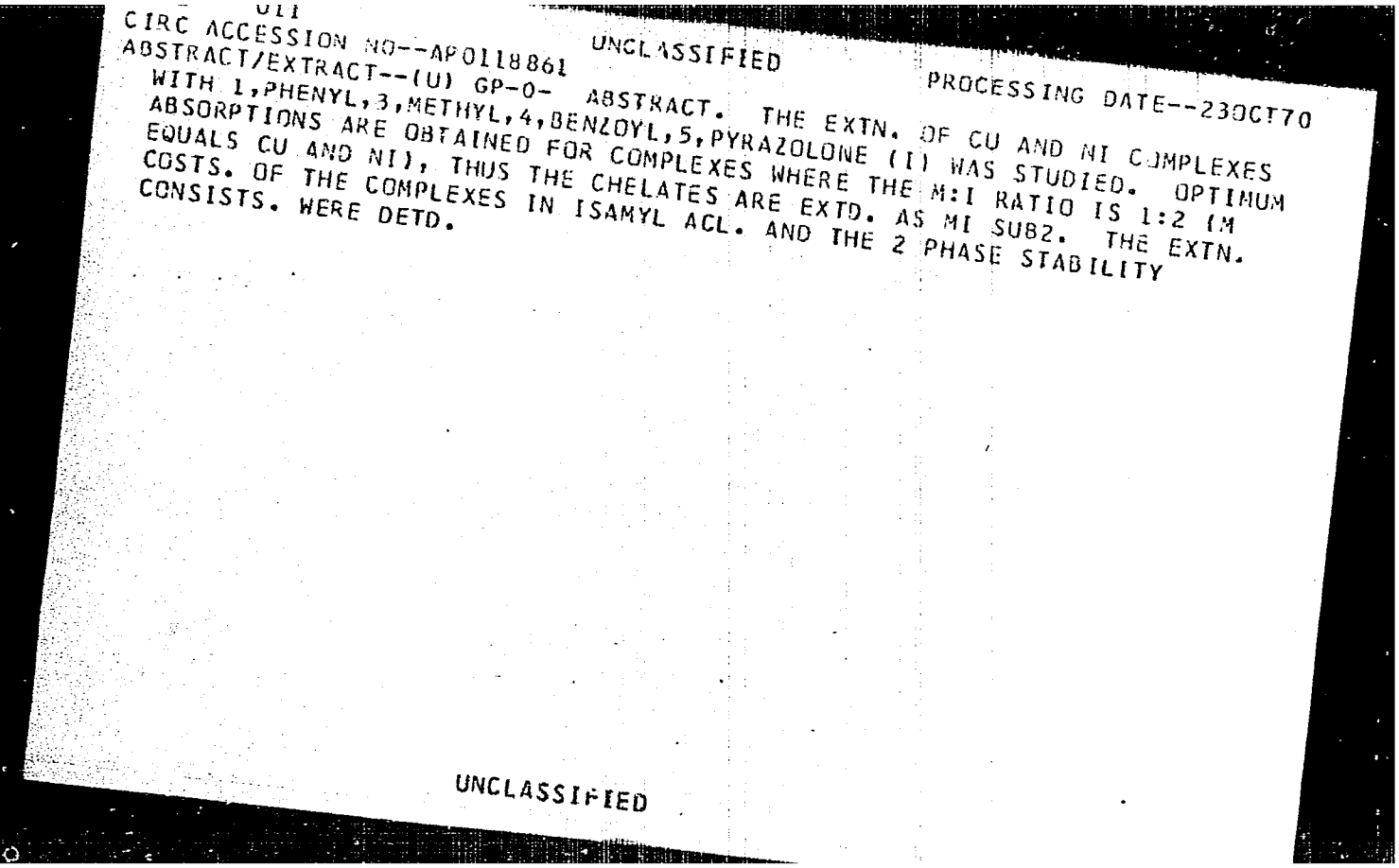
DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/1899

