"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200230007-5

2/2 020 UNCLASSIFIED PROCESSING DATE--27NOV70
CIRC ACCESSION NO--AP0136459
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. COMPARATIVE ANALYSIS OF A CONVENTIONAL UNIVIBRATOR EMPLOYING GLOW DISCHARGE THYRATRONS AND A PROPOSED UNIVIBRATOR WHICH DIFFERS FROM THE FIRST IN THAT THE TIME SETTING RC CIRCUIT IS CONNECTED BETWEEN THE THYRATRON CATHODES AND NOT BETWEEN THE CATHODE AND THE CASING (AS IS CONVENTIONALLY THE CASE). IT IS SHOWN THAT THE MODIFICATION PROPOSED MAKES IT POSSIBLE TO INCREASES UNIVIBRATOR TIME LAG BY SEVERAL TIMES, THE R AND C VALUES BEING EQUAL.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200230007-5

1/2 015 UNCLASSIFIED PROCESSING DATE--30OCT7(

TITLE--MECHANISM OF POLYURETHANE SYNTHESIS IN THE PRESENCE OF DIBUTYLTIN DILAURATE -U-

AUTHOR-(04)-LIPATOVA, T.E., BAKALO, L.A., SIROTINSKAYA, A.L., LOPATINA, V.S.

CCUNTRY OF INFO--USSR

SOURCE--VYSOKOMOL. SOEDIN., SER. A 1970, 12(4), 911-16

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS, CHEMISTRY

TOPIC TAGS--PCLYURETHANE RESIN, POLYCONDENSATION, ORGANOTIN COMPOUND, GLYCOL, ISOCYANATE, COMPLEX COMPOUND, ORGANIC SYNTHESIS

CCNTRCL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/0676 STEP NO--UR/0459/70/012/004/0911/0916

CIRC ACCESSION NO--AP0124348

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200230007-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200230007-5

2/2 015 UNCLASSIFIED PROCESSING DATE--30OCT7

CIRC ACCESSION NO--AP0124348

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE POLYCONDENSATION OF OCN(CH SUB2)SUB6 NCO WITH HO(CH SUB2 CH SUB2 O)SUB2 H IN THE PRESENCE OF BU SUB2 SN DILAURATE (I) PROCEEDS AT A CONST. RATE LESS THAN OR EQUAL TO 70PERCENT CONVERSION, I.E., IT IS INDEPENDENT OF THE MONOMER CONCN. NO SIDE PRODUCTS ARE PRODUCED AND POLYURETHANES EITHER HAVE NO EFFECT OR RETARD THE REACTION. THE REACTION RATE INCREASES WITH I CONCN. A REACTION MECHANISM IS PROPOSED INVOLVING THE FORMATION OF A GLYCOL DIISOCYANATE I COMPLEX. FACILITY: INST. KHIM. VYSOKOMOL. SOEDIN., KIEV, USSR.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200230007-5

USSR

UDC 616.921.5-085.37

BAKALOV, A. N., FEL'DMAN, E. B., and SVINARENKO, K. I., Mogilevskaya Oblast Health Department

"Some Data on the Effectiveness of Anti-Influenza Vaccination Under Conditions of an Epidemic Increase in the Incidence of Influenza and Acute Respiratory Diseases"

Minsk, Zdravookhraneniye Belorussii, No 9, Sep 70, pp 81-83

Abstract: Data on the incidence of influenza from 59 industrial enterprises were analyzed in an attempt to correlate them with the level of vaccination. It was concluded that prophylactic vaccination against influenza is ineffective and unjustifiable unless the total population is covered. Immunoprophylaxis against influenza is epidemiologically effective only when 86-99% of the population are vaccinated with dry live vaccine.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200230007-5

USSR UDC: 519.2:62-50

BAKALOV, P. M. and GRIGOR'YEV, V. A.

"Isomorphism of Infinite Systems of Differential Equations"

Alma-Ata, Vestnik, Akademii Nauk Kazakhskoy SSR, No 1(321). 1972, pp 71-75

Abstract: The purpose of this brief communication is to demonstrate that the method of finite differential equations used by K. P. Persidskiy for the analysis of infinite systems of differential equations is not the only nor, indeed, the best possible method for such analyses. The present article defines the infinite systems and discusses pseudo-random infinite systems, deriving a practical criterion for estimating the degree of intermixing produced by a concrete function in the systems. In an example, the authors use their method to obtain the same solution yielded by Persidskiy in an earlier article published in the same journal (Beskonechnyye sistemy differentsial'nykh uravneniy -- Infinite Systems of Differential Equations -- No 4(8), 1955). A second example considers the Volterra integral equation of the second kind, which is solved by the method of successive approximations.
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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200230007-5

USSR

UDC: 621.376:530.145.6

BAKALOV, V. I. and KRAVTSOV, N. A.

"~~Resonance~~ Optical Deflectors"

V sb. Vopr. radiotekhniki (Problems in Electronic Engineering--collection of works) Tula, Tula Polytechnical Institute, 1970, pp 53-56 (from RZh-Radiotekhnika, No. 3, March 71, Abstract No. 3D377)

Translation: This paper gives the results of a theoretical investigation into the development of resonance deflecting systems in the optical range. It is shown that such systems may possess more resolving power, higher sensitivity and lower inertia than existing deflectors. Resume

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200230007-5

USSR UDC: 621.376:530.145.6

POKROVSKIY, Yu. A., BAKALOV, V. I., PARINSKIY, A. Ya., and MILITEYEVA, G. V.

"Resonance Angular Devices in the Optical Range"

V sb. Vopr. radiotekhniki (Electronic Engineering Problems--collection of works) Tula, Tula Polytechnical Institute, 1970, pp 45-53 (from RZh-Radiotekhnika, No. 3, March 71, Abstract No. 3D376)

Translation: This paper demonstrates the possibility of using resonance angular devices as broad-band light modulators, transverse oscillation selectors in open resonators, and Q modulators for lasers. Their superiority over similar devices of the non-resonance type is noted. Resume

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200230007-5

USSR

UDC: 621.372.852.1

BAKALOV, V. I., PARINSKIY, A. Ya., and KRAVTSOV, N. L.

"Investigating a Resonance Angle Filter in the Optical and UHF Ranges"

V sb. Vopr. radiotekhniki (Radio Engineering Problems--collection of works) Tula, Tula Polytechnical Institute, 1970, pp 28-44 (from RZh-Radiotekhnika, No. 3, March 71, Abstract No. 3B155)

Translation: Results are given of a theoretical and experimental investigation of an angular selective system of the single-layer resonance angle filter. The spectral (angular and frequency) characteristics of the interference system and the local and integral transmission characteristics with rectangular and sinusoidal spaced pulses at the input are obtained.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200230007-5

USSR

UDC: 621.391.883

BAKALOV, V. P.

"Improving the Utility Factor of the Transmission Capability in a Telemetering Channel"

Moscow, Radiotekhnika, No 10, 1972, pp 88-90

Abstract: In this brief communication, the author considers the transmission of continuous information with a limited spectrum through a telemetric channel of particular band width with weak additive noise. To estimate the effectiveness of the transmission, he uses the formula $\mu = R_V/C$, $0 \leq \mu \leq 1$, where R_V is the flow of useful information and C is the transmission capability of the telemetric channel, as the criterion. It is assumed that the transmitted signal is input to a receiver providing minimum mean-square error. An expression is obtained for the criterion μ as a function of the generalized signal/noise ratio and the parameter reflecting the band width, and the conditions for maximum μ are obtained. The case of a multichannel AM-FM system is considered as an example, in which it is assumed that all the channels are identical and have ideal amplitude-frequency characteristics.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200230007-5

USSR

UDC: 621.391.883

BAKALOV, V. P., Institute of Physiology, Siberian Department, Academy of Sciences of the USSR

"Optimizing Telemetric Systems With a Generalized Optimality Criterion"

Kiev, Otbor i Peredacha Informatsii, Resp. Mezhved. Sb., No 30, 1971, pp 32-38

Abstract: A generalized optimality criterion is found, and possible methods are considered for optimizing telemetric systems with respect to this criterion. It is assumed that a system with throughput $C(V)$ is used for transmitting a given quantity of information, creating a flow of messages $R(V) = R(U) - R(N)$ at the output, where $R(U)$ is the information flow produced by the set of sources U; $R(N)$ is parasitic flow characterizing the destructive capacity of interference. It is assumed that transmission of a unit of information from the sources $x \in U$ to the set of users $x \in V$ in the given system requires making ν functional transformations realized in time $T_0 \frac{1}{R(U)}$. The quantity $W = \frac{R(U)}{\nu} \frac{1}{T_0 \nu}$ is the average flow of infor-

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200230007-5

USSR

BAKALOV, V. P., Otbor i Peredacha Informatsii, No 30, 1971, pp 32-38

mation falling to one normalized operation. The criterion of relative productivity of operations,

$$W = \frac{W_0}{C(V)} = \frac{P(V)}{\sqrt{C(V)}},$$

characterizes the relative information flow produced by a single normalized operation. Formulas are derived which express this criterion in terms of the corresponding transmission parameters with frequency multiplexing of channels. Conditions for optimum selection of these parameters are found. Curves are presented which can be used to determine optimum methods of modulation and values of the transmission parameters for a given signal energy.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200230007-5

USSR

UDC 577.1:615.7/9

BAKALYAN, P. A.

"Change in Phosphatase Activity of Certain Organs and Blood Serum Under Conditions of Experimental Fluorosis"

Zh. eksperim. i klinich. med. (Journal of Experimental and Clinical Medicine), 1971, 11, No 5, pp 17-21 (Armenian summary) (from RZh-Biologicheskaya Khimiya, No 10, 25 May 1972, Abstract No 10F2203 by M. Shuster)

Translation: In male rats that received 5 mg F^-/kg (in the form of NaF) every day with their feed for 120 days, the activity of acid (I) and alkaline (II) phosphatase declined in all examined organs (liver, small intestine, brain, heart, skeletal muscles). The extent of the decline varied in different organs. The activity of II dropped in the blood serum during the initial inoculation period, remained depressed till the end of the second month, then rose, and by the end of the fourth month was higher than initial activity. The activity of I underwent less intensive changes and by the end of the experiment was somewhat elevated. The author explains the elevation in the activity of II by the uptake by the blood from the organs.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200230007-5

USSR UDC 621.378.33

BAKALYAR, A. I., USOL'TSEV, I. F.

"Investigation of the Effect Which Localized Axial Magnetic Fields Have on the Beat Signal Frequency in a Laser With Nearly Linear Polarization of Emission"

Moscow, Kvantovaya Elektronika, Sbornik Statey, No 4, "Sovetskoye Radio", 1971, pp 91-94

Abstract: The paper presents the results of experimental studies of the frequency response characteristics of the signal resulting from beating of opposing waves in a ring laser as a function of the effect of localized axial magnetic fields applied to the active material. It is shown that the influence of these fields is determined chiefly by the polarization characteristics of the emission. Four figures, bibliography of two titles.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200230007-5

USSR UDC 681.325.65

CHETVERIKOV, V. N., SOLOMONOV, L. A., MEN'KOV, A. V., and BAKANOVICH, E. A.,
Moscow Higher Technical School

"Random Pulse Flow Generator"

USSR Authors' Certificate No 308431, Cl. G 06 f 15/34, filed 19 Dec 69, published 30 Sep 71 (from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 5, May 72, Abstract No 5B203P)

Translation: The proposed invention is related to computer technology and can be used in the construction of stochastic computers and models and the creation of random-number generators for digital computers; to simulate, if necessary, random effects with required probability characteristics of investigated objects; and in all those cases where it is necessary to obtain a flow of random pulse signals, the time intervals between which represent random variables distributed according to the required probability law.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200230007-5

1/3 021 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--CYCLOTRON PHONON ABSORPTION IN DEGENERATE SEMI CONDUCTORS -U-

AUTHOR-(02)-BAKANAS, R.K., LEVINSON, I.B.

