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USSR

UDC 614.718-078

RUDENKO, N. M., Military Medical Academy imeni Kirov, Leningrad

"Test Results of a New Type of Bacteria Trap"

Moscow, Zhurnal Mikrobiologii, Epidemiologii, i Immunologii, No 9, Sep 70, pp 124-126

Translation: Simple construction and high efficiency in trapping various concentrations of microflora are two requirements for liquid-system traps for microorganisms in the air. In addition, concentration and identification of microorganisms in bioaerosol samples taken into the liquid medium should be convenient. Therefore, in any developmental work with bacteria traps, considerable attention is given to the filtration of air through various liquids and aerosols. Many investigators have shown this system to be highly effective in trapping aeroplankton (Emmerich, 1883; Milyavskaya, 1945; Shafir and coauthors, 1957; Albrecht, 1958; Karpukhin, 1962; Rudenko, 1966, 1967; Artenstein and Cadigan, 1968).

The containers equipped with nozzle-type atomizers which are described in this paper represent a further improvement in the instruments which we developed with Boykov in 1956. Several mechanisms for trapping aerosols are

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RUDENKO, N. M., Zhurnal Mikrobiologii, Epidemiologii, i Immunologii, No 8, Sep 70, pp 124-126

combined in these units: ortho- and parakinetic coagulation, ascending and descending bubbling through a liquid column, and sedimentation. The construction and dimensions of the new atomizers used in these bacteria traps are shown in the figure.

For this study, atomizers were selected with walls which are parallel along the entire length of the capillary. The inside opening of the capillary should be even and centrally located in relation to the constricted end of the carrier tube. Adherence to these conditions assures uniform distribution of the aerosol in both the central and peripheral sections of the airstream, as well as maximum trapping of the microorganisms.

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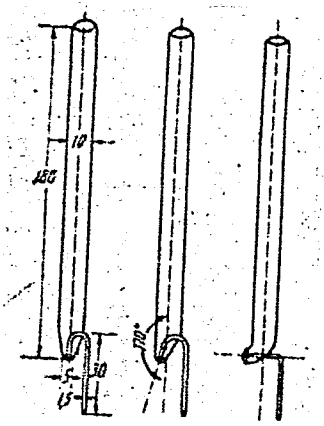
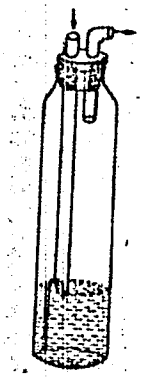
RUDENKO, N. M., Zhurnal Mikrobiologii, Epidemiologii, i Immunobiologii, No 9, Sep 70, pp 124-126



Model 1 Model 2 Model 3



Assembled unit

Test of the quality of atomization

Apparatus, dimensions, and a test of nozzle-type atomizers
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RUDENKO, N. M., Zhurnal Mikrobiologii, Epidemiologii, i Immunobiologii, No 9, Sep 70, pp 124-126

To determine the efficiency of atomizing liquids, preliminary tests of the atomizers were conducted by a previously developed method. It was determined that the time needed for atomization of 2 cc of a liquid depended on the rate of air aspiration and could be expressed by the formula:

$$T = \frac{K}{A - A_0},$$

where T is the atomization time (in sec); K is a coefficient characteristic of the given atomizer; A is the air velocity (in ℓ/min); and A_0 is the air velocity at which atomization of liquid initially begins (ℓ/min).

In particular, it follows from this formula that $K=T(A-A_0)$. Thus the K value appears to be a mathematical characteristic for the performance of atomizers, and it should be utilized when units are selected for operation. Under our conditions, the K value was 1.15-1.20.

Up to the present we have conducted several series of comparative experiments

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RUDENKO, N. M., Zhurnal Mikrobiologii, Epidemiologii, i Immunobiologii, No 9, Sep 70, pp 124-126

on the trapping capacity of several bioaerotraps and the values of passage of aeroplankton in relation to natural, finely dispersed aerosols (closed locations) as well as synthetic types, including bacterial aerosols (Serratia marcescens) and viral aerosols (Sendai virus).

From among these nozzle-type atomizers, model No 2, with which the best results were obtained, was selected. To obtain air samples, the outlet tube of the bacteria trap was connected in turn with the rheometer and the aspiration mechanism. In studying the synthetic aerosols, the bacteria traps were connected to a Sinitskiy aerosol chamber (Shafir and coauthors, 1957).

The dispersion composition of the aerosol was as follows: particles measuring 1-5 microns made up of 64.7% and those of 6-10 microns, 32.1%. The volume of the microbial suspension used in creating an aerosol, and which was eventually trapped by the apparatus tested, was registered on a precalibrated scale located in the lower portion of the aerosol chamber. The concentration of microflora obtained from the inoculated liquid sample was carried

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RUDENKO, N. M., Zhurnal Mikrobiologii, Epidemiologii, i Immunobiologii, No 9, Sep 70, pp 124-126

out on a No 3 membrane filter, followed by cultivation on an agar surface in three Petri dishes (Boykov and Rudenko, 1957). The cultured colonies were counted after incubation for 18-20 hrs at 37°C.

In calculating the percentage of bacterial passage, the number of colonies cultured during inoculation of liquids from the first and second bacteria traps connected serially was combined and taken to be 100 percent. The number of bacteria trapped by the second apparatus, expressed in percent, represented the extent to which the bacteria passed through the first unit.

In the virus aerosol studies, a hemagglutination reaction was conducted using liquid from the apparatus, so that the presence of viral antigen and its amount was determined. The titer of the diagnosticum was checked as a preliminary step. The virus-trapping capacity of the apparatus (A) was calculated from the formula:

$$A = \frac{V_{br} \cdot T_{Rha} \cdot 10^5}{S_v \cdot T_D}$$

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RUDENKO, N. M., Zhurnal Mikrobiologii, Epidemiologii, i Immunologii, No 9, Sep 70, pp 124-126

where V_{br} is the volume of buffer solution contained in the apparatus (ml); S_v is the volume of air passed through (in l); T_{Rh2} is the hemagglutination reaction titer; T_D is the diagnosticum titer (dilution at which agglutination observed was at least ++; for the calculations, the degrees of dilution were expressed as whole numbers, i.e., 1, 2, 4, 8, etc.; and 10^5 is the coefficient.

The experimental results were processed mathematically and are tabulated in abbreviated form. The results show that the highest efficiency of bacteria- and virus-trapping was observed in two-chamber apparatus, in bacteria traps equipped with sprayer atomizers or with a straight double atomizer, a Rechmenskiy syphon and Nikitin bioaerotrap. Air intake was highest for our bioaerotrap. Optimal air velocity in units equipped with atomizers was 35-40 l/min. When necessary, the air intake volume could be increased by adding two or more atomizers to the bacteria trap. In the Yefremov adapters, a high resistance to the air stream was noted, the saturation liquid occasionally flowed out during sampling, and the microflora could not be completely separated from the filtering materials. The highest degree of microorganism

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RUDENKO, N. M., Zhurnal Mikrobiologii, Epidemiologii, i Immunologii, No 9, Sep 70, pp 124-126

passage was noted in the Krotov, D'yakonov, and Rosebury units and the lowest, in bacteria traps equipped with atomizers.

Conclusion.

The proposed atomizer model for the bacteria traps shows several advantages in comparison with other instruments. It assures the highest degree of trapping and smallest passage of microorganisms, is simple in construction and is more suited for calibration in serial performance.

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RUDENKO, N. M., Zhurnal Mikrobiologii, Epidemiologii, i Immunobiologii, No 9, Sep 70, pp 124-126

Trapping capacity of bacteria traps

Apparatus	No of experiments	Air velocity (l/min)	Fine particle aerosol		Artificial aerosol		
					Bacterial		Viral
			Trapping efficiency	Microbe passage	Trapping efficiency	Microbe passage	Trapping efficiency (relative units)
			in %		in %		

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RUDENKO, N. M., Zhurnal Mikrobiologii, Epidemiologii, i Immunobiologii, No 9, Sep 70, pp 124-126

Dual chamber	13	26.8	340.1	0.5	140.6	0.3	-
Vessel with nozzle-type atomizer	15	48.9	347	0.6	124.8	0.6	27.5
Vessel with straight double atomizer	16	33.3	169.5	4.5	134.1	4.6	24.9
Rechmenskiy siphon	15	20.5	100	25.6	100	25.3	20.4
Nikitin bioaerotrap	16	13.7	86.4	23	107.9	22.4	5.7
D'yakonov apparatus	15	13.6	70.3	40.6	80.5	39.9	10.9
Rosebury impringer	15	10.3	67.3	34.4	89.8	34.4	10.3
Yefremov adapters							
cotton + 50% glycerine	8	11.4	91.3	-	-	-	-
cotton + glycerine	8	10.8	69.1	-	-	-	-
silica gel + glycerine	8	11.3	59.9	-	-	-	-
silica gel + 50% glycerine	8	12.4	43.4	-	-	-	-
Krotov Apparatus	16	25	50	42.7	-	-	-
Kokh method	24	5	22.1	-	-	-	-
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019

UNCLASSIFIED

TITLE--CERTAIN UNSTEADY PROBLEMS OF THE THEORY OF FINITE AMPLITUDE WAVES DISSIPATIVE MEDIA -U-

PROCESSING DATE--16OCT70

AUTHOR-(02)-RUDENKO, O.V., SOLUYAN, S.I.