STEP NO--UR/0075/70/025/001/0054/0058

CIRC ACCESSION NO--AP0118861

UNCLASSIFIED



UNCLASSIFIED

CIRC ACCESSION NO--AP0118861 UNCLASSIFIED PROCESSING DATE--23OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EXTN. OF CU AND NI COMPLEXES WITH 1,PHENYL,3,METHYL,4,BENZOYL,5,PYRAZOLONE (I) WAS STUDIED. OPTIMUM ABSORPTIONS ARE OBTAINED FOR COMPLEXES WHERE THE M:I RATIO IS 1:2 (M EQUALS CU AND NI), THUS THE CHELATES ARE EXTD. AS MI SUB2. THE EXTN. COSTS. OF THE COMPLEXES IN ISAMYL ACL. AND THE 2 PHASE STABILITY CONSISTS. WERE DETD.

UNCLASSIFIED

USSR

UDC 533.951.8

PYATAK, A. I., SIZONENKO, V. L., and STEPANOV, K. N.

"Nonpotential Instabilities of Plasmas With Transverse Current, Part 1"

Leningrad, Zhurnal Tekhnicheskoy Fiziki, No 3, 1973, pp 475-482

Abstract: Plasmas with a current flowing at right angles to the external magnetic field are unstable with respect to the oscillation of high-frequency, small-scale instabilities with frequency and increments of build-up higher than the ion cyclotron frequency. This paper discusses the excitation of short-wave, nonpotential oscillations in such a plasma. It is assumed that the frequencies and increments of build-up of the oscillations are higher than the ion cyclotron frequency and are much lower than the electron cyclotron frequency, while the transverse wavelength is assumed much shorter than the Larmor ion radius. The effect of the magnetic field on the ions during the development of the instabilities can then be neglected. The further assumption is made that the transverse wavelength is much less than the characteristic dimensions of the nonuniformity of density and the magnetic field, which condition permits a local approximation of the problem. Hydrodynamic and hot-ion instabilities in the plasma are also investigated. The authors express their gratitude to A. B. Mikhaylovskiy for his critique and advice.

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USSR

UDC 533.951.8

PYATAK, A. I., SIZONENKO, V. L., and STEPANOV, K. N.

"Nonpotential Instabilities of Plasmas With Transverse Current, Part 2"

Leningrad, Zhurnal Tekhnicheskoy Fiziki, No 3, 1973, pp 483-488

Abstract: This article is the second part of a paper begun in the same issue of the same journal named above (pp 475-482). This second part is concerned with short-wave, nonpotential instabilities in a plasma with a transverse current and considers the excitation of nonpotential oscillations in a non-isothermal plasma with hot electrons and cold ions as well as similar situations in an isothermal plasma. It is shown that if the electron temperature is much higher than the ion temperature, long-wave electromagnetic oscillations with a phase velocity of the order of the electron thermal velocity along the magnetic field may be generated in addition to short-wave ionic-sonic oscillations. The instabilities in a plasma whose electron temperature substantially exceeds the ion temperature are investigated, as well as those in a plasma of equal electron and ion temperatures. The authors note that the unstable oscillations excited by resonance particles also are important factors in heating the plasma electrons and ions.

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USSR

STEPANOV, K. N.; SIZONENKO, V. L. (Physicotechnical Institute of the Ukrainian Academy of Sciences, Khar'kov)

"Instability of a Plasma with a Current in a Magnetic Field"

Kiev, Ukrainskiy Fizicheskiy Zhurnal; March, 1971; pp 438-45

ABSTRACT: The article deals with the excitation of short-wave, ionic cyclotron plasma oscillations with a wavelength which is considerably less than the Larmor radius of ions ρ_i by electrons drifting under the electrical field effect along the magnetic field with a velocity less than the electron heat velocity. It is shown that the frequency of such oscillations, which is within the range $n\omega_{Hi} < \omega_k < (n+1)\omega_{Hi}$, for $n \sim k\rho_i \gg 1$, can not be close to a frequency which is a multiple of the ionic cyclotron frequency ω_{Hi} (k is the wave vector). That is why cyclotron damping of such oscillations is small and they can be easily excited by drift electrons.