COUNTRY OF INFO--USSR

SOURCE--PIS'MA ZH. EKSP. TEOR. FIZ. 1970, 11(2), 141-4

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--CYCLOTRON, PHONON, ABSORPTION, INDIUM ANTIMONIDE SEMICONDUCTOR

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1982/1564 STEP NO--UR/0386/70/011/002/0141/0144

CIRC ACCESSION NO--AP0052767

UNCLASSIFIED

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200230007-5

2/3 021 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0052767

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SOME PECULIARITIES OF OPTICAL PHONON ABSORPTION ASSOCD. WITH ELECTRON GAS DEGENERACY ZETA LARGER THAN KT (ZETA IS THE FERMI LEVEL) AND WITH THE QUANTIZING PROPERTIES OF THE MAGNETIC FIELD HW SUBC IS GREATER THAN KT (W SUBC IS THE CYCLOTRON FREQUENCY) ARE CONSIDERED. IT IS ASSUMED FOR THE SAKE OF SIMPLICITY THAT KT IS LESS THAN HW SUBO AND T EQUALS 0 (W SUBO IS THE DISPERSION FREE FREQUENCY). THE ENERGY CHANGE OF THE ELECTRON DURING PHOTON ABSORPTION (HW) AND THE EMISSION OF A PHONON (HW SUBO) IS EF MINUS EI EQUALS H(W MINUS W SUBO). IN THE TRANSITION, ONLY STATES TAKE PART, THE ENERGY OF WHICH DIFFERS FROM ZETA BUT NOT MORE THAN H(W MINUS W SUBO). AT A CRIT. W, NEW LANDAU STATES, EPSILON SUBE, FALL INTO THIS ENERGY INTERVAL. AT W SUBE, TRANSITIONS INTO A "NEW BRANCH" OF FINITE STATES BECOME POSSIBLE, WHEREBY THE ABSORPTION COEFF., KW, ACQUIRES THRESHOLD CHARACTERISTICS. AT A STILL HIGHER FREQUENCY, W SUBE THE NO. OF ELECTRONS OF THE EPSILON SUBE LEVEL WHICH ARE IN THE ADMISSIBLE RANGE OF INITIAL STATES GROWS RAPIDLY AND K SUBOMEGA INCREASES STEEPLY. ABOVE OMEGA SUB3, THE RAPID GROWTH CEASES AND K OMEGA OBTAINS REVERSE THRESHOLD CHARACTERISTICS. AS AN EXAMPLE, N-INSB IS CONSIDERED, ASSUMING A PARABOLIC BAND (M EQUALS 0.013M SUBO) AND DISREGARDING SPIN SPLITTING. AT N EQUALS 10 PRIME17-CM PRIME3, ZETA (H EQUALS 0) EQUALS 700DEGREESK.

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3/3 021 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0052767

ABSTRACT/EXTRACT--IN A FIELD H EQUALS 60 KOE, ZETA EQUALS 30DEGREESK AND OMEGA SUBC EQUALS 0.8 TIMES 10 PRIME14 SEC PRIME NEGATIVE1 EQUALS 620DEGREESK. HAVING IN MIND THAT OMEGA SUBO EQUALS 3.7 TIMES 10 PRIME13 SEC PRIME NEGATIVE1 EQUALS 280DEGREESK, THE WAVELENGTHS OF THE RESP. CRIT. FREQUENCIES ARE LAMBDA SUB2 EQUALS 27 MU AND LAMBDA SUB1 PLUS PLUS EQUALS 22 MU. THE VALUE OF K SUBOMEGA IS ESTD. BY TAKING INTO ACCOUNT THAT IN THE PRINCIPAL PEAK OF THE CYCLOTRON PHONON ABSORPTION FOR N EQUALS 2 TIMES 10 PRIME14-CM PRIME3, ONE OBTAINS EXPTL. K SUBOMEGA EQUALS 0.1 CM PRIME NEGATIVE1, WHICH AGREES WITH THEORY. FOR N EQUALS 10 PRIME17-CM PRIME3, ONE-SHOULD EXPECT K SUBOMEGA EQUALS 10 CM PRIME NEGATIVE1 OFF THE PEAK.

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USSR

BAKANINA, L. P.; KOZEL, S. M.; LOKSHIN, G. R. (Moscow Physicotechnical Institute)

"Photodetection of Coherent Radiation Scattered by a Moving Diffusion Surface by a Receiver with a Finite Aperture"

Tomsk, Izvestiya Vysshikh Uchebnykh Zavedeniy: Fizika; July, 1971; pp 52-8

ABSTRACT: The question of the effect of the size and shape of the aperture of a receiver on the spectral properties of a photocurrent, with photodetection of scattered coherent radiation, is explored theoretically and experimentally. It is shown that this effect is substantially different in near and distant wave regions. Equations are obtained for the photocurrent spectra with various sizes of receiver apertures.

The article includes 24 equations and two figures. There are 8 references.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200230007-5

USSR UDC 621.396.6-181.5

BAKANOV, G. P., KRYGIN, V. M., SMIRNOV, V. I.

"An Installation for Studying Electronic Lithography"

Izv. Leningr. elektrotekhn. in-ta (News of the Leningrad Electrical Engineering Institute), 1972, Vyp. 92, pp 20-23 (from RZh-Radiotekhnika, No 7, Jul 71, Abstract No 7V298)

Translation: The described device is based on the M-9 electron microscope: the changes made are due to the necessity for substituting a short-focus electron gun for the long-focus unit in the instrument. In order to study the electronic lithographic process, a beam-deflecting oscillator is developed to produce various images: rows of dots, rows of parallel lines, rectangles. A method of checking spot diameter is described. Three illustrations, bibliography of one title. N. S.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200230007-5

USSR

UDC 669.18:621.746.58

KABLUKOVSKIY, A. F., BAKANOV, K. P., TULIN, N. A., GERASIMOV, YU. V., and KOSYREV, L. K.

"Increasing the Quality of Steels and Alloys by Refining Them with Argon Outside Furnace"

Moscow, Stal', No 12, 1972, pp 1087-1091

Abstract: The suggested method for th refining of metals uses a 100-ton capacity pouring ladle with a minimum of three built-in (ladle bottom) refractory plugs with passages for argon. The argon in supplied under pressure in the amount of 0.4-1.0 m^3/ton of metal for removal of non-metallic inclusions, and in the amount of 1.5-3.0 m^3/ton, for elimination of hydrogen. Preliminary tests at many plants and in laboratories indicated that the method is inexpensive and does not require a heavy capital investiment. The method allows production of low-carbon heat-resistant steels in open arc furnaces. In addition to refining, the argon facilitates the deoxidation of steel by carbon. Concentration of gases in 1-2Kh13 stainless steel after refining with argon decreased by 45% (concentration of oxygen, hydrogen, and nitrogen decreased by 43, 40 and 12%, respectively). All refined steel and alloys studied after refining were characterized by high density and better microstructure. The density

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USSR

KABLUKOVSKIY, A. F., et al., Stal', No 12, 1972, pp 1087-1091

of 38KhMYuA steel and EI602 alloy increased from 7.7353 to 7.7506 and from 8.3275 to 8. 3403 g/cm^3, respectively, after 7-10 minutes refining with argon. Good results were obtained in the production of bearing steel. The schematic diagram of the ladle with refractory plugs (including theri sizes and manufacturing steps) is presented.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200230007-5

BAKANOV K.P.

Acc. Nr.: AN0104123 Ref. Code: 72R9003

TITLE-- ANNOUNCEMENT OF THE COMMITTEE ON LENIN AND STATE PRIZES, U.S.S.R.

NEWSPAPER-- IZVESTIYA, MAY 28, 1970, P 4, COLS 1-5

ABSTRACT-- NINETY ONE BASIC AND APPLIED RESEARCH WORKS HAVE BEEN NOMINATED FOR THE STATE PRIZES. TWO OF THESE, "THE MULTI-PURPOSE INDUSTRIAL HELICOPTER KA-26", BY N. I. KAMOV, V. B. AL,PEROVICH, V. B. BARSHEVSKIY, A. A. DMITRIYEV, G. I. IOFFE, M. A. KUPFER, L. A. POTASHNIK, N. N. PRIOROV, A. G. SATAROV, I. M. VEDENEYEV, S. B. BREN, AND V. A. NAZAROV, AND "THE DEVELOPMENT OF TURBOFAN JET ENGINES NK-8 AND NK-8-4, AND THE DEVELOPMENT AND REDUCTION TO SERIAL PRODUCTION A SYSTEM OF TECHNOLOGICAL PROCESSES WHICH ASSURED WIDE USES FOR TITANIUM ALLOYS", BY N. D. KUZNETSOV, M. T. VASILISHIN, V. A. KURGANOV, P. M. MARKIN, V. D. RADCHENKO, P. A. SUKHOV, A. A. MUKHIN, V. G. SHITOV, G. I. MUSHENKO, L. A. SHKODO, AND G. P. DOLGOLENKO, HAVE BEEN SUBMITTED BY THE MINISTRY OF THE AVIATION INDUSTRY.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200230007-5

Acc. Nr.: AN0104123

"A SERIES OF INVESTIGATIONS INTO THE DYNAMICS OF A BODY WITH FLUID-FILLED CAVITIES", /65-68/, BY N. N. MOISEYEV, A. A. PETROV, V. V. RUMYANTSEV AND F. L. CHERNOUS'KO AND "ULTRA HIGH PRECISION JIG BORING MILLS WITH 1,000 X 1,600 AND 1,400 X 2,240 MM PLATENS", BY A. I. KIR'YANOV, V. G. ABRAMOVICH, I. V. GUTKIN, A. S. ALIPPIYEV, G. B. PAUKOV, AND A. S. YEGUDKIN, HAVE BEEN SUBMITTED BY THE COMPUTATION CENTER OF THE ACADEMY OF SCIENCES AND THE MINISTRY OF THE MACHINE TOOL CONSTRUCTION AND TOOL INDUSTRY, RESPECTIVELY.

"THE RADICALLY IMPROVED MELTING TECHNOLOGY OF CRITICAL-PURPOSE HIGH-ALLOY STEELS AND ALLOYS OF IMPROVED QUALITY ACHIEVED BY THE INERT GAS TREATMENT OUTSIDE THE FURNACE", BY YU. V. GERASIMOV, O. M. CHEKHOMOV, N. V. SIDOROV, S. K. FILATOV, B. A. CHEREMNYKH, R. M. KHAYRUTDINOV, I. P. BARMOTIN, L. K. KOSYREV, K. P. BAKANOV, N. N. VLASOV, P. I. MELIKHOV, AND N. A. TULIN, HAS BEEN SUBMITTED BY THE ZLATOUST METALLURGICAL PLANT.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200230007-5

USSR UDC: 621.317.7-5

BAKANOV, S. A., BONDARENKO, I. K.

"Methods of Improving Precision and Widening the Band of Multidetector Amplitude-Phase Discriminators of SHF Signals"

Dokl. Vses. nauchno-tekhn. konferentsii po radiotekhn. izmereniyam. T. 2 (Reports of the All-Union Scientific and Technical Conference on Radio Engineering Measurements. Vol. 2), Novosibirsk, 1970, pp 126-128 (from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12A405)

Translation: It is pointed out that the error of instruments designed for automatic measurement of the complex parameters of SHF devices is determined chiefly by the nonuniformity of the amplitude-frequency and phase-frequency characteristics of the amplitude — phase discriminators of SHF signals which isolate information on the amplitude and phase of the parameter being studied. The appreciable frequency-dependent error in a four-detector amplitude-phase discriminator is due to the phase angles of the detector heads. To eliminate this error component, a pickup is introduced into the amplitude-phase discriminator circuit which consists of two detector heads, each of which is coupled only to the reference channel waveguide by two dumbbell slots. The pickup signal is fed to the input of an automatic power regulator for the sweep generator. The amplitude-frequency characteristics

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200230007-5

USSR

BAKANOV, S. A., BONDARENKO, I. K., Dokl. Vses. nauchno-tekhn. konferentsii po radiotekhn. izmereniyam. T. 2, Novosibirsk, 1970, pp 126-128

of the detector heads must be identical to ensure high measurement precision. Tuning of instruments is appreciably simplified by using an amplitude-phase discriminator which contains only three detector heads (instead of 5-6); a circuit is given for such an amplitude-phase detector together with formulas which characterize its operation, including a formula for error. It is pointed out that under certain conditions this error is no greater than ±12%. E. L.