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COUNTRY OF INFO--USSR

SOURCE--AKADEMIIA NAUK SSSR, DOKLADY, VOL. 1970, P. 815-181

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--PARTIAL DIFFERENTIAL EQUATION, CYLINDRIC WAVE, WAVE PROPAGATION, ORDINARY DIFFERENTIAL EQUATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1984/0267

STEP NO--UR/0020/70/190/000/0815/0818

CIRC ACCESSION NO--AT0055063

UNCLASSIFIED

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202720002-4

2/2 019 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AT0055063

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STUDY OF CERTAIN UNSTEADY PROBLEMS REGARDING WAVE PROPAGATION IN DISSIPATIVE, SPATIALLY SYMMETRICAL MEDIA. IT IS SHOWN THAT, IN CERTAIN IMPORTANT PARTICULAR CASES, THE NONLINEAR PARTIAL DIFFERENTIAL EQUATIONS DESCRIBING PLANE AND CYLINDRICALLY SYMMETRICAL WAVES CAN BE REDUCED TO ORDINARY DIFFERENTIAL EQUATIONS. EXACT SOLUTIONS ARE OBTAINED WHICH, IN THE CASE OF PLANE WAVES, MAKES IT POSSIBLE TO ANALYZE THE PROPAGATION OF SINGLE PULSES OF VARIOUS PROFILES. IN THE CASE OF CYLINDRICAL WAVES, THE SOLUTION IS OBTAINED IN PARAMETRIC FORM AND IS AN ANALOG OF THE QUASI STEADY STATE SOLUTION. THE EXACT SOLUTIONS OBTAINED ARE FREE FROM CONSTRAINTS ON THE VALUE OF THE REYNOLDS NUMBER. FACILITY: MOSKOVSKIY INSTITUT NARODNOGO KHOZIAISTVA, MOSCOW, USSR.

UNCLASSIFIED

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Acc. Nr: AA0108685 RUDENKO P.A.

Soviet Inventions Illustrated, Section I Chemical, Derwent, Abstracting Service: 3 70 Ref. Code: UR 0482

244360 SURFACE HARDENING is preceded by heating to below re-crystallisation point to improve fatigu. strength. This is done by a transformer (1), roller electrode (2) and hardening roller (3) fitted on a lathe support. The electrode rollers ride ahead of the hardener at a speed governed by the heating time of the particular surface. This resistance heating principle gives an easily adjusted schedule by current control systems.

22.1.68 as 1213133/22-1. BEGAGOEN.I.A., P.A.RUDENKO, A.I. BOIKO et al. KRIVOI ROG MINING INST. (23.10.69) Bul 18/28.5.69. Class 18c. Int.Cl. C 21 d.

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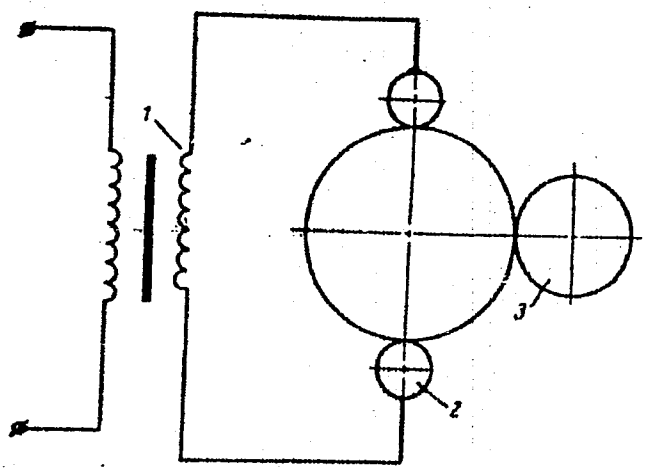

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AUTHORS: Begagoyen, I. A.; Rudenko, P. A.; Boyko, A. I.; Antonyuk, O. I.

Krivorozhskiy Gornorudnyy Institut

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Burn Studies

USSR

IVANOVA, N. P.; YEVDOKIMOV, Ye. A.; SHEKHTER, A. B.; ISTRANOV, L. P.; RUDENKO, T. G.; SYCHENIKOV, I. A.; Central Scientific Research Laboratory imeni S. I. Chechulin, First Moscow Medical Institute imeni I. M. Sechenov, and Central Institute of Traumatology and Orthopedics.

"Application of Collagen Sponge in the Treatment of Burns"

Moscow, Novoye v Diagnostike, Lechenii, Profilaktike Vazhneyshikh Zboleveniy i Metodakh Issledovaniya (News in Diagnosis, Treatment, and Prophylaxis of the Most Important Diseases and Methods of Investigation), Ministerstvo Zdravookhraneniya SSSR, 1971, 128 pp, pp 51-52

Abstract: Notwithstanding the large variety of materials and drugs used for the dressing and treatment of burns, to this date there is no generally accepted method of treatment. During the past few years information has appeared concerning the extensive utilization of collagen polymer preparations for the treatment of burns, trophic ulcers, scalp wounds, and so on,

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IVANOVA, N. P., et al, Novoye v Diagnostike, Lechenii, Profilaktike Vashnoyshikh Zabolevaniy i Metodakh Issledovaniya, 1971, 126 pp, pp 51-52

which is absorbed by the organism and has a positive effect on the regenerative processes of the lesion.

The porous collagen sponges are hemostatically effective, and by their hygroscopic and structural properties securely protect the injured surface from the effects of the external environment, considerably reduce plasma loss, and contribute to the growth of granulation tissue and the rapid healing of the lesions. In addition, the collagen can be permeated with different medicinal substances (antibiotics, antiseptics, hormones, vitamins, substances stimulating the growth of connective tissue, and others) which are released by lysis of the collagen sponge.

Taking into consideration the positive properties of the collagen preparation, researchers at the Central Scientific Research Institute of Traumatology and Orthopedics Burn Section applied

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IVANOVA, N. P., et al, Novoye v Diagnostike, Lechenii, Profilaktike Vashnevshikh Zabolevaniy i Metodakh Issledovaniya, 1971, 128 pp, pp 51-52

a collagen sponge 0.5-0.8 cm thick and filled with boric acid, hydrocortisone, and furacillin to 20 patients with fresh burns and large granulation surfaces.

For the treatment of second and third degree burns, sponges corresponding in size to the injured areas were placed on the processed burned surfaces. Aseptic dressings were then applied. The dressings were changed within 2-3 days, and subsequently as required by the condition of the burned surface and the rapidity of lysis of the sponges. When applied to moist wound surfaces, the collagen sponges closely adhered to the wound, absorbing the lesion exudate. When exudation was copious, the sponges were absorbed by the second or third days.

The positive aspects of the application of collagen sponge are its rapid and painless covering of the burned surfaces, and the possibility of permeating the sponge with different medicinal substances which are able to exert a direct local effect on the

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IVANOVA, N. P., et al, Novoye v Diagnostike, Lechenii, Profilaktike Vashnerzhikh Zabolevaniy i Metodakh Issledovaniya, 1971, 128 pp, pp 51-52

wound with lysis of the sponge. Collagen sponges can be recommended for use in the general set of therapeutic measures for the treatment of patients with burns as a temporary dressing for the preparation of large injured surfaces for subsequent autoplasty.

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USSR

UDC: 620.193.5

BYKOV, V. N., RUDENKO, V. A., and GABRIANOVICH, D. V.

"Effect of PbO on the Oxidation of 1Kh13 Steel"

Moscow, Zashchita Metallov, Vol. 6, no. 4, Jul-Aug 70, pp 455-456

Abstract: The well-known effect of the catastrophic oxidation of stainless steel is generally observed when the metal is alloyed with elements whose oxides are of the low-melting type (MoO_3, V_2O_5, PbO) or when its surface is contacting similar oxides or salts. This study concerns the kinetics of oxidation of 1Kh13 steel at 800--1000°C, its structure, and phase composition of the oxide films formed in the presence of lead oxide. The films show areas with a peculiar geometry corresponding to the phase of lead ferrite $Pb \cdot 5Fe_2O_3$. The amount and size of such areas depends on temperature, oxidation time, and amount of lead oxide vapors in the oxidizing atmosphere. The oxide film on 1Kh13 steel oxidized in air at 800°C is composed of spinel $(Fe, Cr)_3O_4$ at 1000°C and a small amount of metal oxide (Me_2O_3). In the presence of PbO the ratio of these phases in the film varies: $Pb \cdot 5Fe_2O_3$ and Me_2O_3 (α-Fe_2O_3)

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202720002-4

USSR

BYKOV, V. N., et al, Zashchita Metallov, Vol. 6, no. 4, Jul-Aug 70, pp 455-456

are predominant. In such a manner, lead oxide promotes the formation of phases containing metallic ions of a high valence. Phase α-Fe_2O_3 is classed with n-type semiconductors with disorder in the anion sublattice. In accordance with Hauffe's rule of valence, introducing an element with a lower valence (Pb^{2+}) in the lattice of such an oxide will increase the concentration of anion vacancies and, consequently, the oxidation rate. In the process of oxidation of 1Kh13 steel in a medium containing PbO vapors (or in contact of PbO with the steel's surface), the adsorption rate of PbO from the gaseous phase may exceed the dissolution rate of lead ions in the lattice of the oxide.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202720002-4

USSR

UDC 576.858.095.383

RUDENKO, V. I., SMORODINTSEV, AL., A., AKSENOV, O.A. and LIMBINA, L. N., All-Union Scientific Influenza Research Institute, Ministry of Health USSR

"The Nature of Interferon-Producing Cells"

Moscow, Voprosy Virusologii, No 1, 1970, pp 52-55

Abstract: The capacity of bovine macrophages and RES to produce interferon in vitro after inoculation with Newcastle disease virus was studied. Macrophages produced much more interferon than did cultures consisting mostly of polymorpho nuclear leukocytes. The amount of interferon produced was directly related to the number of macrophages in the culture, an indication that these elements play an active part in the production of the protein. Interferon was produced in the polymorpho nuclear leukocyte culture because of the admixture of RES cells. Interferon production started within 1-3 hours after introduction of Newcastle disease virus, peaking after 6 hours, and ceasing completely after 24-48 hours. The rate of interferon production varied with the number of cells cultured, incubation temperature, dose of theinducer virus, and age of the animals from which the lymphocytes and monocytes were obtained. 1/1

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202720002-4

1/2 016 UNCLASSIFIED PROCESSING DATE--11SEP70

TITLE--ON THE NATURE OF INTERFERON PRODUCING CELLS -U-

AUTHOR--RUDENKO, V.I., SMORODINTSEV, A.A., AKSENOV, O.A., LYABINA, L.M.