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USSR

STEPANOV, K. N.; SIZONENKO, V. L. (Khar'kov State University im. A. M. Gor'kogo; Physicotechnical Institute of the Ukrainian Academy of Sciences, Khar'kov)

"Anomalous Resistance of a Plasma in a Strong Magnetic Field"

Kiev, Ukrainskiy Fizicheskiy Zhurnal; March, 1971; pp 429-37

ABSTRACT: The authors consider the anomalous resistance and turbulent heating of a strongly nonisothermic ($T_e \gg T_i$) plasma in a strong magnetic field ($\omega_{He} \gg \omega_{pe}$) which are caused by electron scattering by "beats" of ion-sound turbulent pulsations. The level of turbulent noises is evaluated from the condition that stabilization of ion-sound instability starts when resonance electrons responsible for the build-up of oscillations are knocked out under the effect of oscillation from resonance in phase with the oscillation period of the wave. In this case, the electron velocity u_e in the external field E is shown to be equal to

$$u_e = v_{Te}(eE/m_e v_{Te}\omega_{pi})^{1/2} ,$$

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USSR

STEPANOV, K. N., et al., Ukrainskiy Fizicheskiy Zhurnal, Mar 71, pp 429-437

where $v_{Te} = (T_e/m_e)^{\frac{1}{2}}$; i.e., u_e is practically independent of E. It also follows that the plasma resistivity is nearly proportional to E. This ratio is in good quantitative agreement with the results of experiments on the "Tokomak" TM-3.

Data on the rates of electron and ion heating of the plasma are evaluated, and it is shown that the ions heat up considerably faster than the electrons.

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USSR

UDC 778.35:77.022.5

SIZOV, A. I.

"Selection of Optimum Exposure and Its Automatic Control in Aerial Photography"

Moscow, Zhurnal Nauchnoy i Prikladnoy Fotografii i Kinematografii, No 6, Nov-Dec 70, pp 401-405

Abstract: The article deals with an approach to light-sensitivity criteria from the point of view of selection of the exposure which makes it possible to obtain the maximum quantity of fine details on an aerial photograph. In view of the fact that the brightness range of the optical image may be much greater than the resolvometric range of the photographic system, sectors whose brightness differs sharply from the average level (including clouds) should not be taken into account when selecting the optimum exposure. Brief consideration is given to methods of controlling exposure, with an evaluation of their errors, including programmed and automatic methods -- on the basis of integral brightness, on the basis of minimum brightness, the integral

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USSR

SIZOV, A. I., Zhurnal Nauchnoy i Prikladnoy Fotografii i Kinematografii, No 6, Nov-Dec 70, pp 401-405

method with selection of the brightness video signal on the basis of its level, and the integral method with selection of the brightness video signal on the basis of the level of the brightness coefficient. The last-mentioned method of controlling exposure is new, and is the most precise one. 5 figures, 5 bibliographic entries.

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UDC 533.6.011.5

USSR

PRIKHOD'KO, V. D., and SIZOV, A. M., Volgograd, Leningrad

"On Approximate Calculation of Flow Parameters at Interaction of Supersonic Jets"

Moscow, Izvestiya Akademii Nauk USSR, Mekhanika Zhidkosti i Gaza, No 1, Jan-Feb 73, pp 168-170

Abstract: A study was made of an approximate method of calculation of the parameters of a compound air jet outflowing from four nozzles with interaction of individual jets on the initial gas-dynamic section. Considered is an outflow into a flooded space at subcritical flow conditions with associated interference shock wave. A calculation schema is presented for the coefficient of losses in total pressure as the gas moves through shock waves developing by interaction of jets. The distribution of the Mach number on the axis of the compound jet is evaluated. The comparison of experimental and calculated data shows a sufficient coincidence. Two figures, six formulas, three bibliographic references.