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200230007-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200230007-5

USSR UDC 621.372.88

BAKANOV, S. A., BONDARENKO, I. K., SALAMATIN, V. V.

"A Unit for Automatically Measuring the Parameters of Waveguide Devices"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 2, Jan 71, Author's Certificate No 290460, division H, filed 17 Jan 69, published 22 Dec 70, p 162

Translation: This Author's Certificate introduces a unit for automatically measuring the parameters of waveguide devices. The unit consists of a tee connected to a measurement channel and a reference channel. Installed in these channels are couplers of circular polarization and ballast loads connected to a detector section. As a distinguishing feature of the patent, the overall dimensions of the device are reduced and the design is simplified by using a section of circular waveguide to connect the couplers of circular polarization in the measurement and reference channels. Connected in series in this waveguide section are a fixed detector section and a phase-shifting plate which turns through 180 degrees.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200230007-5

USSR UDC 632.95.024:635.13

IVANOVA, Ye. P., Kazakhsky Scientific Studies Institute of Potato and Vegetable Farming, NEKRASOVA, A. S., BAKANOV, Sh. A., and MAYOROVA, R. I., Kazakh Scientific Research Institute of Regional Pathology

"The Effectiveness of Prometrin Against Weeds on Carrot Seedlings and the Occurrence of Its Residues in the Crop and in the Plant"

Moscow, Khimiya v Sel'skom Khozyzystne, No 7, Vol 11, 1973, pp 61-63

Abstract: Prometrin -- 2-methylthio-4,6-bis(isopropylamino)sym-triazine -- is one of the herbicides suggested for use on carrots in the Alma-Atinsky region. Under the conditions in this area, prometrin was singularly effective against annual monocotyledon and dicotyledon weeds. The amount of control for 3 years -- 1969 through 1971 -- is shown together with the meteorological conditions. Values for several indicators of plant productivity and vitality are shown for a control group and groups treated with 1.5 kg/hectare or 2.0 kg/hectare for 1969 and 1970. In doses of 1.5 kg/hectare it reduces the choking by 97.0% and the overall mass of weeds by 96.8%. No adverse effects on the seedlings or residue in the crop were observed for this dose. Residues were observed when higher doses (2.5 to 3.5 kg/hectare) were used. 1/1

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200230007-5

USSR UDC: 621.317.34(088.8)

ORLOV, G. M., BAKANOV, V. I.

"An SHF Reflectometer"

USSR Author's Certificate No 267710, filed 3 Jun 68, published 4 Aug 70 (from RZh-Radiotekhnika, No 2, Feb 71, Abstract No 2A366 P)

Translation: This Author's Certificate introduces an SHF reflectometer which consists of a bidirectional coupler, two calibration attenuators, a measurement attenuator, two detector heads and an indicator. A distinguishing feature of the proposed reflectometer is that measurements are simplified by using an oscillographic display as the indicator. The detector heads are connected to the "Y" input of the indicator, the heads for the reflected wave channel being connected through delay lines. E. L.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200230007-5

USSR

UDC 538.4

BAKANOV, Yu. A., DRONNIK, L. M., LEVIN, M. N., MAKAREVICH, V. K., RESHET'KO, L. M., STRIZHAK, V. Ye., TOLMACH, I. M., TROITSKIY, S. R., YANTOVSKIY, Ye. I.

"Experimental Study of Liquid-Metal Induction Machine in Pump Mode"

7-ye Soveshch. po Magnit. Gidrodinamike. T. 1 [Seventh Conference on Magnetic Hydrodynamics, Vol 1], Riga, Zinatnye Press, 1972, pp 20-23, (Translated from Referativnyy Zhurnal, Mekhanika, No 11, 1972, Abstract No 11 B43 by V. V. Blagov).

Translation: The operation of a liquid-metal induction machine in the pump mode was studied in a potassium circuit with a working pressure of up to 60 kg/cm^2. The working characteristics of the machine are presented for a temperature of 500°.

The experimental results allowed the relationship of the dimensionless criterion $\Pi = \Delta P V_s l/\sigma U^2$ to the velocity ratio $V/V_s = 1 - S$ to be established (where V_s is the synchronous speed of the rotating field, V is the velocity of the metal, ΔP is the pressure drop developed, S is the slipping, σ is the conductivity, U is the applied voltage). As the temperature changes from 1/2

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200230007-5

USSR

UDC 538.4

BAKANOV, Yu. A., DRONNIK, L. M., LEVIN, M. N., MAKAREVICH, V. K., RESHET'KO, L. M., STRIZHAK, V. Ye., TOLMACH, I. M., TROITSKIY, S. R., YANTOVSKIY, Ye. I., 7-ye Soveshch. po Magnit. Gidrodinamike. T. 1, Riga, Zinatnye Press, 1972, pp 20-23.

280 to 500° and the voltage varies from 80 to 150 v, the dependence of Π on V/V_s is universal. The maximum head is produced at small flow rates, depends on the applied voltage and where T = 500° and ΔU = 150 v is about 37 kg/cm^2; the efficiency of the machine is about 24% under these conditions. Where T = 300°, these figures are 42 and 30% respectively. The total operating time of the machine was 120 hours.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200230007-5

BAKANOV, Yu. A.

EXPERIMENTAL STUDY OF AN AC LIQUID-METAL CONDUCTION MACHINE

[Abstract of a Paper by Yu. A. Bakanov, L. G. Vlasenko, S. Ye. Dvorchik, Ya. Ya. Zandart, V. K. Makarevich, V. Ye. Strizhak, L. M. Tolmach, S. R. Troitskiy Given at the Magnetohydrodynamic Conference, pp 140-142]

A study was made of a high-temperature single-phase machine with a C-type magnetic excitation system, four pair-wise connected channels bifilar-arranged in the gap and also a III-type step-up transformer (Figure 1). The channels were executed from Kh18N10T steel 0.5 mm thick; they have a constant cross section with outside dimensions of 16.6 × 6.4 mm² and an active length of 250 mm. They are electrically connected to each other and to the sectional primary turn of the transformer (soldering the lateral faces). The flow of metal in each pair of channels is opposite. The machine has electrical insulation with thermal stability to 600°C, measuring turns for determining the magnetic fluxes and several thermocouples.

Depending on the operating mode in the experiment, various switchings of the windings were realized:

1) In the pump mode the excitation winding and the output winding of the transformer were fed from a constant energy source;

2) In the generator mode independently of the excitation, the excitation winding was fed from an outside source, and the transformer winding was connected to the useful load.

3) In the generator mode with self-excitation of the winding, the capacitance and the useful load were included according to the scheme in Figure 1.

The studies were made on a sodium loop with a sodium temperature of 300–500 °C.

The characteristic features of the conduction machines of this type and, in particular, the characteristic features of the parallel hydraulic coupling of pairs of channels leading to spurious currents through the bypass loops of circuit from the sign-variable magnetic field were noted.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200230007-5

USSR

UDC 678.674.004.14:621.397

SEDOV, L. N., VLADIMIROVA, Z. V., SAPOZHNIKOVA, YE. L., MAKEYEVA, A. A., SEMENOV, L. G., MAK-MILLIN, D. M., BAKANOV, YU. A., DIDZHYULENE, D. I., MALKINA, F. S., and ZHLABIS, S. B.

"Polyester Hermetic-Sealing Compounds"

Moscow, Plasticheskiye Massy, No 6, 1970, pp 61-62

Abstract: The authors studied compounds for the hermetic sealing of horizontal output transformer coils for television receivers. These compounds should have low viscosity in the initial state and a high hardening rate up to 100°C. In the hardened state they should possess self-extinguishability, water resistance, good mechanical and electric insulation properties, and stability of properties up to 120°C. The principal components chosen were polyester resins PN-1 and PN-69. Because of the requirement of self-extinguishability, special additives (antimony trioxide and chlorine- or fluorine-containing polymers) were introduced into the resins. In addition, mineral fillers (talc, mica, powdered quartz, titanium dioxide, powdered silica gel, etc.) were added to give the sealing compounds

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SEDOV, L. N., et al, Plasticheskiye Massy, No 6, 1970, pp 61-62

the requisite viscosity and to lower their cost. The article gives data on the hermetic sealing process. These self-extinguishing compounds are being used for the hermetic sealing of horizontal output transformers for black-and-white (1 class) and color television sets and viewing monitors.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200230007-5

1/2 055 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--PHASE TRANSFORMATIONS OF TITANIUM AND ZIRCONIUM IN SHOCK WAVES -U-

AUTHOR-(04)-GERMAN, V.N., BAKANOVA, A.A., TARASOVA, L.A., SUTULOV, YU.N.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TVERD. TELA 1970, 12(2) 637-89

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--ALLOY PHASE TRANSFORMATION, TITANIUM, ZIRCONIUM, SHOCK WAVE, X RAY DIFFRACTION, HIGH PRESSURE EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1984/0137 STEP NO--UR/0181/70/012/002/0637/0639

CIRC ACCESSION NO--AP0054933

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200230007-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200230007-5

2/2 055 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0054933

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TI AND ZR SPECIMENS WERE INVESTIGATED AFTER A BRIEF IMPULSE LOADING WITH THE AID OF SHOCK WAVES OF AMPLITUDE 120, 200, 350, AND 500 KILOBARS. AFTER SHOCK TREATMENT, THE SPECIMENS WERE ANALYZED BY X RAY DIFFRACTION. IN ALL ZR SPECIMENS AT ALL AMPLITUDES OF SHOCK PRESSURE, LINES OF A NEW PHASE WERE OBSD. THE MAX. AMT. OF THE NEW PHASE, EXCEEDING THE AMT. OF INITIAL PHASE, WAS OBTAINED AT A PRESSURE OF 350 KILOBARS. THE NEW PHASE IS BCC. WITH ALPHA EQUALS 3.568 ANGSTROM AND D. EQUALS 6.656. FOR TI, THE NEW PHASE WAS OBTAINED AT A PRESSURE OF 350 KILOBARS. IT IS CUBIC WITH ALPHA EQUALS 3.27 ANGSTROM.

UNCLASSIFIED

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200230007-5

BAKANOVA L.V.

Acc. Nr: AP0038691 Ref. Code: UR 0326

PRIMARY SOURCE: Fiziologiya Rasteniy, 1970, Vol 17, Nr 1, pp 133-138

COMPARATIVE STUDY OF HEAT RESISTANCE OF LEAVES AND SPIKELET GLUME OF SOME CEREAL PLANTS

L. V. BAKANOVA

K. A. Timiriazev Institute of Plant Physiology, USSR Academy of Sciences, Moscow

The tissues and cells of spikelet glume and the cells of barley oat and orchard grass leaf sheaths were compared with respect to heat resistance by two different methods — by stopping the plasma motion and by the direct laboratory method of determination of the temperature threshold for protoplasm coagulation. The protoplasm viscosity was determined simultaneously. The data confirm the results previously obtained (Henckel and Margolina) which show that the heat resistance of spikelet tissues is higher than that of leaf sheaths. The method based on cessation of motion of a highly viscous protoplasm yielded results which contradict those obtained by direct determination of the heat resistance on basis of the temperature threshold for coagulation of the protoplasm proteins.

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The increase of protoplasm viscosity due to divalent cations in Elodea also indicates that the indirect method of determination of heat resistance based on protoplasm movement is not applicable. It is concluded that the protoplasm movement cessation method cannot be employed for determining the relative heat resistance.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200230007-5

(5)

USSR

UDC: 621.762.2:669.1'24(088.8)

PUTIMTSEV, B. N., GRATSIANOV, Yu. A., KOZLOV, A. G., MINCHER, A. N., LEVINZON, V. Kh., STERLIN, R. G., BAKANOVA, T. P., BIKEZIN, K. P., MIKHEYEV, V. V.

"Method of Production of Iron-Nickel Alloy Powders"

USSR Author's Certificate Number 343771, Filed 7/04/71, Published 11/08/72 (Translated from Referativnyy Zhurnal Metallurgiya, No 8, 1973, Abstract No 8G394P).