COUNTRY OF INFO--USSR

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SOURCE--VOPROSY VIRUSOLOGII, 1970, NR 1, PP 52-56

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--CELL CULTURE, INTERFERON, LEUCOCYTE, INOCULATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1987/0054 STEP NO--UR/0402/70/000/001/0052/0056

CIRC ACCESSION NO--AP0103734

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016

CIRC ACCESSION NO--AP0103734 UNCLASSIFIED PROCESSING DATE--11SEP70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BOVINE LYMPHOCYTIC AND MONOCYTIC CELL CULTURES PRODUCED AFTER INOCULATION WITH NDV MUCH MORE INTERFERON THAN "PURE" CULTURES OF POLYNUCLEAR LEUCOCYTES. THE YIELD OF INTERFERON DEPENDED DIRECTLY UPON THE AMOUNT OF LYMPHOCYTES AND MONOCYTES IN THE CULTURE, INDICATING THE PREDOMINANT RSLE OF THESE CELLS IN INTERFERON PRODUCTION. INTERFERON PRODUCTION DETECTED IN THE "PURE" POLYNUCLEAR LEUCOCYTE CULTURES WAS DUE TO 10PERCENT CONTAMINATION OF THESE CULTURES WITH CELLS OF RETICULO ENDOTHELIAL SYSTEM LYMPHOCYTES AND MONOCYTES. THE MAIN INTERFERON PRODUCTION WAS SHOWN TO BE COMPLETED WITHIN THE FIRST 24 HOURS AFTER INOCULATION. THE RATE OF INTERFERON PRODUCTION DEPENDED ON THE NUMBER OF CELLS IN CULTURE, INCUBATION TEMPERATURE, INDUCER VIRUS DOSE, PH OF THE MEDIUM, AND THE AGE OF HOST ANIMAL.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202720002-4

USSR

UDC 669.71.046.44

LAGUNOV, YU. V., GLADKIKH, V. A., PETRUNOV, V. S., RUDENKO, V. K., VOYTANIK, S. T., KLIMKOVICH, N. S., PORADA, A. N., and CHERNYSH, F. I.

"Investigation of the Kaolin Sintering Process"

Metallurgiya i koksokhimiya. Mezhved. resp. nauchno-tekhn. sb. (Metallurgy and Coke Chemistry -- Interdepartmental Republic - Collection of Scientific and Technical Works), 1970, vyp. 21, pp 47-55 (from RZh-Metallurgiya, No 3, Mar 71, Abstract No 3 G143 by authors)

Translation: The authors work out the parameters of the sintering process for kaolins of the Glukhovetskoye, Prosyanaya, and Novoseletskoye deposits in a laboratory sintering cup of square section with a sintering area of 0.1 m^2 and with an exhauster having an efficiency of 0.5 m^3/sec. Fe concentrate was used as an additive to lower the melting point of the sintering charge. The hygroscopic moisture content of both primary and secondary kaolins intended for sintering should range from 13 to 18%. The sintering of both primary and secondary kaolins is shown to be possible in principle. 5 tables.

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UDC 541.183.2

BONDARENKO, S. V., VDOVENKO, N. V., BUNTOVA, M. A., RUDENKO, V. M., AND TARASEVICH, YU. I., Institute of Colloidal Chemistry and Chemistry of Water, Academy of Sciences, UkrSSR

"Wetting Heat and Water Adsorption on Organopalygorskite"

Kiev, Ukrainskiy Khimicheskiy Zhurnal, Vol 38, No 10, Oct 71, pp 1008-1013

Abstract: The wetting heat and adsorption of water on a natural sample of palygorskite and on samples treated with organic materials were investigated. It has been shown that mineral surfaces modified with organic cations have a lower adsorption capacity. This is due principally to the replacement of the most active adsorption centers of the internal surface of the mineral (in-organic exchange ions, hydroxyl groups) by less active organic cations. The surface covered with organic modifiers increases with their increasing chain length, and consequently a gradual decrease occurs of the wetting heat and of the magnitude of adsorption. On the basis of thermochemical studies, changes were calculated for the differential thermodynamic functions of the

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USSR

BONDARENKO, S. V., et al., Ukrainskiy Khimicheskiy Zhurnal, Vol 38, No 10, Oct 71, pp 1008-1013

adsorption process. It has been established that the A. V. DUMANSKY law applies in determining the quantity of water bound by the palygorskite modified with organic materials.

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Receivers and Transmitters

USSR

UDC 621.396.621.2

RUDENKO, VLADIMIR MIKHAYLOVICH; KHALYANIN, DMITRIY BORISOVICH; MAGNUSHEVSKIY, VALENTIN ROMUAL'DOVICH

"Low-Noise Input Circuits Of Microwave Receiving Devices"

Maloshumyashchiye vkhodnyye tsepi SVCh priyemnykh ustroystv (cf English above), Moscow, Izd. "Svyaz'," 1971. 280 pp, ill. 1 r 25 k.

Abstract: In the book an analysis is presented of various types of low-noise broad-band microwave amplifiers, also including the integrated type (transistorized amplifiers, amplifiers based on tunnel diodes, semiconductor parametric amplifiers, and others). The technological principles for creation of microwave integrated circuits are considered, and a computation is made of transmitting lines and various microwave devices of the integrated type. The most completely illuminated problems are connected with the construction and calculation of semiconductor parametric amplifiers. Most attention is paid to methods of synthesis of corrective networks and to methods of machine calculation of semiconductor parametric amplifiers and to optimization of their frequency characteristics. The book is intended for a wide circle of specialists occuped with planning, design, and construction of low-noise input circuits of the microwave band.

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USSR

RUDENKO, VLADIMIR MIKHAYLOVICH, et al., Maloshumyashchiye vkhodnyye tsepi SVCh priyemnykh ustrovstv, Moscow, Izd. "Svyaz'," 1971. 280 pp, ill. 1 r 25 k.

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RUDENKO, VLADIMIR MIKHAYLOVICH, et al., Maloshumyashchiye vkhodnyye tsepi SVCh priyemnykh ustrovstv, Moscow, Izd. "Svyaz'," 1971. 280 pp, ill. 1 r 25 k.

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RUDENKO, VLADIMIR MIKHAYLOVICH, et al., Maloshumyashchiye vkhodnyye tsepi SVCh priyemnykh ustrovstv, Moscow, Izd. "Svyaz'," 1971, 280 pp, ill. 1 r 25 k.

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RUDENKO, VLADIMIR MIKHAYLOVICH, et al., Maloshumyashchiye vkhodnyye tsepi SVCh priyemnykh ustrovstv, Moscow, Izd. "Svyaz'," 1971. 280 pp, ill. 1 r 25 k.

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017

UNCLASSIFIED

TITLE--METHANOL AND ETHANOL ADSORPTION ON CATION SUBSTITUTED MONTMORILLONITE AND VERMICULITE -U-

PROCESSING DATE--30OCT70

AUTHOR-(04)-TARASEVICH, YU.I., RUDENKO, V.M., SHARKINA, E.V., OVCHARENKO, F.D.

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UNCLASSIFIED

CIRC ACCESSION NO--AP0112713 PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SORPTION ISOTHERMS OF METHANOL AND ETHANOL VAPORS ON CATION SUBSTITUTED MONTMORILLONITE AND VERMICULITE DEGASSED AT DIFFERENT TEMPERATURES HAVE BEEN STUDIED. THE CATION SUBSTITUTED MINERAL SAMPLES SATURATED WITH LIQUID ALCOHOLS HAVE BEEN EXAMINED ROENTGENOGRAPHICALLY. IN THE CASE OF VERMICULITE IT IS MORE DIFFICULT FOR METHANOL AND ETHANOL MOLECULES TO PENETRATE INTO THE SPACE BETWEEN THE PACKETS, THAN IN THE CASE OF MONTMORILLONITE. EXCHANGE CATIONS AFFECT SIGNIFICANTLY THE INTERLAYER SORPTION OF ALCOHOLS BY BOTH MINERALS.

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016

UNCLASSIFIED

TITLE--ADSORPTION OF WATER ON CATION SUBSTITUTED HALLOYSITE AND KAOLINITE -U-

PROCESSING DATE--04DEC70

AUTHOR-(05)-OVCHARENKO, F.D., TARASEVICH, YU.I., RUDENKO, V.M., BONDARENKO, S.V., ALEKSEYEV, O.L.

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CIRC ACCESSION NO--AP0137923 UNCLASSIFIED PROCESSING DATE--04DEC70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ADSORPTION DESORPTION ISOTHERMS FOR H SUB2 O ON NATURAL HALLOYSITE AND KAOLINITE AND ON THE NH SUB4, NA, CA, AL, AND TH FORMS ARE GIVEN. THERE ARE NO GREAT DIFFERENCES IN THE HYSTERESIS LOOPS FOR THE VARIOUS FORMS OF HALLOYSITE, BUT THE KAOLINITES AT LOW RELATIVE PRESSURES HAD INCREASINGLY LARGE HYSTERESIS LOOPS IN GOING FROM THE NATURAL AND CA FORMS TO THE NA, AL, AND TH FORMS. THIS IS DISCUSSED IN TERMS OF HYDRATION OF METAL CATIONS AND IN TERMS OF THE ENERGY INVOLVED IN DISPLACING THE CATIONS FROM THE SILICATE SURFACE WITH RESULTANT HYDRATION OF BOTH METAL AND SURFACE. THE HYSTERESIS LOOPS OF MEOH ADSORBED ON KAOLINITE AND HALLOYSITE ARE MUCH NARROWER THAN THOSE OF H SUB2 O. AT A RELATIVE PRESSURES LARGER THAN 0.9, THERE IS A RAPID INCREASE IN ADSORPTION. THIS IS ATTRIBUTED TO THE PRESENCE OF PORES OF RADIUS LARGER THAN 200 ANGSTROM. A TABLE IS GIVEN OF HEATS OF WETTING AND OF VOLS. OF THE MONOLAYER FOR THESE MATERIALS.