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UDC 669.782.053.2

USSR

SHURSHAKOV, A. N., DERGUNOVA, V. S., MEYERSON, G. A., SIZOV, B. A.

"Study of the Effect of Boron Additives on the Carburization of Silicon"

Tugoplavk. karbidy — V sb. (Refractory Carbides — collection of works), Kiev, Naukova Dumka Press, 1970, pp 77-82 (from RZh-Metallurgiya, No 4, Apr 71, Abstract No 4G219)

Translation: The effect of boron additives on the carburization rate of molten Si and the growth of the carbide layer formed at the graphite-melt interface is investigated. On introducing boron additives in the amount of 14%, the thickness of the carbide layer at the graphite-melt interface increases, and the C content in the melt increases simultaneously. There are 3 illustrations, 1 table, and a 9-entry bibliography.

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UDC 639.2.081.7

USSR

SHISHKOVA, Ye. V., NIKOLAYEV, A. S., and SIZOV, I. I.

"Noises Produced by Kamchatka Crabs"

Moscow, Rybnoye Khozyaystvo, No 3, Mar 71, pp 22-25

Abstract: Since sonic devices are not very useful for locating crabs at the bottom of the sea, the feasibility of detecting the presence of crabs by recording ocean sounds was investigated. The study was performed off the west coast of Kamchatka. Ocean sounds were recorded by means of hydrophones lowered into water in areas known to be inhabited by schools of crabs, while similar sound records were taken from an aquarium kept onboard a ship and filled with crabs caught in the same area. Analysis of the records revealed that crabs produce specific high-frequency noises which tend to form brief "explosion waves" as a result of many crabs joining in brief choir-type vocalizations. Due to the specific pattern and an intensity 8-20 decibels above the ocean background noise, the method appears to be useful for practical application.

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Acc. Nr. AP0034192 Abstracting Service: CHEMICAL ABST. 3-70 Ref. Code NE 0000

62032g Annular polarimeter for measurements of nucleon polarization in nuclear reactions. Oehler, H.; Krivopustov, M. I.; Schirmer, Gustav; Sizov, I. V.; Asfour, F. Joint Inst. Nucl. Res., Dubna, USSR). *Nucl. Instrum. Methods* 1970, 77(2), 293–9 (Eng). The method of the annular polarimeter for measuring the N polarization in nuclear reactions is described, and its advantages against the usual left-right asymmetry method are shown. The calcns. of the geometrical factor and the av. analyzing power were carried out by using the Monte-Carlo method. For example, the polarization of p from the reaction $^{12}C(^3He,p_0)^{14}N(g.s.)$ at $E(^3He) = 2.87$ MeV was measured as a function of the scattering angle by using the elastic scattering $^{12}C(p,p)^{12}C$ as an analyzer. RCNE

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REEL/FRAME
19710845

UNCLASSIFIED PROCESSING DATE--23OCT70

1/2 020

TITLE--DOSE DISTRIBUTIONS IN ECCENTRIC ROTATION GAMMA IRRADIATION -U-

AUTHOR-(04)-BELOV, S.A., KAVESHNIKOVA, S.V., SIZOV, P.P., RATNER, T.G.