Translation: A method is suggested for embrittlement of Fe-Ni alloys, designed for the production of powders by mechanical grinding. Fe-Ni alloys are embrittled by introduction of S to the initial melt. In order to increase the dispersion and technological properties of the powders, 0.03-0.07 wt % oxygen is also introduced to the initial melt, with a ratio of oxygen to S of 2.0-7.0.

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USSR

UDC 632.95

STONOV, L. D., BAKUMENKO, L. A., USACHEVA, N. M., MANDEL'BAUM, YA. A., and BAKANOVA, Z. M.

"A Herbicide"

USSR Author's Certificate No 347045, filed 9 Mar 71, published 6 Sep 72 (from RZh-Khimiya, No 10, May 73, Abstract No 10N605P by T. A. Belyayeva)

Translation: O-(2-Nitrophenyl)-O-methyl-N-n-propylamidothiophosphate (I) in a dose of 1-2 kg/ha is proposed as a herbicide on fields of flax and vegetable crops. With application before sprouting, the activity of (I) in %: for oats 24-15, millet 98-100, beans 20-22, lettuce 17-67, beets 67-87, amaranth 75-88, flax and radish 0. The compound can be used in a mixture with other active compounds to broaden its spectrum of action.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200230007-5

USSR

UDC 632.95

BAKANOVA, Z. M., MANDEL'BAUM, YA. A., and MEL'NIKOV, N. N.

"Methylnitrophos"

V sb. Khim. sredstva zashchity rast. (Chemical Plant Protectants -- collection of works), vyp 1, Moscow, 1970, pp 14-17 (from RZh-Khimiya, No 13, 10 Jul 72, Abstract No 13N454 by T. A. Belyayeva)

Translation: The article shows physical and chemical properties of $(MeO)_2(4\text{-}NO_2\text{-}3\text{-}MeC_6H_3O)PS$ and $(MeO)_2(6\text{-}NO_2\text{-}3\text{-}MeC_6H_3O)PS$ and a method for the synthesis and analysis of methylnitrophos (I). I is used in the form of a 25% emulsion concentrate.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200230007-5

UDC 632.95:661.718.1

USSR

BAKANOVA, Z. M., MANDEL'BAUM, YA. A., SUPIN, G. S., MEL'NIKOV, N. N., and ABBAKUMOVA, N. V., All-Union Scientific Research Institute of Chemical Plant Protectants

"Properties of Methylnitrophos and Methods for Its Analysis"

Moscow, Khimiya v Sel'skom Khozyaystve, Vol 8, No 1, Jan 70, pp 32-35

Abstract: Chemically pure methylnitrophos consists of two isomers, viz. O,O-dimethyl-O-4-nitro-3-methylphenyl thiophosphate (70-75 percent) and O,O-dimethyl-O-6-nitro-3-methylphenyl thiophosphate (25-30 percent). Isomer I is the principal active ingredient of commercial methylnitrophos, isomer II the synergist for isomer I. Studies conducted in 1964-1968 showed that methylnitrophos matches the insecticidal properties of isomer I (Sumithion, Metathion). This is confirmed by data of the Ternopol' Agricultural Experiment Station on the effectiveness of Metathion and methylnitrophos against the beet leaf miner and beet leaf aphid, as well as by results obtained in experiments of the Georgian Subtropical Laboratory on the effectiveness of

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200230007-5

USSR

BAKANOVA, Z. M., et al., Khimiya v Sel'skom Khozyaystve, Vol 8, No 1, Jan 70, pp 32-35

these preparations against the citrus white fly. Both isomers of methylnitrophos, as well as free 3-methyl-4-nitro- and 3-methyl-6-nitrophenols were determined by the authors by the polarographic method. The article describes the analysis procedure.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200230007-5

1/2 015 UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--PROPERTIES AND METHODS FOR ANALYZING METHYLNITROPHOS -U-

AUTHOR-(05)-BAKANOVA, Z.M., MANDELBAUM, YA.A., MELNIKOV, N.N., SUPIN, G.S., ABBAKUMOVA, N.V.
COUNTRY OF INFO--USSR

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SOURCE--KHIM. SEL. KHOZ. 1970, 8(1), 32-5

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ISOMER, ORGANIC PHOSPHOROUS INSECTICIDE, ORGANIC NITRO COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1990/1159 STEP NO--UR/0394/70/008/001/0032/0035

CIRC ACCESSION NO--AP0109276

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200230007-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200230007-5

2/2 015 UNCLASSIFIED PROCESSING DATE--09OCT70
CIRC ACCESSION NO--AP0109276
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PROPERTIES WERE GIVEN OF METHYLNITROPHOS, A MIXT. OF O,O,DIMETHYL,O,4,NITRO,3, METHYLPHENYLTHIOPHOSPHATE (I) (70-75PERCENT) AND O,O,DIMETHYL,O, 6,NITRO,3,METHYLPHENYLTHIOPHOSPHATE (II) (25-30PERCENT), AND ITS BIOL. ACTIVITY. ISOMER I IS THE ACTIVE SUBSTANCE, AND II ACTED SYNERGISTICALLY. FORMULAE ARE GIVEN PERMITTING CALCN. OF THE CONTENT OF PARTICULAR ISOMERS WITH AN ACCURACY OF SIMILAR TO 2.5PERCENT.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200230007-5

USSR

UDC: 621.373.444.681.333

CHETVERIKOV, V. N., BAKANOVICH, E. A., MEN'KOV, A. V., SOLOMONOV, L. A.,
Moscow Higher Technical School imeni N. E. Bauman

"A Device for Shaping Streams of Random Events"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 13, May 72, Author's Certificate No 335684, Division G, filed 1 Jun 70, published 11 Apr 72, pp 204-205

Translation: This Author's Certificate introduces a device for shaping a stream of random events. The device contains a controllable frequency pulse generator whose outputs are connected to a block of coincidence gates. The device also contains a coincidence gate number register whose outputs are connected to a pulse counter. The unit also includes a blocking circuit and a pulse generator. As a distinguishing feature of the patent, the installation is designed for producing streams of random events which are distributed in space and in time. The device contains a unit for setting the duration of a random test, a coincidence gate number encoder whose inputs are connected to the outputs of the block of coincidence gates, while the outputs of the encoder are connected to the coincidence gate number register.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200230007-5

USSR

CHETVERIKOV, V. N., et al., USSR Author's Certificate No 335684

The outputs of this number register are connected in addition to the corresponding inputs of the blocking circuit whose output is connected to the first potential input of the block of coincidence gates. The second potential input of this block is connected to the output of the unit for setting the random test duration. The output of the pulse generator is connected to the pulse counter, and the output of the pulse counter is connected in turn to the output of the device, and to the corresponding input of the coincidence gate number register.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200230007-5

USSR UDC 681.332.65

CHETVERIKOV, V. N., BAKANOVICH, E. A., MEN'KOV, A. V., and SOLOMONOV, L. A.

"A Device for Shaping Random Time Intervals"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 25, Sep 71, p 188. (G 06f 1/02, No 312253 (1416921/18-24 from 18 March 1970; Claimant: Moscow Higher Technical School imeni N. E. Bauman)

Abstract: This patent claims a device for the shaping of random time intervals, containing a cyclical shift register, to the outputs of each digit of which are connected potential inputs from the coincidence circuits; the outputs of these coincidence circuits are connected with the output of the device through the first "OR" circuit; the output of the device is connected to the inputs of the device's "0" and "1" through the second "OR" circuit of the cyclical register, distinguished by the fact that for the purpose of simplifying adjustment of the circuit a random impulse generator with a known law of distribution for the time intervals is connected to the circuit for controlling the advance of the cyclical shift register, and periodic impulse generators with a regular frequency are connected to the inputs of the coincidence circuits.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200230007-5

USSR

UDC: 681.3-523.8

SOLOMONOV, L. A., P'YAVCHENKO, A. N., ZHIRKOV, V. F., BAKANOVICH, E. A., Moscow Higher Technical Academy imeni N. E. Bauman

"A Device for Shaping Random Time Intervals"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 26, 1970, Soviet Patent No 279167, Class 42, filed 4 Mar 69, p 132

Abstract: This Author's Certificate introduces a device for shaping random time intervals. The unit contains a noise voltage generator, a level quantizer, commutator, cyclic shift register, cadence generator, and AND and OR circuits. As a distinguishing feature of the patent, setting up the required law of time interval distribution is simplified by connecting the commutator outputs to some inputs of the AND circuits, connecting the outputs of the cyclic register to the other inputs of the AND circuits, and connecting the outputs of the AND circuits to the inputs of the OR circuit. The output of the OR circuit is connected to the input of the dump circuit for the cyclic register.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200230007-5

USSR

UDC 533.9.07

YEL'YASHEVICH, M. A., Academician of the Belorussian SSR Academy of Sciences, LABUDA, A. A., MEL'KO, L. YA., [illegible]EVICH, I. G., NOVIK, G. M., BAKANOVICH, G. I., Belorussian State University imeni V. I. Lenin, Physics Institute of the Belorussian SSR Academy of Sciences

"Generation of High-Speed Plasma Fluxes by a Pulse Accelerator on the Basis of the Phenomenon of Electric Detonation of Conductors and Dielectric Erosion"

Minsk, Doklady Akademii Nauk BSSR, Vol XVI, No 2, 1972, pp 115-117

Abstract: A study was made of a pulse generator of a moving plasma created by electric detonation of conductors of defined form in a bounded volume. The described plasma generator can operate in two versions -- on the basis of electric detonation of conductors as a source of a metal plasma or using pulse surface discharge where the plasma is formed as a result of erosion of the walls of the discharge chamber and the electrodes. The described pulse plasma generator permits the creation of incompletely expanded supersonic erosion plasma jets at atmospheric pressure with given gas dynamic characteristics determined by the discharge conditions and parameters.

Utilization of the phenomenon of electric detonation of conductors of a defined form under conditions of operating the plasma generator with an

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YE[illegible], N. A., et al., Doklady Akademii Nauk BSSR, Vol XVI, No 2, 1972, pp 115-117

[illegible] into the discharge chamber permitted flows of a low-temperature [illegible] of any given chemical composition to be obtained with relatively high [illegible] of utilization of the stored initial energy. The energy [illegible] for V = 4 kilovolts and C = 200 microfarads (mode 1) [illegible] oscillograms as 1.3 kilojoules with [illegible] 3.6 kilojoules. This essentially exceeds the energy [illegible] the [illegible] the generator with an external auxiliary [illegible] (0.3 [illegible] of the discharge conditions and the geometry of [illegible], consequently, the determined conductor permitted [illegible] erosion plasma jets to be obtained at atmospheric pressure [illegible] w = 25 kJ/cc for a contributed energy of [illegible]. [illegible] of intense continuous and linear spectra is [illegible] of the ablation of the erosion plasma (V = 5 kilovolts, [illegible] F) without electric detonation of the [illegible] chamber. Spectroscopic measurement of the plasma temperature and concentration (T_e = 6,000° K, $n_e = 5 \cdot 10^{14}$ cm^{-3})

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YEL'YASHEVICH, M. A., et al., Doklady Akademii Nauk BSSR, Vol XVI, No 2, 1972, pp 115-117

indicates the formation of a relatively dense low-temperature plasma. When the [illegible] is operated with electric discharge of the conductors under the [illegible] conditions, the plasma concentration increases appreciably.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200230007-5

BAKANURSKIY, G. — Phil. Science

ZIONISM AND THE SOCIAL DOCTRINE OF JUDAISM

[Excerpts from article by G. [illegible] candidate of philosophical sciences [illegible]: "Zionism and the Social Doctrine of Judaism"; Moscow, Nauka i [illegible], Russian, January 1972, pp 58-63]

Antisemitism and anti-[illegible] composing the basic content of the [illegible] and practice of Zion[ism] has been nakedly expressed in the [illegible] of the "Jewish Defense League." Literally, it links together [illegible] with the [illegible] of the struggle with anti-Semitism. The "League" is, in fact, a Fascist type of organization whose anti-Soviet provocations go hand in hand with its bandit attacks upon Communist Party institutions, its persecution of the members of the Black, progressive [illegible] the "Black Panthers," and its support of American agression in Indochina. [illegible] together with Joseph [illegible], a specialist on the Near East from [illegible] University (Alabama), not long ago published a book The Jewish [illegible] in which the American imperialist [illegible] is supported unreservedly. Kahane does not deny that the actions of the League are designed to worsen Soviet-American relationships and that the current provocations against our citizens and institutions abroad are only a part of a [illegible] plan in pursuit of the goal of undermining these relationships. It was only for this reason that Kahane and his assistant had need of the "Jewish Question" in the USSR thought up by Zionists and anti-Sovietists, although it is mainly in the United States that the Jew is in real need of a defense, here the field of activity for the "League" is more than sufficient.