FACILITY: INST. KOLLOID, KHIM. KHIM. VODY, KIEV, USSR.

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USSR

UDC 541.183

TARASEVICH, YU. L., and RUDENKO, V. M., Institute of Colloid Chemistry and of the Chemistry of Water, Academy of Sciences UkrSSR

"The Effect of Exchange Cations on the Adsorption of Water by Kaolinite"

Kiev, Ukrainskiy Khimichskiy Zhurnal, Vol 38, No 9, Sep 72, pp 894-899

Abstract: The effects of the exchange cations K^+, Na^+, Li^+, Ba^{++}, Ca^{++}, Cu^{++}, Al^{3+}, and Fe^{3+} introduced into Glukhovetsk kaolinite on the heat of wetting of the kaolinite and the water vapor adsorption by it were studied. The adsorption-description isotherms of the substituted kaolinites exhibited a hysteresis loop, which extended down to low relative pressures for samples saturated with di- and trivalent cations. The size of the loop increased on transition from Ba and Ca to Cu and then further to Al and Fe. In experiments in which adsorption-desorption cycles were repeated up to a number of seven at increasing final relative pressures p/p_s, the hysteresis loop increased increased in size with the number of cycles and the adsorption became greatest in the range $p/p_s = 0.65 - 1.0$, which coincided with the range in which capillary condensation (swelling) took place. The nature and

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USSR

TARASEVICH, YU. L., and RUDENKO, V. M., Ukrainskiy Khimich skiy Zhurnal, Vol 38, No 9, Sep 72, pp 894-899

magnitude of the effects involved in the formation of the hysteresis loop indicated that in explaining H_2O adsorption by substituted kaolinites the non-rigidity of the submicroscopic structure of kaolinite must be taken into consideration in addition to the hydration of cations. Breaking of point contacts between akolinite particles was involved in hysteresis. On the basis of an increase by a factor of ~ 2 of the capacity of the adsorbing monolayer, the number of interparticle contacts was large enough to warrant the assumption of an essentially parallel arrangement of platelets of the adsorbent. On the assumption that the adsorption isotherm and the heat of wetting of K-kaolinite reflected interation of H_2O with surface O atoms and OH groups only, the relative hydration numbers n and heats of hydration q of exchange ions could be calculated at n = 10, q = 80 kcal/g-ion for Ca^{++} and n = 3, q = 12 kcal/g-ion for Na^{+}, respectively.

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USSR

UDC 621.762.04:620.17

FEDORCHENKO, I.M., KORNH, L. M., PUGINA, L. I., PANFILOVA, I. A. and RUDENKO, V. N., Institute of Problems of Material Science, Academy of Sciences Ukrainian SSR

"Effect of Technological Factors on the Durability of Sulfidized Iron-Graphite"

Kiev, Poroshkovaya metallurgiya, No 3, 1972, pp 99-105

Abstract: The strength properties of cermet materials after sintering are governed not only by the composition of the mixture but by a variety of technological factors as well. Varying the alloying efficiency of iron particles with carbon will almost double the strength of sulfidized iron-graphite; raising the dispersity of the starting powders four-fold may increase the material's strength by 30%; reducing the porosity from 30 to 1% will increase the strength characteristics of the material four to five times. Addition of zinc sulfide to alloy the particle contacts with zinc will raise the integral hardness by almost 30%. It has been established that the mechanism of strengthening cermet materials during plastic deformation is determined primarily by the material's initial porosity. (5 illustrations, 2 tables, 11 bibliographic references)

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JPRS 55987
15 May 72

UDC 620.171

INVESTIGATION OF THE CONDITION OF TURBINE DISC MATERIAL AFTER OPERATION

[Article by I. A. Kozlov, V. N. Rudenko, G. V. Rybenok; Kiev, Problemy Prochnosti, Russian, No 7, 1971, signed to press 12 November 1970, pp 78-82]

RUDENKO, V. N.

An increase in the service life of transport gas turbine engines and an increase in their reliability should be based on investigations of the character of change of the properties of the material as a function of the time and conditions of engine operation.

The metal of modern gas turbine engines operates under complex loading conditions, which create variable stresses under the influence of variable temperatures. Investigation of the behavior of material under these conditions involves tremendous procedural difficulties and is accomplished basically in application to individual simple loading conditions [1]. The tests presently in use for specimens under conditions approaching operational conditions by no means completely reflect all factors of the actual load condition.

The problem of determining the predominant mechanism of residual changes, accumulation of which leads a part to the limiting state, requires analysis and comparative evaluation of the changes that occur in the metal during operations performed on parts. It is also essential to evaluate the state of the material after operation under real conditions in order to employ the methods of abbreviated service life tests.

We investigated turbine discs after 2,221 and 2,934 hours of operation, a new disc of the same stage and engine and a turbine disc from another engine that had undergone stand tests with a summary operating time of 143 hours.

The discs, made of EI437BUVD alloy, were heat treated as follows: hardening from 1,080°C for 8 hours, cooling in air, aging at 780°C for 16 hours, cooling in air.

For preparation of blanks for the specimens the discs were cut on anode-mechanical machines with the maintenance of the standard tolerances

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alloy

RUDENKO, V.N.

JPRS 55556

28 March 1972

UDC 620.172:251.224

STUDYING THE TRUE STRENGTH CHARACTERISTICS OF SEVERAL HEAT-RESISTANT ALLOYS AT HIGH TEMPERATURES

[Article by V.N. Rudenko, A.S. Spivakov, Institute of Problems of Strength, Ukrainian SSR Academy of Sciences, Kiev, Problemy Prochnosti, Russian, No 5, May 1971, submitted 12 November 1970, pp 77-80]

The study of the mechanical properties of new materials includes their strength characteristics (σ_b, $\sigma_{0.2}$, δ, ψ etc.), based on a machine stress-strain diagram. However, these characteristics are arbitrary and do not reflect the true relationship between stresses and deformations, characteristic for the material being tested under its usage conditions of temperature and speed.

In this connection, many researchers have sought means for the construction of true deformation diagrams of specimens during testing [1-7].

Considering the great importance of this problem, we studied the true strength characteristics of type EI826 heat-resistant alloy, heat-treated as follows: hardening at 1210±10°C, holding for 2 hours; hardening at 1050±10°C, holding for 4 hours; aging at 800±10°C, holding for 16 hours. The specimens were cooled surrounded with air after each stage. Specimens of alloy 1Kh17N2Sh were heat-treated as follows: heating to 1020°C, holding for 40 minutes, cooling in oils; heating to 550°C, holding for 1 hour, cooling in air.

The tests were performed using short cylindrical specimens, diameter of gauge portion 8 mm, with M14 threaded heads in clamps.

The method of testing was as follows. During loading and recording of diagrams in coordinates P-Δl, test specimen 6 (see diagram on Figure 1), in split resistance furnace 7, was photographed. The specimen was heated to the required temperature, measured using thermocouple 10 and portable potentiometer 11, type PP-63. During the deformation process, the specimen was photographed through a special slit in the furnace by camera 1, a Zenit-5 with telephoto lens 2, a Yupiter-6. Special light source 4, providing a powerful parallel light beam, was used to assure even illumination of the specimen.

[I - USSR - I]

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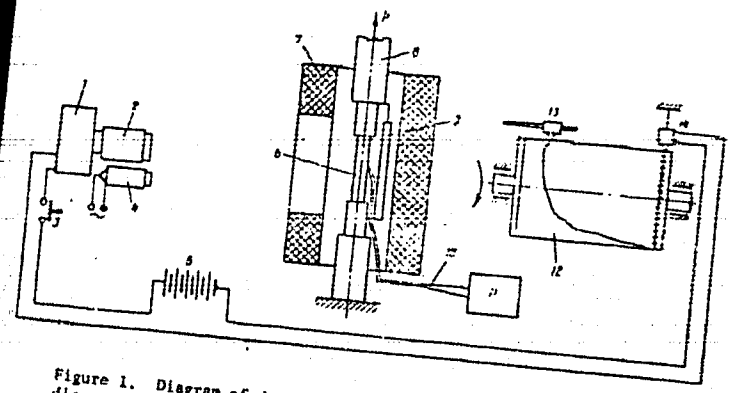

Figure 1. Diagram of device for construction of true deformation diagrams.

The diagramming apparatus of the test machine is equipped with pen 13, which records a diagram in coordinates P-δl on drum 12, and pen 14, attached to the core of a magnetic coil, which is connected through power supply 5 to the electric circuit of the flash apparatus of the camera. Thus, at the moment when the specimen being tested was photographed (when the camera shutter 3 was pressed) the magnetic coil of pen 14, fastened to the body of the diagramming apparatus, was energized. The pen thus marks the abscissa of the diagram recording the deformation by means of pen 13 to record the time when each picture was made.

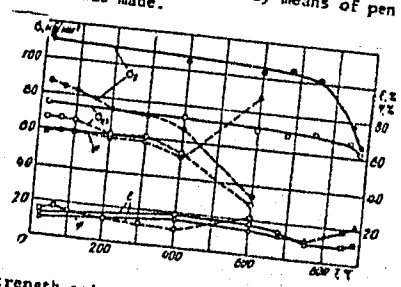

Figure 2. Strength and plasticity of 1Kh17N2Sh Alloy (Dotted Lines) and EI826 alloy (Solid Lines) as functions of temperature.

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USSR

RUDENKO, V. N., SPIVAKOV, A. S., Kiev

UDC 620.172.251.224

"Study of True Strength Characteristics of Certain Heat Resistant Alloys at High Temperatures"

Kiev, Problemy Prochnosti, No 5, May, 1971, pp 77-80.

Abstract: A method is presented for constructing true diagrams of deformation of heat resistant alloys at high temperatures, and results are presented of investigation of the alloys EI826 and 1Kh17N2Sh over a broad temperature range. Dependences between transverse and longitudinal deformation are constructed at the temperatures studied right up to rupture of the specimens. The method consists of simultaneous recording of a stress-strain diagram by a strip chart recorder and photography of the test specimen through a special aperture in the heating furnace.