COUNTRY OF INFO--USSR

SOURCE--MEDITSINSKAYA RADIOLOGIYA, 1970, VOL 15, NR 5, PP 86-93

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--GAMMA IRRADIATION, RADIOTHERAPY, RADIATION DOSAGE

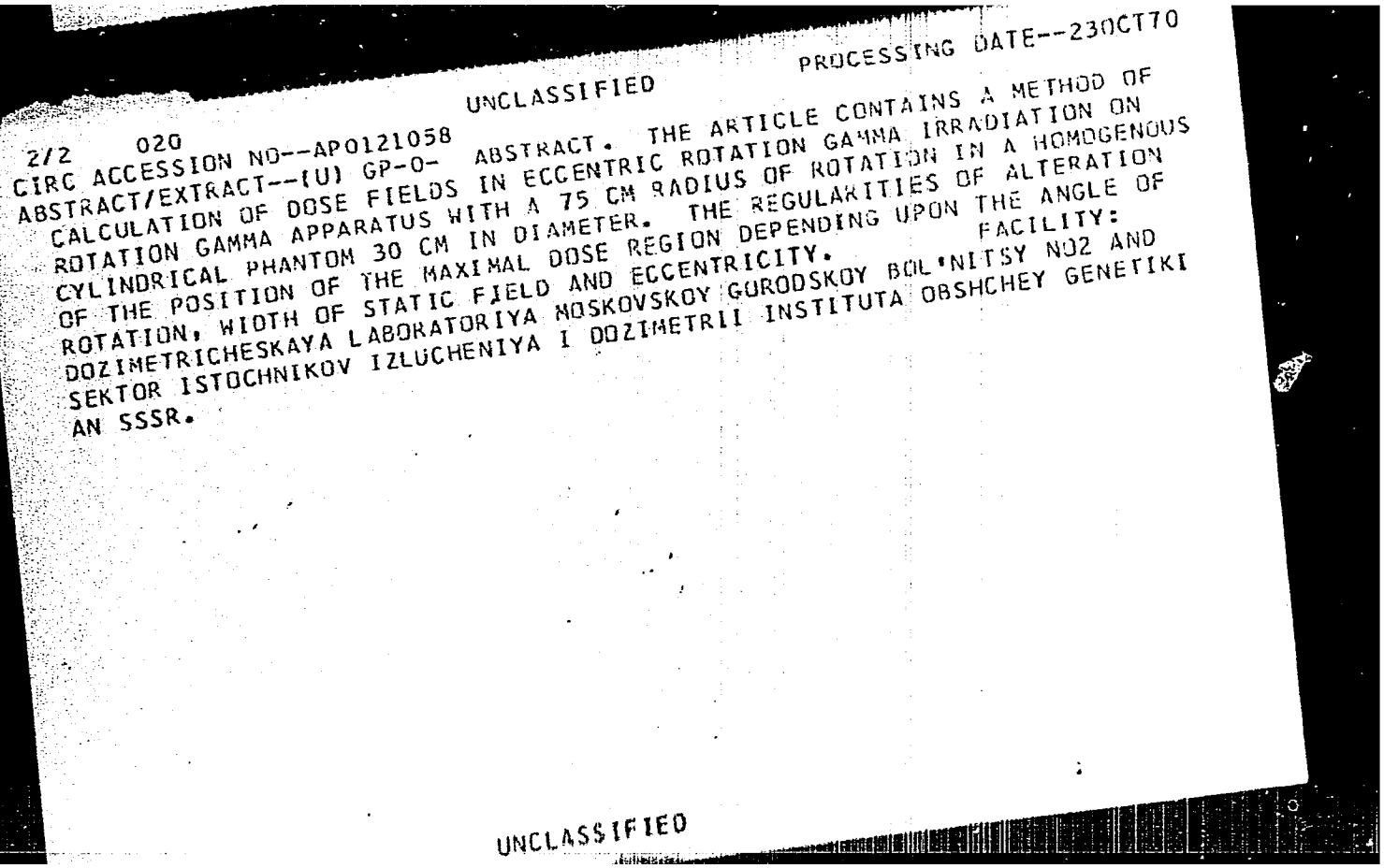
CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED STEP NO--UR/0241/70/015/005/0086/0093

PROXY REEL/FRAME--1998/0370

CIRC ACCESSION NO--AP0121058

UNCLASSIFIED



UNCLASSIFIED

2/2 020 PROCESSING DATE--230CT70

CIRC ACCESSION NO--AP0121058

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ARTICLE CONTAINS A METHOD OF CALCULATION OF DOSE FIELDS IN ECCENTRIC ROTATION GAMMA IRRADIATION ON ROTATION GAMMA APPARATUS WITH A 75 CM RADIUS OF ROTATION IN A HOMOGENOUS CYLINDRICAL PHANTOM 30 CM IN DIAMETER. THE REGULARITIES OF ALTERATION OF THE POSITION OF THE MAXIMAL DOSE REGION DEPENDING UPON THE ANGLE OF ROTATION, WIDTH OF STATIC FIELD AND ECCENTRICITY.