Anti-Zionist positions are also taken by some Jewish youth organizations [illegible] such as the so-called "New Left." Such youth groups in America as the "Matspen" and the "Shol [illegible] hadash" [transliteration] and others, consider Jewish Palestine as the forepost of imperialism and counter-revolution and even come out for the destruction of the State of Israel. It should be noted that although this extreme opposition to Zionism is not widespread among American Jewry it should be considered as very symptomatic.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200230007-5

USSR UDC 615.815.064.2:612.115.2:616-001.8

BAKANS'KA, V. V., Grodno Medical Institute

"The Effect of Ascorbic Acid on Coagulation and Anticoagulation Blood System of Dogs subjected to Severe Hypoxia"

Kiev, Fiziolohichnyy Zhurnal, Vol 19, No 1, 1973, pp 105-106

Abstract: Ascorbic acid administered in the amount of 20 mg/kg to dogs for 10 days prior to subjecting them to 6000 meter simulated altitude in a barochamber for 3 hr protects the lung vessels from blood penetration. This was studied by injecting animals with I^{131} and watched its penetration of the blood vessels. However, ascorbic acid did not influence blood vessel penetration (total or regional) in control animals. It can be assumed that ascorbic acid influenced positively the blood coagulation in dogs under conditions of hypoxia by protecting the blood vessel penetration in lungs and by stimulating the appearance of procoagulants and kinases, which in turn stimulate fibrinolysis.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200230007-5

USSR

UDC 669.243

STARTSEV, V. N., BAKARDZHIYEVA, T. P., STEPANOVA, L. N.

"Ion-exchange Technology for Extraction of Nickel from Cadmium Production Solutions"

Moscow, Tsvetnye Metally, No 11, Nov 72, pp 14-16.

Abstract: This work presents the results of development of an ion-exchange technology for extraction of nickel from the cadmium electrolyte using new ion exchange materials -- ANKB-1 and ANKB-7 ampholytes. ANKB-1 is based on AN-31 anionite; ANKB-7 is based on AV-16 anionite. The technology is based on the significant difference in the affinity for ampholytes of nickel on the one hand and cadmium and zinc on the other. The technology assumes elua-tion of the nickel with a sulfuric acid solution, followed by removal of the H_2SO_4 to correct the pH of the solution. Laboratory-scale tests of the new technology indicated that either of the two ampholytes yields practically identical results.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200230007-5

Composite Materials

USSR UDC 620.18

RYBAL'CHENKO, M. K. (deceased), USTINOV, L. M., and BAKARINOVA, V. I.

"Physico-Chemical Reactions at Interfaces in Metal-Base Fibrous Composites

Moscow, Fizika i Khimiya Obrabotki Materialov, No 2, Mar/Apr 73, pp 120-127

Abstract: The mechanical, physical, and chemical bonds between fibers and matrices are reviewed. Chemical bonds are the most prevalent among metal-base fibrous composites, and most of them are of an atomic nature. Physical bonds are characterized by gravitational and magnetic interactions between individual components of composite materials. Strong chemical bonds are formed by atomic bonds between fibers and matrices across the interface, excluding in many cases the interface diffusion. Three types of chemical reactions play a decisive role in the formation of chemical bonds in composite materials of practical importance. A mutual diffusion of elements present in matrix and fibers is the best known type of chemical reactions which leads to the formation of intermediate phase layers (intermetallides, carbides, and others). Compatibility between fibers and matrix is the first requirement for producing high-quality composite materials. The chemical compatibility includes thermodynamic and kinetic compatibility. Thermodynamic compatibility is found very rarely. However, if kinetic compatibility is present, the problem of chemical compatibility

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200230007-5

USSR

RYBAL'CHENKO, M. K. (deceased), et al., Fizika i Khimiya Obrabotki Materialov, No 2, Mar/Apr 73, pp 120-127

can be considered to be solved. Thermodynamic compatibility exists among very few materials, such as Cu/W, Cu/Mo, Ag/W, while the majority of materials are thermodynamically incompatible. Chemical compatibility can be achieved by developing new alloys compatible with a given hardening agent, finding new hardening agents that would be thermodynamically stable with respect to a given matrix, producing coatings on hardening agent for securing its compatibility with the matrix, and developing natural coatings by the in situ method. The most reliable of these ways are the first two.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200230007-5

1/2 022 UNCLASSIFIED PROCESSING DATE--11SEP70

TITLE--CHEMICAL STABILITY OF HAFNIUM DIBORIDE -U-

AUTHOR--TIMOFEYEVA, N.I., SAVITSKIY, YE.M., BAKARINOVA, V.I.

B

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 6(1), 120-1

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL STABILITY, HAFNIUM COMPOUND, BORIDE, OXIDATION, THERMAL STABILITY, ACTIVATION ENERGY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/0595 STEP NO--UR/0363/70/006/001/0120/0121

CIRC ACCESSION NO--AP0105578

UNCLASSIFIED

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200230007-5

2/2 022 UNCLASSIFIED PROCESSING DATE--11SEP70
CIRC ACCESSION NO--AP0105578
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE STABILITY OF HFB SUB2 IN CERTAIN CHEM. REAGENTS AT ROOM AND HIGH TEMPS., AS WELL AS ITS STABILITY TO OXIDN. IN AIR AT 700-1000DEGREES WAS STUDIED. THE COMPN. OF THE HFB SUB2 POWDER (IN WT. PERCENT) WAS: HF 89.2, B 11.3, AND C 0.1, PARTICLE SIZE IS LESS THAN 20 MU, FREE B CONTENT 0.065 WT. PERCENT. AT ROOM TEMP. AFTER 24 HR, HFB SUB2 DISSOLVES PARTIALLY IN CONCD. HCL, H SUB2 SO SUB4, AND HCLO SUB4; IT IS EVEN LESS STABLE IN HNO SUB3. UPON BOILING IN CONCD. HNO SUB3 AND AQUA REGIA, HFB SUB2 POWDER DISSOLVES COMPLETELY IN 30 MIN; IN HCLO SUB4, HF, AND 1:1 HNO SUB3, IT DISOOLVES COMPLETELY AFTER 1 HR. IT DISSOLVES PARTIALLY IN NH SUB4 F, HCL, AND MIXTS. OF HCL WITH H SUB2 O SUB2; IT IS STABLE TO HOAC AND SOLNS. OF H SUB2 O SUB2 AND NH SUB3 BOTH AT ROOM TEMP. AND UPON HEATING. HFB SUB2 IS VERY STABLE IN H SUB2 O AT ROOM TEMP. AND IN BOILING H SUB2 O. IN AIR, HFB SUB2 STARTS TO OXIDIZE AT 700DEGREES; THE DENSE OXIDE FILM FORMED IS HFO SUB2. THE OXIDN. OF HFB SUB2 IN O ATM. WAS ALSO INVESTIGATED AT 20-1100DEGREES. THE ACTIVATION ENERGIES WERE DETD. THE OXIDN. RATE FOR HFB SUB2 IN O UP TO 1100DEGREES FOLLOWS A PARABOLIC LAW.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200230007-5

1/2 015 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--AQUEOUS SYSTEMS OF SODIUM L GLUTAMATE, IRON II CHLORIDE, AND MANGANESE CHLORIDE -U-

AUTHOR-(04)-UMETALIYEVA, S.K., BAKASOVA, Z.B., POTEMKO, L.I., DRUZHININ, I.G.

COUNTRY OF INFO--USSR

SOURCE--ZH. NEORG. KHIM. 1970, 15(3), 801-5

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--REFRACTIVE INDEX, ORGANOSODIUM COMPOUND, IRON COMPOUND, MANGANESE COMPOUND, CHLORIDE, SOLUBILITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3007/1147 STEP NO--UR/0078/70/015/003/0801/0805

CIRC ACCESSION NO--AP0136567

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200230007-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200230007-5

2/2 015 UNCLASSIFIED PROCESSING DATE--27NOV70
CIRC ACCESSION NO--AP0136567
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. REACTION OF NA L GLUTAMATE (I) WITH FECL SUB2 AND MNCL SUB2 GIVES FE AND MN L GLUTAMATES (II AND III, RESP.). II AND III ARE INCONGRUENTLY SOL. IN WATER, THEIR SOLY. IS HIGHER THAN THAT OF THE PARENT ACID. REFRACTIVE INDEXES, N SUBALPHA AND N SUBALPHA, OF II ARE 1.99 AND 1.960 AND OF III ARE 1.980 AND 1.953, RESP. SOLY. ISOTHERMS OF I-FECL SUB2-H SUB2 O AND I-MNCL SUB2-H SUB2 O AT 25DEGREES ARE CONSTRUCTED. COMPNS. OF EQUIL. SOLNS. OF THE SYSTEMS ARE TABULATED.

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USSR

UDC 621.385.032.26

BAKAUSHIN, A.N.

"Focusing Of Electron Beam By Periodic Magnetic Field With Temperature Variation Of Induction"

Elektron. tekhnika. Nauchno-tekhn. sb. Elektron SVCh (Electronic Technology. Scientific-Technical Collection. Microwave Electronics), 1970, No 7, pp 16-24 (from RZh--Elektronika i yeye primeneniye, No 11, November 1970, Abstract No 11A15)

Translation: The paper investigates one of the causes of the temperature instability of traveling-wave tubes with a magnetic periodic focusing system -- the temperature variations of the magnetic field induction. The variations are determined of the electron paths in the region of the periodic field, caused by the temperature variations of the induction. In order to determine the electron paths, generalized equations of the paths were used which contain the minimum number of parameters characterizing the electron beam and the periodic magnetic field. The bounderies are found of the areas of stable focusing of the beam with the temperature variations of the magnetic field induction taken into account. Summary.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200230007-5

USSR

UDC 533.916

BAKAY, A. S.; YERMAKOV, A. I., NAZAROV, N. I.

"Study of Low-Frequency Oscillations on the Basis of Amplitude Modulation of Ultrahigh-Frequency Radiation From a Plasma"

Fiz. plazmy i probl. upravl. termovader. sinteza. Resp. mezhved. sb. (Plasma Physics and Problems of the Controlled Thermonuclear Fusion. Republic Interdepartmental Collection), 1972, No. 3, pp 40-47 (from RZh-Fizika, No 11, Nov 72, Abstract No 11G191)

Translation: It is shown that radiation from a plasma at the frequency ω_{ep} (where ω_{ep} is the electron plasma frequency), that appears upon the injection of an electron beam into a plasma in which a fast magnetosonic wave is excited, appears as a consequence of the nonlinear interaction of Langmuir and fast magnetosonic waves. Oscillations in plasma density lead not only to transformation of Langmuir waves into transverse waves but also to amplitude modulation of these waves. A study of amplitude modulation of ultrahigh-frequency radiation from the plasma at a frequency on the order of ω_{ep} makes it possible to determine the spectrum of low-frequency oscillations of the plasma (their frequency is considerably less than the electron

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BAKAY, A. S., et al, Fiz. plazmy i probl. upravl. termoyader. sinteza. Resp. mezhved. sb., 1972, No. 3, pp 40-47

plasma frequency). In addition, one can evaluate the amplitude of low-frequency oscillations in the system on the basis of the depth of the amplitude modulation of the ultrahigh-frequency radiation.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200230007-5

USSR UDC: 533.951.07

[redacted], A. S., [redacted], Ye. A., [redacted], I. M.