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USSR

UDC 620.179.15

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KONONOV, B. A., DERGOBUZOV, K. A., YEVSTIGNEYEV, V. V., ZYKOV, V. M., RUDENKO, V. N., and STEPANOV, Yu. M., Scientific Research Institute of Electron Introscopy, Tomsk Polytechnic Institute imeni S. M. Kirov

"Experimental Evaluation of the Possibilities of Electron Defectoscopy" (Paper presented at the Sixth International Conference on Nondestructive Control Methods, June 1-5 1970, Hannover, GFR)

Sverdlovsk, Defektoskopiya, No 2, 1971, pp 94-98

Abstract: The status and prospects for fast electron defectoscopy are discussed. An account is given of investigation results of the use of betatron electron beams for defectoscopy of layer materials. It is demonstrated that radiographic and radiometric (including spectrometric) methods of electron defectoscopy can be applied successfully for solutions of many tasks with a sensitivity of 0.5%. The experimentally derived dependence of the intensity of a reflected electron flux on the thickness of the aluminum coating on the backing of different materials shows that with increasing thickness of the coating the intensity of the flux decreases or increases, depending on whether the atomic number of the coating is smaller or greater than that of the backing. Three figures, 11 bibliographic references.

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USSR

Single Crystals

UDC 546.26'28 : 548.55

SIDYAKIN, V. G., and RUDENKO, V. N., Kiev Polytechnical Institute

"Thermal Conductivity of Single-Crystal SiC"

Moscow, Izvestiya Akademii Nauk SSSR -- Neorganicheskiye Materialy, Vol 6, No 10, Oct 70, p 1861

Abstract: The authors studied the thermal conductivity of specimens of single-crystal α-SiC type 6H with compensating impurities (N_D - $N_A \approx 10^{17}$ cm^{-3}). The temperature dependence of the thermal conductivity of α-SiC (6H) (proportionality $\sim T^3$ at low temperatures and $\sim T^{-1}$ at high temperatures) was found to be in good agreement with the theory of heat conduction in semiconductors.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202720002-4

1/2 034 UNCLASSIFIED

TITLE--RELATIVISTIC EXPERIMENTS IN GRAVITATION -U- PROCESSING DATE--23OCT70

AUTHOR-(02)-BRAGINSKIY, V.B., RUDENKO, V.N.

COUNTRY OF INFO--USSR

SOURCE--USPEKHI FIZICHESKIKH NAUK, VOL. 100, MAR. 1970, P. 395-424

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS, EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--GRAVITY, ELECTROMAGNETIC WAVE PROPAGATION, SOLAR SYSTEM, RELATIVITY PRINCIPLE, GRAVITATION EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/0333 STEP NO--UR/0053/70/100/000/0395/0424

CIRC ACCESSION NO--AP0127914

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202720002-4"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202720002-4

2/2 034 UNCLASSIFIED

CIRC ACCESSION NO--AP0127914 PROCESSING DATE--23OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. REVIEW OF STUDIES PUBLISHED IN THE LAST FIVE YEARS AND DEALING WITH EXPERIMENTS RELATED TO THE RELATIVISTIC CONCEPT OF GRAVITY. EXPERIMENTS OF WEBER ET AL. (1966, 1967, 1968) AIMED AT THE DETECTION OF GRAVITATIONAL EMISSION ARE DISCUSSED IN DETAIL. PAPERS CONCERNED WITH EXPERIMENTAL TECHNIQUES IN THE FIELD ARE SURVEYED. ALSO DISCUSSED ARE GRAVITATIONAL EFFECTS OCCURRING DURING THE PROPAGATION OF ELECTROMAGNETIC WAVES IN THE SOLAR SYSTEM, WITH SPECIAL ATTENTION TO THE RELATIVISTIC PRECESSION OF A GYROSCOPE, AND THE PRINCIPLE OF EQUIVALENCE. FACILITY: MOSKOVSKII GOSUDARSTVENNYI UNIVERSITET, MOSCOW, USSR.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202720002-4

UNCLASSIFIED

TITLE--TRANSISTOR CIRCUIT ANALYSIS AT HIGH FREQUENCIES AND LARGE SIGNALS -U-

PROCESSING DATE--04DEC70

AUTHOR-(03)-BARDYLA, T.I., RADIONCHYK, K.N., RUDENKO, V.N.

COUNTRY OF INFO--USSR, HUNGARY

SOURCE--PROCEEDINGS OF THE FOURTH COLLOQUIUM ON MICROWAVE COMMUNICATION, BUDAPEST, 21-24 APRIL, 1970, VOL. IV, MT, MICROWAVE THEORY AND

DATE PUBLISHED----APR70

SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR.

TOPIC TAGS--CONFERENCE, TRANSISTORIZED CIRCUIT, CIRCUIT ANALYSIS, HIGH FREQUENCY, NONLINEAR DIFFERENTIAL EQUATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3008/1894

STEP NO--HU/0000/70/004/000/0000/0000

CIRC ACCESSION NO--AT0138774

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202720002-4"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202720002-4

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CIRC ACCESSION NO--AT0138774 UNCLASSIFIED PROCESSING DATE--04DEC70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE WIDE USE OF TRANSISTORS IN RADIO ENGINEERING EQUIPMENT CAUSES THE NECESSITY OF PROFOUND INVESTIGATION OF HIGH FREQUENCY TRANSISTOR PROPERTIES. LITERATURE POSSESSES SATISFACTORY METHODS OF TRANSISTOR CIRCUITS ANALYSIS AT SMALL SIGNALS. IN CASE OF LARGE SIGNALS AMPLITUDE AT HIGH FREQUENCY THE ANALYSIS OF TRANSISTOR CIRCUITS BECOMES DIFFICULT. THE SOLUTION OF THIS PROBLEM HAS BEEN REALIZED IN DIFFERENT METHODS WHICH HAVE BEEN EVOKED BY TWO CONTRADICTORY REQUIREMENTS, ONE OF PRECISION AND THE OTHER OF SIMPLICITY OF ANALYSIS. THE DIFFICULTY OF AN ANALYSIS IS THAT IT IS IMPOSSIBLE TO DETERMINE IN AN ANLYTICAL WAY THE INTERNAL VOLTAGE THAT DRIVES THE COLLEKTOR CURRENT EVEN WHEN THE TRANSISTORS INPUT IS FED WITH HARMONIC SIGNAL. THIS PAPER OFFERS THE ANALYSIS OF THE TRANSISTOR BEING AFFECTED ON ITS INPUT BY TWO LARGE SIGNALS AT FREQUENCIES UP TO THE CUT OFF ONE USING NON LINEAR DIFFERENTIAL EQUATIONS. THE NON LINEAR DEPENDENCIES OF THE COLLECTOR CURRENT, INERTIA AND CONDUCTANCE CONDITIONED BY DIFFUSION AND RECOMBINATION PROCESSES IN TRANSISTOR ARE TAKEN INTO CONSIDERATION. IT IS SUPPOSED THAT THE LOAD RESISTANCE OF TRANSISTOR IS SMALL IN COMPARISON WITH THE OUTPUT IMPEDANCE. THE EQUATIONS OBTAINED FOR THE COLLECTOR AND INPUT CURRENTS MAY BE DETERMINED IN NORMALISED SHAPE BY MEANS OF COMPUTER OR MODEL. THE SUFFICIENT PRECISION OF AN ANALYSIS OF TRANSISTOR CIRCUITS FOR PRACTICE MAKES ABOUT 10-20PERCENT, THEREFORE THE AUTHORS PROPOSE TO DEVELOPE THE ANALYSIS BY MEANS OF MODEL INSTEAD OF COMPUTER. HENCE THE POSSIBILITY TO MODEL THE APPROXIMATIVE EXPRESSIONS WAS TAKEN INTO ACCOUNT BY THEIR CHOICE.

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3/3 027 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AT0138774

ABSTRACT/EXTRACT--FACILITY: RADIO ENGINEERING DEPARTMENT OF LVOV POLYTECHNIC INSTITUTE, LVOV GSP-5, U.S.S.R.

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202720002-4"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202720002-4

1/2 009 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--NUCLEOPHILIC SUBSTITUTION REACTIONS IN QUATERNARY PIPERAZINIUM SALTS -U-

AUTHOR-(03)-RUDENKO, V.N., ILCHENKO, A.YA., ROZUM, YU.S.

COUNTRY OF INFO--USSR

SOURCE--DOPOV. AKAD. NAUK UKR. RSR, SER. B 1970, 32(2), 159-63

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--EXCHANGE REACTION, METHYLENE, BROMINATED ORGANIC COMPOUND, KETONE, AMINE, HETEROCYCLIC NITROGEN COMPOUND, BENZENE DERIVATIVE, ORGANIC AZINE COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/1137 STEP NO--UR/0442/70/032/002/0159/0163

CIRC ACCESSION NO--AT0134822

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202720002-4"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202720002-4