FACILITY: DOZIMETRICHESKAYA LABORATORIYA NOSKOVSKOY GORODSKOY BOL'NITSY NO2 AND SEKTOR ISTOCHNIKOV IZLUCHENIYA I DOZIMETRII INSTITUTA OBSHCHEY GENETIKI AN SSSR.

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--27NOV70

1/2 025

TITLE--ATTACHMENT OF ELECTRONS AND DISSOCIATION OF MOLECULES UNDER ELECTRONEGATIVE GAS GLOW DISCHARGE CONDITIONS. I. ROLE OF DISSOCIATIVE

AUTHOR-(03)-MAKSIMOV, A.I., SIZOV, V.D., TARAYSHKINA, L.I.

COUNTRY OF INFO--USSR

SOURCE--KHIM. VYS. ENERG. 1970, 4(3), 278-9

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, PHYSICS

TOPIC TAGS--GLOW DISCHARGE, ELECTRONEGATIVITY, ELECTRON CAPTURE, ETHANOL, CARBON TETRACHLORIDE, CHLORINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED STEP NO--UR/0456/70/004/003/0278/0279

PROXY REEL/FRAME--3008/0875

ACCESSION NO--AP0137903 UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--27NOV70

2/2 025
CIRC ACCESSION NO--AP0137903
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE POTENTIAL GRADIENT AND THE RADIAL DISTRIBUTION OF INTEGRAL INTENSITIES OF RADIATION IN THE POS. COLUMN IN THE GLOW DISCHARGE OF ETOH, H SUB2 O, CCL SUB4, AND CL WERE DETD. AT P EQUALS 5 TIMES 10 PRIME NEGATIVE2 MINUS 5 TORR AND DISCHARGE CURRENTS OF 0.25-20 ,S OM YINRD 10-26 MM IN DIAM. AT P EQUALS 0.5-3 TORR, EXPTL. FIELDS AGREED WITH CALCD. VALUES BASED ON THE ASSUMPTION OF ATTACHMENT OF ELECTRONS TO MOLS. THE RADIAL DISTRIBUTION OF INTENSITIES DIFFERED FROM THE DIFFUSION THEORY, AND THE DIFFERENCE INCREASED WITH THE CROSS SECTION OF CAPTURE OF ELECTRONS BY MOLS.
FACILITY:
FILIAL INST. KHIM. FIZ., CHERNOGOLOVKA, USSR.

UNCLASSIFIED

UDC 621.378.325

USSR

VANYUKOV, M. P., Doctor of Sciences, Deceased, KRYZHANOVSKIY, V. I., SEREBRYAKOV, V. A., SIZOV, V. N., STARIKOV, A. D.

"Multichannel Neodymium Glass Laser System with Picosecond Radiation Pulse Length"

Optiko Mekhanicheskaya Promyshlennost', No 12, 1972, pp 31-32.

Abstract: A powerful three-channel laser system made with neodimium glass with picosecond pulse length and an angular divergence near the diffraction limit is described. The output radiation energy of the device reaches 1,000 j with a pulse power of 10^{14} w.

UDC 621.375.82

USSR

VANYUKOV, M. P., ISAYENKO, V. I., PASHININ, P. P., SEREBRYAKOV, V. A. SIZOV, V. N., STARIKOV, A. D.