"On the Use of External Modulation to Control the Emission Spectrum in a Beam-and-Plasma System"

Moscow, Radiotekhnika i Elektronika, Vol 26, No 9, Sep 71, pp 1[illegible]-1[illegible]

Abstract: A mechanism for controlling the emission spectrum of a beam--plasma interaction system by using a high-frequency external modulating signal is theoretically and experimentally studied. This mechanism owes its existence to the nonlinearity of the wave increment in the system. It is found that the effective attenuation of waves is changed and the spectrum of high-frequency oscillations is narrowed by nonlinear interaction between the beam-excited waves. The authors thank Ye. E. Fayngerg for discussing the results of the work.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200230007-5

USSR UDC 533.95

BAKAY, A. S., YERMAKOV, A. I., and NAZAROV, N. I., Physicotechnical Institute, Academy of Sciences Ukrainian SSR, Khar'kov

"Study of Low-Frequency Plasma Oscillations by Amplitude Modulation of Microwave Radiation"

Kiev, Ukrainskiy Fizicheskiy Zhurnal, Vol 16, No 1, Jan 71, pp 12-18

Abstract: If, along with electronic Langmuir waves excited by the beam in a plasma-beam system waves propagate in the plasma whose frequencies are much less than the electronic plasma frequency, the Langmuir waves may be transformed into transverse waves with frequencies close to the electronic plasma frequency. The effective transformation of the Langmuir into transverse waves will take place on low-frequency waves which strongly disturb the plasma density. The plasma density fluctuations result not only in the transformation of the Langmuir into transverse waves but also in amplitude modulation of these waves. The Langmuir wave amplitudes and, together with them, the amplitude of the UHF emis- 1/2

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200230007-5

USSR

BAKAY, A. S., et al., Ukrainskiy Fizicheskiy Zhurnal, Vol 16, No 1, Jan 71, pp 12-18

sion from the plasma prove to be modulated low-frequency oscillations, so that a study of the amplitude modulation of the UHF emission from the plasma at close-to-electron-plasma frequencies makes it possible to judge the low-frequency oscillation spectrum of the plasma. An experimental study of wave transformation and interaction in a plasma-beam system was carried out on a device consisting of a solenoid, discharge tube, exciting coil, diamagnetic probe, microwave circuit, magnetic probe, x-radiation detector, Faraday cylinder, electrostatic analyzer, and electron gun. A comparison of the depths of amplitude modulation of the UHF emission on the frequency of a fast magneto-sound wave whose amplitude is known and on the frequency of ion-sound oscillations makes it possible to valuate the amplitude of the latter.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200230007-5

USSR

BAKAY, A. S., KORNILOV, Ye. A., KRIVORUCHKO, S. M.

"Excitation of Ionic-Acoustic Waves by Langmuir Waves and Stationary Modes in a Beam Plasma System"

Moscow, Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki (Letters to the Journal of Experimental and Theoretical Physics), Vol 12, No 2, 20 July 1970, p 69-72

Abstract: Two problems are studied experimentally: 1) the threshold excitation and amplitude of ionic-acoustic waves by Langmuir waves in a beam plasma and 2) near-threshold stationary modes of interacting waves, which show the possibility of plasma heating. Electron and ion oscillations interact strongly producing many nonlinearities. Excited by strong Langmuir waves, a weak ionic-acoustic wave grows exponentially to exceed a critical threshold. In time, a constant frequency and amplitude state is reached. Electron-ion interaction increases the electron and ion temperatures and affects the excitation of the plasma. Plasma density was $\sim 10^{11} cm^{-3}$; current $\sim$ 100 ma, energy 5 kev, and longitudinal magnetic field strength 1 kgauss. A high frequency external signal close to the plasma frequency was used to excite the ionic-acoustic waves. Increasing the amplitude of the external signal diffuses the plasma to the

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USSR

BAKAY, A. S., et al, Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 12, No 2, 20 July 1970, p 69-72

container walls and produces variations in plasma density and temperature. Results indicate that ionic-acoustic waves are excited at some threshold level by Langmuir waves, and the strength of these waves is proportional to the external signal strength. Beyond the threshold the strength of the Langmuir waves grows at the rate $P^{1/2}$. Amplitudes are limited by the excitation of relaxational oscillations. The authors thank Ya. B. Fainberg and V. P. Silin for discussions and L. I. Bolotin for assistance. Orig. art. has 3 figs. and 1 ref.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200230007-5

1/2 036 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--INTERACTION OF HIGH FREQUENCY AND LOW FREQUENCY WAVES IN A PLASMA -U-

AUTHOR--BAKAI, A.S.

B

COUNTRY OF INFO--USSR

SOURCE--NUCLEAR FUSION, VOL. 10, MAR. 1970, P. 53-67

DATE PUBLISHED----MAR70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--PLASMA WAVE, WAVE EQUATION, APPROXIMATE SOLUTION, PLASMA INTERACTION, HIGH FREQUENCY, LOW FREQUENCY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1985/1837 STEP NO--AU/0000/70/010/000/0053/0067

CIRC ACCESSION NO--AP0101884

UNCLASSIFIED

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200230007-5

2/2 036 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0101884

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE INTERACTION IN A PLASMA BETWEEN HIGH FREQUENCY AND LOW FREQUENCY WAVES WITH GIVEN PHASES IS CONSIDERED IN A THREE WAVE APPROXIMATION. THE NUMBER OF INTERACTING WAVES IS ARBITRARY. LINEAR DAMPING OF THE WAVES IS TAKEN INTO ACCOUNT. APPROXIMATE SOLUTIONS ARE FOUND OF THE EQUATIONS FOR THE AMPLITUDES. A CRITERION IS ESTABLISHED FOR THE DECAY INSTABILITY OF A STRONG HIGH FREQUENCY WAVE. THE AUTHOR FINDS THE EQUILIBRIUM DISTRIBUTION OF ENERGY AMONG THE WAVES AND THE CRITERION FOR ITS ESTABLISHMENT. THE RESULTS ARE ILLUSTRATED BY EXAMPLES OF THE INTERACTION BETWEEN TRANSVERSE ELECTROMAGNETIC AND LANGMUIR WAVES IN A HOMOGENEOUS EQUILIBRIUM PLASMA AND OF THE INTERACTION OF SPACE CHARGE WAVES WITH ION ACOUSTIC WAVES IN A CONDUCTING CYLINDER SITUATED IN A LONGITUDINAL MAGNETIC FIELD. COMPARISONS ARE MADE WITH EXPERIMENT. FACILITY: AKADEMIIA NAUK UKRAINSKOI SSR, FIZIKO TEKHNICHESKII INSTITUT, KHARKOV, UKRAINAN SSR.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200230007-5

1/2 039 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--PARAMETRIC EXCITATION OF SOUND BY A UNIFORM MAGNETIC FIELD IN FERROMAGNETIC SAMPLES -U-

AUTHOR-(02)-BAKAY, A.S., BARYAKHTAR, V.G.

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL EKSPERIMENTAL'NOY I TEORETICHESKOY FIZIKI, 1970, VOL 58, NR 4, PP 1342-1347

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--FERROMAGNETIC MATERIAL, PARAMETRIC OSCILLATOR, ALTERNATING MAGNETIC FIELD, HIGH FREQUENCY, EXCITATION SPECTRUM, ACOUSTIC VIBRATION, MAGNETIC FIELD EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/1569 STEP NO--UR/0056/70/058/004/1342/1347

CIRC ACCESSION NO--AP0106315

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200230007-5

2/2 039 UNCLASSIFIED PROCESSING DATE--30OCT70
CIRC ACCESSION NO--AP0106315
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PARAMETRIC EXCITATION OF SOUND BY A HIGH FREQUENCY UNIFORM FIELD IN A FERROMAGNET IS INVESTIGATED. THE SOUND PARAMETRIC EXCITATION THRESHOLD, STATIONARY CONDITIONS BEHIND THE THRESHOLD AND THEIR TRANSIENT PERIOD ARE FOUND. THE DEPENDENCE OF THE MAGNETIC MOMENT OSCILLATION FREQUENCIES ON AMPLITUDE ARE TAKEN INTO ACCOUNT. A COMPARISON WITH THE EXPERIMENTAL DATA IS MADE.
FACILITY: FIZIKO TEKHNICHESKIY INST. AN UKR. SSR.

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200230007-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200230007-5

USSR

BAKAYEV, A. A., PETUKHOV, V. S., KHAYRNASOV, M.

"Automated System for Operational Calculations (ASOR) Involved in the Processing of Export Cargo in a Port"

Upravlyayushchiye Sistemy i Mashiny [Control Systems and Machines], 1972, No 1, pp 50-54 (Translated from Referativnyy Zhurnal Kibernetika, No 6, 1973, Abstract No 6V677, by the authors).

Translation: The basic principles of formation and processing of information for the main files of an automated system are presented, using the data from primary messages concerning movement of export cargoes in a port.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200230007-5

USSR

UDC 681.326.35.01

BAKAYEV, A. I.

"Multifunctional Generators for Digital Control and Computer Systems"

Elektron. Tekhnika. Nauch.-Tekhn. Sb. Tekhnol. i Organiz. Proiz-va (Electronic Technology. Scientific-Technical Collection. Technology and Organization of Production), No 1(41), 1971, pp 147-153 (from Referativnyy Zhurnal -- Avtomatika, Telemekhanika, i Vychislitel'naya Tekhnika, No 8, 1971, Abstract No 8B178)

Translation: The article describes a procedure for constructing and investigating various ways of using multifunctional generators for digital control and computer systems. Some basic electrical characteristics of multifunctional generators are cited. 7 illustrations, 3 titles in bibliography.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200230007-5

USSR UDC 541.183

DUBININ, M. M., BAKAYEV, V. A., and KADLETS, O., Institute of Physical Chemistry, Academy of Sciences USSR, Moscow and Institute of Physical Chemistry, Academy of Sciences, Czechoslovakia, Prague

"Behavior of the Adsorption Equation in the Theory of Micropore Filling"

Moscow, Doklady Akademii Nauk SSSR, Vol 205, No 3, 1972, pp 628-631

Abstract: Several investigators have observed experimentally that the adsorption by micropores, plotted as a function of the equilibrium pressure, has an inflection point. The second differential of the general equation, after appropriate substitutions, is set equal to zero and has the form $(nRT/E^n)A_o^n - A_o - RT(n - 1) = 0$, where A_o is the differential molar heat of adsorption at a particular partial pressure p; E is the characteristic energy of adsorption; R is the gas constant; T is the temperature; and n is the porosity constant. As can be derived from the equation, the inflection point occurs for n greater than 1 and disappears for n equal to 1. A table of data is given for the adsorption of neopentane, benzene, n-hexane and methane on various zeolites. At relatively high temperatures the isotherms become approximately linear.
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USSR

UDC 678.643'42'5:66.018.86.01:536

BAKAYEVA, V. P., YEGOROVA, Z. S., and KARPOV, V. L.

"Thermal Stability of E-41 Epoxy Resin after γ-Radiation"

Moscow, Plasticheskiye Massy, No 5, 1973, pp 20-24

Abstract: Some results are described from a study by the methods of mass spectrometry, derivatography and infrared spectrometry of the thermal stability of epoxy resins congealed by different congealants and subjected to gamma radiation in the dosage range of 50-1,000 Mrads.

The thermal stability of the uncongealed epoxy resin depends on the molecular weight, and the thermal stability of the congealed epoxy resin after irradiation and the radiation resistance depend on the type of congealant. The thermal destruction of the nonirradiated and irradiated congealed epoxy resins depends on the irradiation medium. The quantity and composition of the gases released during irradiation of the epoxy resins congealed by different congealants will depend on the irradiation temperature.

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USSR

B

UDC 513.7+517.9

BAKELMAN, I. Ya.