2/2 009 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AT0134822

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. QUATERNARY PHENAZINIUM SLATS WERE CONDENSED WITH COMPOS. CONTG. ACTIVE METHYLENE GROUPS, WITH BROMO KETONES, AND WITH AMINES. THUS, I WAS CONDENSED WITH (XY)CH SUB2, WHERE THE METHYLENE GROUP IS ACTIVATED BY 2 ELECTRONEG. GROUPS, BY ADDING THE COMPD. AND NAOME TO I (ALL 3 REAGENTS AS ALC. SOLNS.) AT ROOM TEMP. AND THE PPTD. II RECRYSTD. FROM MEOH. THE FOLLOWING II WERE PREPD. (X, Y, M.P., AND PERCENT YIELD GIVEN): ETCO SUB2, ETCO SUB2, 210DEGREES, 57; AC, ETCO SUB2, 172-4DEGREES, 38; CN, ETCO SUB2, 245DEGREES, 56; AC, AC, LARGER THAN 300DEGREES, 50; AC, H, LARGER THAN 300DEGREES, 50; ETCO, H, 153-5DEGREES, 57; AND BZ, H, 222DEGREES, 60. CONDENSATION OF I WITH BRCH SUB2 COR WAS CARRIED OUT UNDER SIMILAR CONDITIONS, CRYSTG. THE PRODUCT FROM CHCL SUB3. CONDENSATION OF 1,PHENYL,5,METHYLPHENAZINIUM SALTS WITH (XY)CH SUB2 GAVE THE FOLLOWING III (X, Y, M.P., AND PERCENT YIELD GIVEN): CO SUB2 ET, CO SUB2 ET, 174DEGREES, 70; AC, CO SUB2 ET, 153-5DEGREES, 80; CN, CO SUB2 ET, 250DEGREES, 80; AC, AC, 140DEGREES, 65; AND (XY EQUALS) 1,METHYL,5,OXO,2,THIOTHIAZOLIDIN,4,YLIDENE, 230DEGREES, 50. QUATERNARY 3,METHOXY,PHENAZINIUM SALTS (IV) WERE OBTAINED BY TREATING PHENAZIN,3,ONE WITH ME SUB2 SO SUB4. CONDENSATION OF IV WITH (XY)CH SUB2 GAVE THE FOLLOWING V (R, R PRIME1, X, Y, M.P., AND PERCENT YIELD GIVEN): OME, R EQUALS ET, CO SUB2 ET, CO SUB2 ET, 115DEGREES, 46; OME, ET, CH, CO SUB2 ET, 240DEGREES, 50; MORPHOLINO, ME, CO SUB2 ET, CO SUB2 ET, 179DEGREES, 40; AND MORPHOLINO, ME, CN, CO SUB2 ET, LARGER THAN 300DEGREES, 40. FACILITY: INST. ORG. KHIM., KIEV, USSR.

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USSR

UDC 539.4

KARPINOS, O. M., UMANSKIY, E. S., RUDENKO, V. N., TUCHINSKIY, L. I.

"The High-Temperature Strength of Copper Reinforced With Tungsten Fibers"

Problemy Prochnosti, No 5, May, 1970, pp 33-37

Abstract: A promising method recently developed for the reinforcement of metals is the dynamic hot pressing of compositions. This method has been used with compositions of nickel and copper, reinforced with tungsten fibers and networks. The results of research on the short-term strength and plasticity of nickel, reinforced with tungsten networks, have been presented in a previously published communication. The present work deals with the mechanical properties of copper reinforced with tungsten fibers, oriented along the axis of elongation, as well as with specially woven tungsten networks. All the materials were obtained by dynamic pressing at a temperature of 950-1000° C. It is found that the nature of the destruction of compositions depends mainly upon their constituents and upon the strength of the alloy between the strands and the matrix. With respect to short-term strength, such materials surpass the best modern copper heat-resistant alloys. This is particularly noticeable at high temperatures. Furthermore, the employed regimes of dynamic hot pressing did not provide for a sufficiently firm bond between the copper matrix and the unidirectional fibers if

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KARPINOS, O. M., et al, Problemy Prochnosti, No 5, May, 1970, pp 33-37

the volumetric content of such fibers is in excess of 20 percent. In such cases, the matrix is not completely reinforced by the fibers. However, such compositions possess increased plasticity, and in combination with sufficiently high strength can prove useful for a number of structural elements.

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Soviet Inventions Illustrated, Section II Electrical, Derwent,

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243685 TRANSMISSION SET OF A PULSE CODING SYSTEM.

The distributor of the data units is connected to one input of the module testing these units. The other inputs of the module testing the data units are connected to the distributor of the data units' digits. The outputs of the data units are connected to the inputs of the coding module. One input of the switching module is connected to the line module and the other one to the module checking the code. The output of the switching module is connected to the line module.

16.2.68 as 1219005/18-24.D.D.ANDREYEV et al(8.10.69) Bul 17/14.5.69. Class 21c, 74b. Int.Cl.G 05f, G 08c.

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AUTHORS: Andreyev, D. D.; Milenko, E. B.; Rudenko, V. N.; Yurkov, V. A.; Gavrilyuk, V. M.

Institut Avtomatiki

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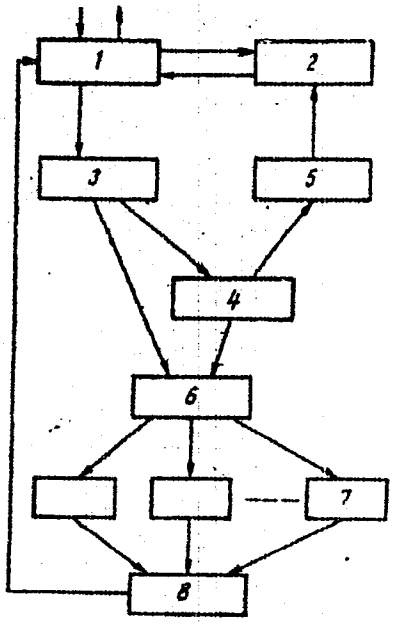

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202720002-4

USSR

UDC 621.314.1:621.382.3.001.24

BARDILA, T.I., RADIONCHIK, K.N., RUDENKO, V.N.

"Analysis Of Transitorized Converters At High Frequencies"

Teor. elektrotekhnika. Resp. mezhved. nauch.-tekhn.sb. (Theory Of Electrical Engineering. Republic Interdepartmental Scientific-Technical Collection),1971, Issue 11, pp 20-23 (from RZh--Elektronika i yeye primeneniye, No 3, March 1972, Abstract No 3B567)

Translation: With the help of nonlinear differential equations, an analysis is offered of a transistor with the effect at the input of two signals of large amplitude with frequencies right up to cutoff. The nonlinear dependence of the collector current, the inertia, and the conductances caused by diffusion and recombination processes in the transistor are taken into account. It is proposed with the aid of models to develop a solution for the differential equations obtained. Consequently, during the choice of approximation expressions the possibility of their modeling was considered. 3 fig. 2 ref. Summary.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202720002-4

USSR

UDC: 8.74

RUDENKO, Yu. M.

"An Algebraic Method of Classifying Three-Dimensional Bodies According to Outline"

Tr. Mosk. in-ta elektron. mashinostr. (Works of the Moscow Institute of Electronic Machine Building), 1971, vyp. 23, pp 174-180 (from RZh-Kibernetika, No 4, Apr 72, Abstract No 4V589)

Translation: An algebraic method of classification is developed which is based on using a system of polynomials to approximate a set of outlines represented in Hilbert space. Whether an outline belongs to one of the classes is decided on the basis of whether there are roots in the system of polynomials in the regions defined either by the error of the approximation or by parameters of a random process. Some results of experimental studies are presented. Author's resumé.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202720002-4

USSR

UDC: 8.74

PUPKOV, K. A., RUDENKO, Yu. M.

"An Algorithm for Distinguishing the Outline of the Image of an Object Against a Complex Background"

Tr. Mosk. in-ta elektron. mashinostr. (Works of the Moscow Institute of Electronic Machine Building), 1971, vyp. 23, pp 145-148 (from RZh-Kibernetika, No 4, Apr 72, Abstract No 4V587)

Translation: Criteria are introduced for deciding whether a point is part of an outline. These criteria are used in constructing a recurrent procedure for sampling the points of an outline. Some results of experimental studies are presented. Authors' abstract.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202720002-4

USSR

UDC 51.155.001.57:681.3.06

RUDENKO, Yu. M.

"Certain Aspects of the Use of the Optical Incoherent Range for Recognition of Three Dimensional Objects Under Natural Conditions"

Tr. Mosk. In-ta Elektron. Mashinostr. [Works of Moscow Institute of Electronic Machine Building], No 14, 1971, pp 109-124, (Translated from Referativnyy Zhurnal, Kibernetika, No 10, 1971, Abstract No 10 V826 by the author).

Translation: A statement is presented of the problem of recognition of solid bodies under natural conditions considering their installation on flight vehicles, using a noncoherent light beam reflected from the object being recognized as the source of information. Certain criteria for detection of an object against the background of the underlying surface are studied, allowing the volume of information in the signal to be reduced before it is sent to the input of the recognition system. The basic requirements which must be satisfied by the information measuring device are briefly studied as a function of the conditions of application of the recognition system and the probability of proper recognition.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202720002-4

USSR

UDC 577.3

RUDENOK, A. N., and KONEV, S. V., Laboratory of Biophysics and Isotopes, Academy of Sciences Belorussian SSR, Minsk

"Self-Protection of Cells From Heat Damage"

Moscow, Doklady Akademii Nauk SSSR, Vol 208, No 4, 1973, pp 977-980

Abstract: The effect of the concentration of yeast cells in aqueous suspensions on the resistance of the cells to high temperatures was studied. Experiments were carried out on cultures of Saccharomyces cerevisiae and Candida utilis in the late logarithmic stage grown on diluted (1:1) beer wort at 29°C. The damage of the cells to heating was determined by staining with Ponceau red - uranyl nitrate and on the basis of the capacity of the cells for propagation. With increasing concentrations of the cells in the heated suspensions, the ratio of cells that were damaged by the heat decreased. The resistance to heat was due to the release by the cells of protective substances that were evolved at any concentration of the suspension. Repeated heating of fresh portions of cells in a low concentration resulted finally in a supernatant liquid that exerted a protective effect equal to that of the supernatant liquid of a concentrated cell suspension heated only once. The protective substances could also be concentrated by evaporation of the supernatant liquid from a dilute