"Formation of Powerful Pulses With a Steep Leading Front in a Laser System With Passive Nonlinear Elements"

V sb. Kvant. elektronika (Quantum Electronics -- Collection of Works), No. 1, Moscow, 1971, pp 35-41 (from RZh-Fizika, No 7, Jul 71, Abstract No 7D1147)

Translation: The change in the length of light pulses in passage through an illuminating medium of varying transparency was investigated. A nonmonotonic shortening of the length of the trailing pulse was observed under a change in the density of the light load. There was established a dependence of the region of maximum concentration of the light pulse on the magnitude of the light load for various concentrations of the illuminating solutions. There was also established an anomalous change in the process of illumination of a metallized film under its illumination by powerful light radiation. It is proposed that the effects observed be used for the formation of short pulses with a steep leading front. A neodymium glass laser system with a pulse length of 5-7 nsec, a steepness of the leading front of $\sim$ 1 nsec, and a radiation power of 20 Gw was developed. 10 ref. Authors abstract

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USSR

UDC: 621.373:530.145.6

VANYUKOV, M. P., ISAYENKO, V. I., PASHININ, P. P., SEREBRYAKOV, V. A., SIZOV, V. N., STARIKOV, A. D.

"Shaping of High-Power Pulses With a Steep Leading Edge in a Laser System With Passive Nonlinear Elements"

V sb. Kvant. elektronika (Quantum Electronics--collection of works), No 1, Moscow, 1971, pp 35-41 (from RZh-Radiotekhnika, No 5, May 71, Abstract No 5D177)

Translation: An investigation is made of the change in duration of light pulses during passage through illuminated media of different transparencies. A nonmonotonic reduction in pulse duration after passage through the medium is observed when there is a change in the density of the light load. A relationship is established between the region of maximum constriction of the light pulse and the magnitude of the light load for different concentrations of transilluminated media. An anomaly is found in the curve for the process of transillumination of a metallized film when it is exposed to intense light flux. Recommendations are made on using the observed effects for shaping short pulses with a steep leading edge, leading to development of a laser system based on neodymium glass with a pulse length of 5-7 nsec with a rise time of approximately 1 nsec and emission power of 20 GW. Five illustrations, bibliography of ten titles. Resumé.

UDC: 061.6:91

USSR

SIZOV, V. P., Candidate of Technical Sciences, TSNIIOMTP

"Upgrading the Role of Structural Materials Testing Laboratories"

Moscow, Beton i Zhelezobeton, No 5, May 73, pp 34-35

Abstract: The author points out the lamentable state of structural materials testing laboratories by pointing out that they are not in a position to maintain existing state standards, are ill-equipped, do not have adequately trained staffs, and rate low on the pay scale. He suggests that their duties and obligations be defined and that they be headed by chief construction engineers. They must be put in position to maintain state standards. This can be done by making certain that the USSR State Committee on Construction assigns manufacturers for the equipment necessary to maintain the prescribed state standards, while the manufacture of this equipment should be entrusted solely to the plants of the Ministry of Instrument Building, Automation and Control. The repair work on all of this laboratory equipment should be entrusted to the Association "Etalon" of the State Standards Committee of the USSR.

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UDC 621.317.6(088.8)

USSR

KOVALENKO, N. V., ROSLYAKOV, N. M., SIZOV, V. P., TARASENKO, O. M., KONEV, L. N.

"Device for Measuring the Phase Characteristics of Antennas"

USSR Author's Certificate No 272401, Filed 12 Dec 68, Published 22 Sep 70 (from RZh-Radiotekhnika, No 4, Apr 71, Abstract No 4A314P)

Translation: A device is proposed for measuring the phase characteristics of antennas. It is based on using the modulation of the reflected field and comprises a generator, a receiver, a low frequency reference signal amplifier, two transmitting antennas, the investigated receiving antenna and an auxiliary receiving antenna. In order to improve the measurement accuracy, Π-modulators are included in the wave guide channels of the investigated and auxiliary antennas, and a mixer is connected to the timer outputs.

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USSR

UDC: 621.317.328

KOVALENKO, N. V., ROSLIAKOV, N. M., SIZOV, V. P., TARASENKO, O. M., KONEV, L. N.