"Geometric Problems of Quasilinear Elliptic Equations"

Moscow, Uspekhi Matematicheskikh Nauk, Vol 25, No 2 (152), May-June 1970, pp 49-112

Abstract: The boundary value problems of geometry and the theory of quasilinear equations are being resolved broadly and deeply in great variety. The author of this article limits himself to two closely related aspects of this field: geometric methods of evaluating the solution of the Dirichlet problem for a quasilinear elliptic equation and construction of a nonparametric hypersurface with a given mean curvature in Riemann space. It is pointed out that for the case of zero mean curvature (minimum surfaces) these problems present significant difficulties, and the problems connected with constructing minimum surfaces are not specially investigated. The article constitutes a greatly expanded discussion of reports given by the author at the second and third All Union Symposia on Geometry in 1967 and 1969.

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USSR

BAKEL'MAN, I. YA., Uspekhi Matematicheskikh Nauk, Vol 25, No 5 (155), May-June 1970, pp 49-112

In the first chapter of the paper the geometric problem of constructing a hypersurface with a given mean curvature and given boundary is reduced to the Dirichlet problem. The quasilinear elliptic equation which is obtained has a series of specific peculiarities which generate nontrivial necessary conditions of resolvability of the investigated geometric problem. The sufficient conditions of resolvability of this problem are then discussed, and their role in obtaining the a priori evaluations of the solution and its normal derivative of the corresponding Dirichlet problem is discovered. The simple geometric facts as the basis of the indicated investigations have a general nature which offers the possibility of obtaining sufficient conditions for evaluating the solution and its normal derivative for a very broad class of quasilinear elliptic equations of the general type. These sufficient conditions contain as a special case the conditions which guarantee the construction of the hypersurface with given mean curvature and given boundary. The second chapter is devoted to evaluating the solution 2/4

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USSR

BAKEL'MAN, I. Ya., Sibirskiy matematicheskiy zhurn., Vol IV, No 3 (159), May-June 1963, pp 499-512

and its normal derivative for quasilinear equations of class H_1 by means of internal curvature (the method of convex surfaces). The third chapter discusses evaluations of the normal derivative of the solution of quasilinear elliptic equations of class H_1 (the plane of support method). The problems of the nature of the conditions on the properties of the boundary of a region without assuming its convexity and on the "coefficients" of the quasilinear equation which insure obtaining the evaluation of the normal derivative of the solution at the boundary of the region for any sufficiently smooth boundary condition $z|_{\partial\Omega} = h(x)$ are investigated. The author isolates the broad class H_1 of quasilinear elliptic equations which is characterized by the fact that the order of increase of the right-hand side $b(x, z, p)$ of the quasilinear equation, when $|p| \to \infty$, is no greater than for the function $|p|\partial p\, A(x, z, p)$, where $A(x, z, p)$ is a matrix of coefficients of the second derivatives. For equations of class H_1 the above-stated problems have positive solutions.

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BAKEL'MAN, I. Ya., Uspekhi Matematicheskikh Nauk, Vol 25, No 5 (155), May-June 1970, pp 49-112

The fourth chapter takes up determination of a hypersurface by its mean curvature. The discussion includes determination of a hypersurface with respect to its mean curvature in spaces of constant curvature, evaluating the height of a hypersurface as a function of the properties of its mean curvature and a metric tensor of Riemann space, evaluations of the first derivatives of functions giving hypersurfaces in Riemann space as a function of the properties of its mean curvature, the boundary of a hypersurface and a metric tensor of Riemann space, and the existence of a hypersurface with given mean curvature in Riemann space.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200230007-5

USSR B

BAKEL'MAN, I. Ya.; KALININ, R. P.

"Construction of a Hypersurface with a Given Average Curvature in a Lobachevski Space"

Moscow, Sibirskiy Matematicheskiy Zhurnal; May-June 1970, pp 483-491

Abstract: A semigeodesic system of coordinates $x_1, x_2, \ldots, x_n; z$, in which the surface $z = 0$ is the orisphere Q_0, is given in an $(n+1)$-dimensional Lobachevski space. Q_0 is a Euclidean n-dimensional plane with respect to its internal geometry, and $x_1, x_2, \ldots, x_n$ are a system of cartesian coordinates in Q_0. It is given that Ω is a bounded, convex region on Q_0. The principal concern of the article is the problem of being able to construct a hypersurface S with a given boundary orthogonally and unambiguously projected by geodesics perpendicular to Q_0 onto Ω such that at the points of the projection of S $(x_1, \ldots, x_n \in \Omega)$ the average curvature of S coincides with the function $H(x_1, \ldots, x_n)$, determined beforehand in Ω. The convex region of the class $C^{m,a}$, the normal curvatures of whose boundary at any point $\partial\Omega$ are not less

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USSR

BAKEL'MAN, I. Ya., et al., Sibirskiy Matematicheskiy Zhurnal; May-June 1970, pp 483-491

than the constant $k_0 > 0$ is given on the orisphere Q_0. It is given further that $H(x_1, \ldots, x_n) \in C^{m-2,a}$ and $H(x_1, \ldots, x_n) \leq 0$ and the function $h(x) \in C^{m,a}$ is located at $\partial\Omega$. k is set equal to $\sqrt{-1/K}$, where K is the curvature of the Lobachevski space. Then if the inequality $\frac{\psi_H^n}{h_1^n} < \frac{\varkappa_0^n}{V_n} A(N_H)$ is

satisfied -- where $\psi_H = \sup_{\Omega} (1 - kH(x_1, \ldots, x_n))$, $h_1 = \inf_{\partial\Omega} ke^{\frac{h(x_1, \ldots, x_n)}{k}}$, V_n is the volume of a unit n-dimensional Euclidean sphere, and

$$A(N_H) = \int_{-\infty}^{+\infty} \ldots \int_{-\infty}^{+\infty} \left[1 + \left(\sqrt{\sum_{k=1}^{n} u_k^2} + \sqrt{M_H}\right)^2\right] du_1 \ldots du_n.$$ (M_H is the lower twisting of the

previously given boundary of the required surface) -- then the problem formulated above has a unique solution in $C^2(\Omega)$ which is expressed by a function of the class $C^{m,a'}(\Omega + \partial\Omega)$ $(m \geq 3,\ 0 < a' \leq a \leq 1)$.

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USSR

BAKEL'MAN, I. Ya., et al., Sibirskiy Matematicheskiy Zhurnal; May-June 1970, pp 483-491

The authors note, in passing, an independent interest in the evaluation of the elevation and inclination of the tangent planes to the orisphere with respect to the properties of the average curvature and boundary of the required hypersurface.

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USSR

UDC 577.1:615.7/9

BAKENOVA, M. A.

"State of Thiamine and Riboflavin Metabolism in the Organism of Animals Under the Effect of Hydrogen Fluoride"

Tr. Alma-At. med. in-t (Works of the Alma-Ata Medical Institute), 1970, 25, pp 345-340 (from RZh-Biologicheskaya Khimiya, No 21, Nov 71, Abstract No 21F2177)

Abstract: Male rats weighing 80-100 grams were inoculated with hydrogen fluoride (concentrations of 0.1, 0.5, 1.09 or 3.16 mg/liter), and the concentration of thiamine (I) and riboflavin (II) in the urine and liver were determined at the end of the third month of the experiment. It was found that there is a reduction in the total concentration of thiamine for all concentrations of hydrogen fluoride, and a sharp reduction in the amount of bound and free thiamine at hydrogen fluoride concentrations of 0.5 mg/liter and higher. The quantity of free and mononucleotide riboflavin increased with a reduction in the amount of bound riboflavin. It is concluded that vitamin B_1 and B_2 metabolsim is 1/1 disrupted by the action of hydrogen fluoride.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200230007-5

USSR

UDC 621.375.82

BAKEYEV, A. A., VAS'KOVSKIY, Yu. M., VOROB'YEVA, N. N., ORLOV, V. K., and ROVINSKIY, R. Ye.

"The Role of a Plasma Torch in the Energy Balance of the Process of the Action of Laser Emission on Materials"

V sb. Kvant. elektronika (Quantum Electronics -- Collection of Works), No 2(14), Moscow, "Sov. Radio," 1973, pp 77-80 (English summary) (from RZh-Fizika, No 10, Oct 73, Abstract No 10D899 from authors' abstract)

Translation: The authors measured the energy reemitted by a plasma torch in a wide spectral interval (0.2-4 microns) during the action of laser emission on opaque obstructions. The power density of the incident beam was $\sim 10^6$ and $\sim 10^7$ w/sq cm with retention of the size of the spot on the target. The targets used were duralumin, ebonite, and graphite. It is shown that the energy reemitted by the plasma torch is from 20 to 50 percent of the energy of the laser beam, depending on the material and exposure conditions. The resultant experimental data are used as the basis for evaluating the role of other factors in the energy balance of the action of laser emission on materials. Bibliography with six titles.
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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200230007-5

1/2 024 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--ELE TRIC CONDUCTIVITY OF XENON PLASMA -U-

AUTHOR-(02)-BAKEYEV, A.A., ROVINSKIY, R.YE.

COUNTRY OF INFO--USSR

SOURCE--TEPLOFIZ. VYS. TEMP.; 8: 207-9, 1970

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--PLASMA CONDUCTIVITY, DISCHARGE PLASMA, XENON, PLASMA DENSITY, CURRENT DENSITY, PLASMA ELECTRON TEMPERATURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1988/1461 STEP NO--UR/0294/70/008/000/0207/0209

CIRC ACCESSION NO--AP0106217

UNCLASSIFIED

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200230007-5

2/2 024 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0106217

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ELECTRIC CONDUCTANCE OF XENON PLASMA WAS STUDIED AS A FUNCTION OF DENSITY OF THE DISCHARGE CURRENT. THE RELATIONSHIP BETWEEN THE ELECTRIC CONDUCTIVITY AND TEMPERATURE OF THE DISCHARGE IN A THERMAL EQUILIBRIUM PLASMA WAS ANALYZED. IT WAS ASSUMED THAT PLASMA CONDUCTIVITY IS CONSTANT ACROSS THE DISCHARGE TUBE. THE DISCHARGE TEMPERATURE WAS OBTAINED USING THE SAHA FORMULA BASED ON INTERFEROMETRIC MEASUREMENTS OF CHARGED AND NEUTRAL PARTICLE CONCENTRATIONS AND ON THE ABSOLUTE MEASUREMENTS OF PLASMA CONCENTRATION AND ABSORPTION. DATA OBTAIN SHOW THAT AT P IS GREATER THAN OR EQUAL TO 400 MM HG, THE ELECTRIC CONDUCTIVITY AS A FUNCTION OF CURRENT DENSITY IS DESCRIBED BY EMPIRIC FORMULA SIGMA EQUALS 0.885 J PRIMEONE HALF (WHERE SIGMA IS OHM PRIME NEGATIVE1 TIMES CM PRIME NEGATIVE1 AND J IS A-CM PRIME2). AT P EQUALS 100 MM HG, THE CONDUCTIVITY IS HIGHER BUT THE SIGMA FUNCTION OF J IS CONSERVED. THE DATA ON XENON PLASMA CONDUCTIVITY AS A FUNCTION OF THE DISCHARGE TEMPERATURE WAS INCONCLUSIVE.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200230007-5

1/2 038 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--ABSORPTION OF RADIATION IN A HIGH PRESSURE PULSED ARGON DISCHARGE -U-

AUTHOR-(03)-BAKEYEV, A.A., ROVINSKIY, R.YE., SHIROKOVA, I.P.