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202720002-4

USSR

RUDENOK, A. N., and KONEV, S. V., Doklady Akademii Nauk SSSR, Vol 208, No 4, 1973, pp 977-980

suspension. These substances were evolved on heating to 48-50° (a temperature range in which no damage to cells took place even in dilute suspensions) as well as heating at temperatures $\geq$ 60°, at which all cells were damaged. Boiling of the supernatant liquid containing the protective substances did not reduce the protective effect - i.e., these substances were thermally stable. Tests with various substances that could be released by yeast cells on heating led to the conclusion that the protective substances were amino acids. The results of tests with amino acids showed that only nonpolar (hydrophobic) amino acids which had no charge in a side chain exerted a protective effect. The effect of aromatic and heterocyclic amino acids was more pronounced than that of aliphtic amino acids. The protective activity decreased in the order L-tryptophan, D-tryptophan, DL-beta-phenyl-alpha-alanine > DL-alpha-norleucine > glycine. (Submitted by Academician A. N. Belozerskiy, 30 May 72)

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202720002-4

Acc. Nr: AP0051924 R Ref. Code: UR 0219

PRIMARY SOURCE: Byulleten' Eksperimental'noy Biologii i Meditsiny, 1970, Vol 69, Nr 2, pp 41-44

CONCERNING THE METHOD OF PRODUCING EXPERIMENTAL CHRONICAL PATHOLOGY OF THE LIVER

K. S. Kovalskaya, M. V. Rudenskaya, A. S. Gorin

Sklifosovsky First-Aid Institute

To elucidate the action of sodium salicylate on the functional and morphological state of the liver, two experimental procedures were employed. In acute experiments, sodium salicylate was administered fractionally into the portal vein. In chronic experiments, the liver was examined after single, double and triple administrations of the agent. Observation was carried out during 2 years after the last administration. As evidenced from these experiments, sodium salicylate induces chronic pathology of the liver with sclerosis, distrophic alterations and reorganization of the parenchyma, increase in the portal pressure and enlargement of the spleen.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202720002-4

1/2 017 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--CLINIKO DOSIMETRIC PREPARATION TO THE RADIATION OF THE PATIENT -U-

AUTHOR-(03)-RUDERMAN, A.I., VAYNBERG, M.SH., BALTER, S.A.

COUNTRY OF INFO--USSR

SOURCE--MEDITSINSKAYA RADIOLOGIYA, 1970, VOL 15, NR 5, PP 40-43

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--RADIUM, RADIOTHERAPY, IRRADIATION DOSIMETRY, DIAGNOSTIC MEDICINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1998/0274 STEP NO--UR/0241/70/015/005/0040/0043

CIRC ACCESSION NO--AP0120963

UNCLASSIFIED

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202720002-4

2/2 017 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0120963

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. INCREASE OF THE EFFECTIVENESS OF RADIUM THERAPY ESSENTIALLY DEPENDS UPON THE METHOD OF CLINICO DOSIMETRIC PREPARATION TO THE RADIATION OF THE PATIENT TO IRRADIATION. A NUMBER OF TASKS ARE SET FORTH WHICH SHOULD BE SOLVED DURING THE PREPARATORY STAGE TO IRRADIATION WITH DUE CONSIDERATION OF INDIVIDUAL PECULIARITIES OF THE PATIENT. THE AUTHORS ENUMERATE THE REQUIRED AUXILIARY EQUIPMENT AND DESCRIBE THEIR EXPERIENCE ON THE PREPARATION TO THE RADIATION OF THE PATIENT BY SPECIALISTS ON RADIUM THERAPY, X RAY DIAGNOSIS AND CLINICAL DOSIMETRY. FACILITY: INSTITUT EKSPERIMENTAL'NOY I KLINICHESKOY ONKOLOGII AMN SSSR.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202720002-4

USSR

UDC: 681.325.65

FRANCISHVILI, I. V., POPOVA, G. M., USKACH, M. A., FETISOVA, S. V., MOSKOV, B. A., RUDERMAN, L. Z., KOPEYKIN, G. A., Institute of Automation and Remote Control (Technical Cybernetics)

"An Element of Homogeneous Structure"

USSR Author's Certificate No 287115, filed 11 Mar 69, published 18 Feb 71 (from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 10, Oct 71, Abstract No 10B169 P)

Translation: Elements are known which can be used as cells of homogeneous structure in addition to other applications. A multifunctional element used as a cell of homogeneous structure has the disadvantage that only the outputs are commutated in such an element, and the logic inputs are not commutated. This limits its functional possibilities: e. g., the cell cannot be used for high-speed homogeneous structures with feed-through current lines through which signals propagate with practically no delay (bus structures). For coupling to the lines, the cells must have commutatable inputs and outputs: i. e., they must receive signals from the line and transfer signals to the line. In addition, in the case of external interference the information must be periodically transferred to the cell flip-flops to correct

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202720002-4

USSR

PRANGISHVILI, I. V. et al., Soviet Patent No 287115

-speed bus structures, as well as to improve the interference suppression of the structure by means of multiple transfer. One illustration.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202720002-4

USSR

PRANGISHVILI, I. V. et al., Soviet Patent No 287115

failures which may occur. In a multifunctional logic circuit in the multiple-transfer mode, all flip-flops are preset to the zero state each time, regardless of the presence of failures. This interrupts the function being realized by the structure each time, which is a considerable disadvantage of the logic circuit. The purpose of this invention is to extend the functional possibilities and increase the speed of the homogeneous structure. In the proposed element, this purpose is achieved by redistributing the control circuit between the inputs and outputs of the element without increasing the total number of components: i. e.,some of the inputs and outputs are made commutatable, and some are not. Only the commutatable inputs and outputs are used in connecting the element to the lines. In connecting the elements to one another, the noncommutatable inputs of one element are connected to the commutatable inputs of the other, and vice versa. Thus between any elements of the structure (between adjacent cells or between the cells and the lines) a controllable data transmission channel is formed which may be switched on or off depending on the debugging code. The circuit for setting and resetting the flip-flops is made in such a way that when information is being transferred,the flip-flops are set immediately to a predetermined state without presetting to the zero state in order to correct failures. This procedure makes it possible to use a logic cell in high-

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202720002-4

USSR UDC 681.3.056

PRANGISHVILI, I. V., POPOVA, G. M., USKACH, M. A., FETISOVA, S. V., MOSKOV, B. A., RUDERMAN, L. Z., KOPEYKIN, G. A., Institute of Automation and Remote Control (Technical Cybernetics)

"An Element of Homogeneous Structure"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, 1970, No 35, Soviet Patent No 287115, class 21, filed 11 Mar 69, published 19 Nov 70, pp 62-63

Translation: This Author's Certificate introduces an element of homogeneous structure which contains AND, OR, AND-NOT and NOT circuits, flip-flops, commutated inputs, noncommutated inputs, and inputs for horizontal and vertical tuning lines. As a distinguishing feature of the patent, the functional possibilities of the element are extended and the speed of the homogeneous structure is increased by connecting the inputs of the AND circuits for setting the flip-flops to one, to the horizontal and vertical tuning lines, while the inputs of the AND circuits for setting the flip-flops to zero are connected to the horizontal tuning lines, and through the NOT circuits to the vertical tuning lines. The outputs of the first two flip-flops are connected to the inputs of the OR circuits, which are

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USSR

PRANGISHVILI, I. V., et al., Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, 1970, No 35, Soviet Patent No 287115, class 21, filed 11 Mar 69, published 19 Nov 70, pp 62-63

also connected to the commutated inputs of the element. The outputs of these OR circuits are connected together with the noncommutated inputs of the element through an AND circuit to the input of a "mod 2 addition" circuit. Also connected to this addition circuit are the outputs of a third flip-flop. The outputs of the remaining flip-flops are connected to AND-NOT output circuits, whose inputs are also connected to the output of the "mod 2 addition" circuit and through a NOT element to one of the outputs of the structure element.

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UDC 581.327.11

GOLOVIZNIN, K. M., ZARETSKAS, V.-S. S., RAGUL'SKIS, K. M., RUDGAL'VIS, B. V., YAKUTIS, T. V., Kaunas Polytechnical Institute

"A Device for Data Registration"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, 1970, No 36, Soviet Patent No 288413, class 42, filed 23 May 69, published 3 Dec 70, p 154

Translation: This Author's Certificate introduces a device for data registration which contains a videographic tube with deflecting system, and a hollow drum with a carrier. As a distinguishing feature of the patent, the functional possibilities of the device are extended by installing additional electrodes along the printing line of the videographic tube. These electrodes are connected to one of the outputs of a trace module whose other output is connected to the beam current modulator of the tube, and the deflecting system is connected to the recording signal amplifier, the scanning oscillator and the input of the trace module respectively.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202720002-4

USSR

UDC: 621

RUDICH, N. V.

"An Electromechanical Filter"

USSR Author's Certificate No 270126, filed 6 Sep 68, published 30 Jul 70 (from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1D258 P)

Translation: An electromechanical filter is proposed which is equipped with a fiber-optics resonator with one end of the optical fiber securely held by a clamp. In order to control the width of the filter passband, the clamp is comprised of two plates which are displaced relative to one another in the direction of the optical fiber, holding the optical fiber between them.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202720002-4

AA0040727 RUDICHEV K.P. UR 0482

Soviet Inventions Illustrated, Section I Chemical, Derwent,

242338 HEAT-INSULATION of the top part of a steel ingot is provided by a rapidly hardening composition which is poured between the casting mould and a model. In an example, the composition consists of 95-96% of quartz sand and 4-5% of ferrochrome slag, with addition of 7-10% of a binder comprising water glass and a foaming agent). The insulation does not require any additional drying; it is porous and permeable to gases. This method is simpler and more rapid than the conventional methods.

12.5.68 as 1239974/22-2. V.G. DODOKA et alia. "ZAPOROZHSTAL'" WORKS. (2.9.69) Bul 15/25.4.69. Class 31b. Int.Cl.B 22d.

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202720002-4"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202720002-4

AA0040727

AUTHORS: Dodoka, V. G.; Zhil'ko, M. M.; Podgorodetskiy, A. A.; Gurskiy, G. L.; Tkachenko, A. S.; Shchastnyy, P. M.; Shevlyakov, N. P.; Petrov, L. G.; Rudichev, K. P.; and Sidorenko, O. A.

Zavod "Zaporozhstal'"

19750380

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202720002-4"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202720002-4

USSR

RUDIK, A. P.