"A Device for Measuring the Phase Characteristics of Antennas"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 19, 1970, Author's Certificate No 272401, filed 12 Dec 68, p 50

Abstract: This author's certificate introduces a device for measuring the phase characteristics of antennas. The device is based on using the modulation of a reflected field, and consists of an oscillator, a receiver, an amplifier for the low frequency of the reference signal, two transmitting antennas, the receiving antenna to be studied, and an auxiliary receiving antenna. As a distinguishing feature of the patent, measurement precision is improved by connecting π-modulators in the waveguide channels of the antenna to be studied and the auxiliary antenna, and a mixer is connected to the timer outputs.

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UDC 537.591.15

USSR

VERNOV, S. N., Y'EGOROV, T. A., Y'EFIMOV, N. N., KOLOSOV, V. A., KORYAKIN, V. D., KRASIL'NIKOV, D. D., KUZ'MIN, A. I., KULAKOVSKAYA, V. P., MAKSIMOV, S. V., NESTEROVA, N. M., NIKOL'SKIY, S. I., ORLOV, V. A., SLEPTSOV, I.YE., SIZOV, V. V., KHRISTIANSEN, G. B., and SHAMSUTDINOVA, F. K.

"Preliminary Results of Recording Extensive Showers on a Recording Array in Yakutsk"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, Vol 35, No 10, Oct 71, pp 2098-2101

Abstract: Experiments are described in which attempts were made at determining the energy spectrum, composition, and anisotropy of cosmic rays within the range of energy 10^{17} to 10^{18} ev. It is desired to extend the range to cover 10^{19} ev and above. Of a particular interest are the following problems: do the rays originate within the Galaxy or in metagalactic regions, what is the direction from which they arrive, and how Cerenkov radiation produced by them is distributed within the atmosphere. The test equipment consists of 13 recording points distributed over an area of 3 km², with a central timing control point. The output spectrum was measured over a period of 29.5 hours. 82 showers were noted during that period, with the axes falling within the

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VERNOV, S. N., et al., Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, Vol 35, No 10, Oct 71, pp 2098-2101

array area. The orientation of the axis was found by the "triangulation" method, comparing the time of arrival of the showers at different recording points. An analytic expression is given in the paper for the integral output spectrum of extensive showers at sea level for the interval of N between 2×10^7 and 2×10^8. The intensity, determined with this formula, appears to be 2 to 3 times as great as recorded elsewhere. Distribution of Cerenkov light with respect to the shower axis was determined by observations conducted on clear, moonless nights. It was found to be similar to that of the primary gamma quanta, but it decayed with the distance from the axis more slowly than the amount of charged particles ($R^{-2.5}$ as against $R^{-3.3}$ for charged particles).

Examination of the energy spectrum of primary particles lead to the conclusion that the electromagnetic component is responsible for 80% of it. Dependence of primary energy on the output N was established, and on the basis of this relation the integral spectrum was computed. The coefficient connecting these two magnitudes was found to be twice as high as the one previously accepted elsewhere.

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In the final analysis, variation of Cerenkov light at the primary particle energy of 3.6×10^{16} ev and the output (intensity) of 1.5×10^{7} particles at sea level is given, as well as the expected distribution of the nuclear components of primary rays.

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UDC 621.318.13

USSR

SIZOV, YE.A., ROZANOVA, V.M.

"Ultrafine Tapes Of Soft Magnetic Alloys"

V sb. Vses. simpoz. po ferromagnit. materialam, 1969 (All-Union Symposium On Ferromagnetic Materials, 1969--Collection Of Works), L'vov, L'vov university, 1971, p 107 (from RZh:Elektrotekhnika i energetika, No 6, June 1972, Abstract No 6B28)

Translation: The industrial technology was developed in the USSR for the production of tapes from soft magnetic alloys 1.5 micron thick and (under laboratory conditions) 0.5 micron thick. The magnetic properties of the tape are close to the properties of evaporated films. In comparison with films, the tapes are characterized by a high uniformity of composition, a more perfect crystalline structure, and the possibility of varying the structure; The physical properties of a 0.7--3 micron thick tape are studied. The dependence of the composition on the thickness and temperature is considered. 2 ref.

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