UDC 621.039.51

"Nuclear Reactors and the Pontryagin Principle of the Maximum"

Moscow, Atomizdat, 1971, p 2

Translation of Annotation: This monograph is devoted to problems in the optimization of the physical characteristics of nuclear reactors. It presents compact but complete information regarding the mathematical optimization method known as the L. S. Pontryagin principle of the maximum. The explanation is accompanied by elementary examples of reactor physics. Solutions of spatial optimization reactor problems and problems of optimal transient processes in reactors are examined in detail. Also discussed are problems in the optimal irradiation of isotopes, space-time reactor problems, controls of xenon spatial distribution, controls of reactors with distributed parameters, reactor shielding problems, numerical methods for solving optimization problems, and dynamic programming. There are 41 drawings, 14 tables, and a bibliography of 19 titles.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202720002-4

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RUDIK, A. P., Atomizdat, 1971, pp 205-208

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RUDIK, A. P., Atomizdat, 1971, pp 205-208

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202720002-4"

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202720002-4

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UNCLASSIFIED

TITLE—TEMPERATURE FUNCTION OF THE FLUORESCENCE POLARIZATION OF PHTHALIMIDE SOLUTIONS ACCORDING TO THE ABSORPTION SPECTRUM -U-

PROCESSING DATE—30OCT70

AUTHOR-(03)-RUDIK, K.I., PIKULIK, L.G., KOSTKO, M.YA.

COUNTRY OF INFO--USSR

SOURCE—IZV. VYSSH. UCHEB. ZAVED., FIZ. 1970, 13(3), 76-81

DATE PUBLISHED———70

SUBJECT AREAS—CHEMISTRY, PHYSICS

TOPIC TAGS—IMIDE, FLUORESCENCE, GLYCEROL, BUTANOL, PROPANOL, ABSORPTION SPECTRUM, THERMAL EFFECT, EXCITED STATE

CONTROL MARKING—NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/0847

STEP NO--UR/0139/70/013/003/0076/0081

CIRC ACCESSION NO--AP0124512

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202720002-4"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202720002-4

2/2 020 UNCLASSIFIED

CIRC ACCESSION NO--AP0124512 PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF THE WAVELENGTH OF THE EXCITATION RADIATION ON THE DEGREE OF POLARIZATION OF THE FLUORESCENCE OF SOLNS. OF 3 AND 4,AMINOPHTHALIMIDE, AND 3,MONOMETHYLAMINO,N,METHYLPHTHALIMIDE IN GLYCEROL, ISO,BUOH, AND PROH WAS STUDIED BY MEASURING ABSORPTION SPECTRA OF THE SOLNS. AT NEGATIVE 80 TO 70DEGREES. VARIOUS CONCNS. OF THE PHTHALIMIDES, AND VARIOUS DURATIONS AND WAVELENGTH OF THE EXCITATION RADIATION. AT HIGH TEMPS. THE EXCITATION RADIATION FREQUENCY DEPENDENCE ON THE DEGREE OF POLARIZATION IS NEGLIGIBLE. IN THE LONGWAVE EXCITATION REGION, THE DEGREE OF POLARIZATION INCREASES WITH DECREASING TEMP. TO A MAX. OF SIMILAR TO 50PERCENT. THE FREQUENCY DEPENDENCE OF THE POLARIZATION IS ALSO DETD. BY THE DURATION OF THE EXCITATION RADIATION. THE RESULTS ARE DISCUSSED IN TERMS OF THE SUPERPOSITION OF THE 1ST AND 2ND BAND IN THE SPECTRUM.

FACILITY: BELORUSS. TEKHNOL. INST. IM. KIROVA, MINSK, USSR.

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202720002-4"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202720002-4

1/2 022 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--SPECTRAL DEPENDENCE OF THE ANISTROPY OF THE EMISSION OF COMPLEX MOLECULAR SOLUTIONS -U-

AUTHOR-(02)-RUDIK, K.I., PIKULIK, L.G.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. FIZ. 1970, 34(3), 611-14

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ANISOTROPY, AMINE, PHTHALIC ACID, IMIDE, HIGH TEMPERATURE EFFECT, LOW TEMPERATURE EFFECT, GLYCEROL, BUTANOL, PROPANOL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/2020 STEP NO--UR/0048/70/034/003/0611/0614

CIRC ACCESSION NO--AP0125608

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202720002-4"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202720002-4

2/2 022 UNCLASSIFIED

CIRC ACCESSION NO--AP0125608 PROCESSING DATE--13NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF TEMP. ON THE DEPENDENCE OF THE ANISOTROPY R OF EMISSION ON THE EXCITATION FREQUENCY NU SUBEX WAS STUDIED IN GLYCEROL, ISO BUOH, AND PROH SOLNS. OF 3,AMINOPHTHALIMIDE, 4,AMINOPHTHALIMIDE, AND 3,METHYLAMINO,N,METHYLPHTHALIMIDE (I). AT COMPARATIVELY HIGH TEMPS. THE DEPENDENCE OF R ON NU SUBEX WAS ONLY SLIGHT BUT BOTH THE ABS. VALUE OF R AND THE NU SUBEX DEPENDENCE INCREASED WITH DECREASING TEMP. AT SUFFICIENTLY LOW TEMP.; E.G., AT MINUS 20DEGREES FOR I IN GLYCEROL, FURTHER COOLING OF THE SOLN. ALMOST DID NOT CHANGE THE ANISOTROPY OF THE LONG WAVE RADIATION BUT PRODUCED A SIGNIFICANT DROP IN R AT HIGH NU SUBEX. FACILITY: BELORUSS. TEKHNOL. INST. IM. KIROVA, USSR.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202720002-4

USSR

UDC: 539.1.07.55:621.565

BIGANT, A. Ya., BANASHEK, V. E., RUDIK, M. P., SKAKODUB, G. A.

"A Cryostat Housing for Semiconductor Detectors of Radioactive Emission"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 26, 1970, Soviet Patent No 278907, Class 21, filed 31 Jul 67, p 70

Abstract: This Author's Certificate introduces a cryostat housing for semiconductor detectors of radioactive emission. As a distinguishing feature of the patent, thermal coupling with the ambient atmosphere is reduced by making the unit in the form of an evacuated glass tube with metal vessels fastened to the end by means of glass-to-metal seals. A metal bulb is attached to one of these vessels with a vacuum-tight seal, and a metal refrigerator tube with radioactive emission detector attached is fastened to the other vessel. The radiation emission detector is fastened to the metal bulb by means of a spring contact, and a sorption pump is enclosed in the above-mentioned refrigerator tube.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202720002-4

USSR

RUDIN, A. M. UDC: 533.652/.661.013

"Two Methods for Compensating Side Winds in Automatic Aircraft Stabilization Systems"

Tr. 3-go Vses. soveshchaniya po teorii invariantnosti i yeye primeneniyu v sistemakh avtomat. upr. T. 2. Primeneniye invariantn. sistem avtomat. upr. (Works of the Third All-Union Conference on the Theory of Invariance and Its Application to Automatic Control Systems; Vol. 2, Application of Invariance to Automatic Control Systems) Moscow, "Nauka," 1970, pp 197-204 (from RZh-Mekhanika, No. 8, Aug 70, Abstract No. 8B460)

Translation: The automatic control of an aircraft in landing is investigated; this problem is the realization of a stable monotonic approximation of the aircraft to the landing line and the stabilization on it under the conditions of noise in the radio equipment and disturbances from lateral winds. It is assumed that through a beacon-receiver system, the angular deviation of the aircraft from the landing line in a system of polar coordinates is

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202720002-4"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202720002-4

USSR

RUDIN, A. M., Tr. 3-go Vses. soveshchaniya po teorii invariantnosti i yeye primeneniyu v sistemakh avtomat. upr. T. 2. Primeneniye invariantn. sistem avtomat. upr., Vol 2, 1970, pp 197-204

recorded, the pole of the coordinate system coinciding with the beacon position. In existing automatic systems, the control of the aircraft position on the landing trajectory is applied through internal compensation of the side wind disturbances. To provide accurate control in the steady state with a constant lateral wind, the course signal coupling should be flexible. The problem of invariance in connection with the constant side wind can be solved through autonomous compensation for this disturbance, which essentially involves measurement of the disturbance and formation of the corresponding control signal. The measurement can be made by a combination of signals from a Doppler transmitter and a gyro-inertial platform. Electronic modeling results indicate the superiority of autonomous systems of compensation for side winds over the existing ones with regard to control stability for varying system parameters and invariance for the side wind. Bibliography of four. G. S. Aronin

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202720002-4

USSR

UDC 621.385.032.11 → 621.52

SOLOV'YEV, A.V., TERENT'YEV, G.G., BRUK, S.G., LYTKIN, YU. V., YEPIFANOV, V.N., RUDIN, G.A.

"On The Use Of Type 'NORD' Magnetodischarge Pumps For Evacuation Of Microwave Devices"

Elektron. tekhnika. Nauchno-tekhn. sb. Tekhnol. i organiz. proiz-va (Electronic Technology. Scientific-Technical Collection. Technology And Organization Of Production), 1970, Issue 5(37), pp 57-60 (from RZh--Elektronika i yeye primenen-iye, No 2, February 1971, Abstract No 2A115)

Translation: Use of "NORD" magnetodischarge pumps with an evacuation rate of 25 and 100 l/sec in the production of microwave tubes makes it possible to increase the average useful life of the devices and the rate of output of suitable devices (by 5%) in comparison with that occuring with use of oil methods of evacuation. A unique vacuum system of evacuation stations is created with identical rectifier blocks, equal dimensions of vacuum ducts and arrangement of the manometer data units [datchik]. For stable operation of the magnetodischarge pumps of the types indicated, it is necessary at monthly intervals to degas them at a temperature of 300--350° C (the NORD-100 for 5 hours and the NORD-25 for 3--3.5 hours), and also reliably to guard against the entrance of oil from the forevacuum pump. 2 ill. 1 tab. 3 ref. G.B.

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