COUNTRY OF INFO--USSR

SOURCE--OPT. SPEKTROSK. 1970, 28(3), 594-5

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--ABSORPTION SPECTRUM, GAS DISCHARGE, ARGON, ELECTRIC DISCHARGE RADIATION, ABSORPTION COEFFICIENT, PULSE EXCITATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1134 STEP NO--UR/0051/70/028/003/0594/0595

CIRC ACCESSION NO--AP0124789

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200230007-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200230007-5

2/2 038 UNCLASSIFIED PROCESSING DATE--30OCT70
CIRC ACCESSION NO--AP0124789
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TEMP. AND WAVELENGTH DEPENDENCE WAS MEASURED OF THE CONTINUOUS ABSORPTION OF RADIATION IN THE PULSED AR DISCHARGE. THEORETICAL AND EXPT. VALUES OF THE WAVELENGTH DEPENDENCE OF THE ABSORPTION COEFF. AT 16,000DEGREESK AGREE WELL IN THE REGION FROM 6000 A TOWARDS LONGER WAVELENGTHS.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200230007-5

USSR

UDC 678.744.325.01:539.389

SKOROBOGATOVA, A. Ye., ARZHAKOV, S. A., BAKEYEV, N. F., and KABANOV, V. A., Moscow State University Imeni M. V. Lomonosov

"Forced Elastic Relaxation of Glass-Like Polymers and the Mechanism of Forced Elasticity"

Moscow, Doklady Akademii Nauk SSSR, Vol 211, No 1, Jul-Aug 73, pp 151-154

Abstract: The kinetics of the relaxation of polymethylmethacrylate samples, polymethylmethacrylate mixed with 20% dibutyl phtalate and other polymers subjected to preliminary monoaxial compression or stretching in the glass-like state was studied in an attempt to find the relationship between forced elasticity and supermolecular structure of the polymers. In general, the forced elastic deformation consists of two components: one of them is capable of relaxing at low temperature, the other -- at the temperature of glass formation. The input of these components depends on the temperature of deformation and on the degree of deformation at a fixed temperature. There were no differences found between these two samples tested. The experimental data, especially the relaxation ability after the deformation due to monoaxial compression, point out that the amorphous polymers have a quite perfectly ordered supermolecular structure.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200230007-5

1/2 024 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--STRUCTURE OF CELLULOSE ACETATE SOLUTIONS IN SOLVENT PRECIPITATING AGENT MIXTURES -U-

AUTHOR-(04)-VOLYNSKIY, A.L., ORLOVA, T.M., BAKEYEV, N.F., KARGIN, V.A.

COUNTRY OF INFO--USSR

SOURCE--VYSOKOMOL. SOEDIN., SER. B 1970, 12(3), 202-4

DATE PUBLISHED--------70

B

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--CELLULOSE RESIN, ACETATE, SEDIMENTATION, ELECTRON MICROSCOPY, POLYMER STRUCTURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/0678 STEP NO--UR/0460/70/012/003/0202/0204

CIRC ACCESSION NO--AP0124350

UNCLASSIFIED

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200230007-5

2/2 024 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0124350

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ELECTRON MICROSCOPY, DETN. OF SEDIMENTATION CONSTS., AND VISCOSITY OF CELLULOSE ACETATE SOLNS. IN DIOXANE CONTG. IS LESS THAN OR EQUAL TO 25PERCENT H SUB2 O OR LESS THAN OR EQUAL TO 15PERCENT DECALIN SHOWED THAT WHEN THE CONCN. OF THE PRECIPITANT APPROACHES THE POINT AT WHICH PHASE SEPN. TAKES PLACE, THE POLYMER MOLS. AGGREGATE, FORMING FIBRILLAR STRUCTURES. FACILITY: MOSK. GOS. UNIV. IM. LOMONOSOVA, MOSCOW, USSR.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200230007-5

USSR

UDC 621.385.017.72:536.58(088.8)

BAKEYEV, P.B., BOYKO, B.I., ITUNIN, L.L., SERBINOV, A.M., KROMOY, YU. D.

"Unit For Control Of The Temperature Of Electrovacuum Devices"

USSR Author's Certificate No 262527, filed 2 Dec 68, published 13 May 70 (from RZh--Elektronika i yeye primeneniye, No 12, December 1970, Abstract No 12A113P)

Translation: A unit is proposed for control of the temperature of electrovacuum devices, which contains a curved thermosensitive plate acting on the regulating organ for the flow rate of a coolant flowing in a spiral which encircles the body of the device. At the extremes of the coils of the spiral, two intermediate plates are attached at the outer extremity of which the thermosensitive plate is secured and at the inner, fixed screws for adjustment of the moment of turning on of the regulating organ. Such construction of the device assures production of a signal proportional to the average temperature of the body. B.B.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200230007-5

USSR

UDC 581.192.08

PEYVE, YA. V., YAGODIN, B. A., and BAKEYEVA, N. M.

"Preparative Electrophoresis of Proteins on Polyacrylamide Gel"

Moscow, Biofizicheskiye Metody v Fiziologii Racteniy, Nauka, 1971, pp 5-13

Translation of Russian Abstract: A method of preparative electrophoresis of proteins on polyacrylamide gel is described. The method makes it possible to separate proteins according to their molecular weight, structure, and magnitude of charge. The work was done with equipment made entirely of plexiglas. It was built according to the type B apparatus designed by D. Rakusen and N. Kal'vaniko. The equipment was modified as follows. A cooling jacket was mounted around the upper electrophoretic column; instead of the bolts affixing the column to the elution chamber, a slip mantle and a screw-on lower column were used. To reduce resistance, the lower gel was eliminated, and contact is established by filling the lower electrophoretic column with the electrode buffer solution. The method is demonstrated by using hemoglobin obtained from the tubers of bean plants: fodder beans, soy beans, and lupine. The formulas for the buffer solutions and the gel polymerization solutions were taken from the recommendations on the analytical disc electrophoresis of hemoglobin. The isolated protein fractions contain the various hemoglobin components in the unchanged state and in a sufficiently highly purified condition.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200230007-5

1/2 022 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--STABILIZATION OF ELECTRONS AND IONIC REACTIONS IN IRRADIATED KETONES -U-

AUTHOR-(04)-REVINA, A.A., BORISENKO, G.L., BAKH, N.A., KOSTIN, A.K.

B

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 191(4), 845-8 (CHEM)

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--GAMMA RADIATION, ALIPHATIC KETONE, EPR SPECTRUM, ALCOHOL, ELECTRON INTERACTION, ELECTRON RADIATION, ION INTERACTION, COBALT ISOTOPE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3006/1216 STEP NO--UR/0020/70/191/004/0845/0848

CIRC ACCESSION NO--AT0134890

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200230007-5"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200230007-5

2/2 022 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AT0134890

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EPR SPECTRA ARE REPORTED FOR ALIPHATIC KETONES WHICH HAD BEEN IRRADIATED (GAMMA PRIME60 CO) IN THE DARK AT 77DEGREESK. ALL PRODUCED A SHARP SINGLET LINE TYPICAL OF STABILIZED ELECTRONS IN POLAR MEDIA. THE TOTAL CONCN. OF THE RADICALS IN O SUB2 IS LOWER THAN IN VACUO; THE RELATIVE INTENSITY OF THE BROAD SIGNAL IS ALSO LOWER. EVIDENTLY THE ORIGINAL CATION RADICAL RESULTS FROM THE LOSS OF AN ELECTRON FROM THE O OF THE CO GROUP AND THESE ELECTRONS ARE CAPTURED BY THE MEDIUM. H TRANSFER TO THIS O ATOM RESULTS IN CATIONS SUCH AS RC PRIMEPOSITIVE MEOH OR CATION RADICALS SUCH AS RC PRIMEPOSITIVE (OH)CH SUB2., WHICH UNDERGO THE USUAL EXPECTED CHANGES. A PULSE TECHNIQUE WAS USED FOR ELECTRON IRRADN. AND OPTICAL SPECTRA OF TYPICAL IRRADIATED KETONES ARE SHOWN. ALL GAVE MAX. IN THE 330-40 NM REGION 50 MUSEC AFTER PULSING. THE YIELDS OF ALCS. AT 77-360DEGREESK ARE TABULATED FOR THE ME-PR, ME-BU, DI-ET, AND DI-BU KETONES. G VALUES ARE 0.3-0.8. FACILITY: INST. ELEKTROKHIM., MOSCOW, USSR.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200230007-5

1/3 024 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--DIFFUSION, SOLUBILITY, AND ELECTRICAL PROPERTIES OF ZINC IN SILICON -U-

AUTHOR-(04)-BAKHADYRKHANOV, M.K., BOLTAKS, B.I., KULIKOV, G.S., PEDYASH, E.M.

COUNTRY OF INFO--USSR

SOURCE--LENINGRAD, FIZIKA I TEKHNIKA POLUPROVODNIKOV, VOL 4, NO 5, 1970, PP 873-878

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--METAL DIFFUSION, SOLUBILITY, ZINC, SILICON, FORBIDDEN ZONE, SOLID SOLUTION, COBALT, ELECTRIC PROPERTY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3007/1261 STEP NO--UR/0449/70/004/005/0873/0878

CIRC ACCESSION NO--AP0136669

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002200230007-5

2/3 024 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0136669

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DIFFUSION AND SOLUBILITY OF ZINC IN SILICON AND ITS EFFECT ON THE ELECTRICAL PROPERTIES OF SILICON WERE STUDIED. IT WAS ESTABLISHED THAT THE DIFFUSION OF ZINC IN SILICON HAS COMPLEX DISSOCIATIVE NATURE, AND THE DIFFUSION COEFFICIENT IN THE 1,100-1,300DEGREESC RANGE VARIES FROM 10 PRIME NEGATIVE7 TO 10 PRIME NEGATIVE6 CM PRIME2-SEC. THE LIFE OF ZINC AT A NODE AND AN INTERNODE OF THE SILICON LATTICE CALCULATED FROM THE RISE IN CONCENTRATION LEVEL WITH ANNEALING TIME AT 1,200DEGREESC IS 10 PRIME4 AND 10 PRIME NEGATIVE3 SEC, RESPECTIVELY. THE SOLUBILITY IS OF A RETROGRADE NATURE WITH A PEAK AT 1.5.10 PRIME NEGATIVE6 CM PRIME NEGATIVE3 AT 1,270DEGREESC. ZINC INTRODUCES THREE ACCEPTOR LEVELS IN THE FORBIDDEN ZONE OF SILICON. DURING THE PROCESS OF DECAY OF THE ZINC SILICON SOLID SOLUTION, TWO DONOR LEVELS, 0.1 PLUS OR MINUS 0.03 AND 0.4 PLUS OR MINUS 0.03 EV, OBVIOUSLY CONNECTED WITH THE INTERNODAL ZINC APPEAR. THE AUTHORS CALCULATE THE CHEMICAL POTENTIAL LEVEL OF SILICON ALLOYED WITH ZINC AND DEMONSTRATE THE POSSIBILITY OF OBTAINING THE COMPENSATED MATERIAL IN A BROAD RANGE OF CURRENT CARRIER CONCENTRATIONS. THE CONDITIONS OF OBTAINING SILICON WITH A GIVEN SPECIFIC RESISTANCE ARE CALCULATED INASMUCH AS ZINC IN SILICON IS AN ACCEPTOR AND INASMUCH AS A COMPENSATED MATERIAL CAN BE OBTAINED BY INTRODUCING ZINC INTO ELECTRONIC SILICON. THE EXPERIMENTAL DATA FROM THE ELECTRICAL MEASUREMENTS (CARRIER CONCENTRATION, CARRIER MOBILITY, SPECIFIC RESISTANCE) BEFORE AND AFTER ALLOYING THE SILICON WITH ZINC AND ALSO FOR THE CONTROL SAMPLES ANNEALED WITHOUT ZINC ARE COMPARED WITH THE CALCULATED DATA.

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3/3 024 UNCLASSIFIED PROCESSING DATE--27NOV70

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ABSTRACT/EXTRACT--IT IS NOTED THAT THE CONCENTRATION OF ELECTRICALLY ACTIVE ZINC ATOMS IS SIMILAR TO 3 ORDERS LESS THAN THE SOLUBILITY DETERMINED FROM RADIOACTIVE MEASUREMENTS. A SIGNIFICANT PART OF THE ZINC ATOMS APPARENTLY SETTLE IN THE DISLOCATIONS THAT OCCUR, FOR EXAMPLE, FOR COBALT IN SILICON FOR THEY ENTER INTO THE COMPOSITION OF ELECTRICALLY INACTIVE COMPLEXES. THE EXPERIMENTAL DATA COMPARE WELL WITH THE CALCULATED DATA EXCEPT FOR CONVERGED SAMPLES, AND IT IS ASSUMED THAT THESE DIVERGENCES ARE THE RESULT OF INCORRECT CALCULATIONS. FACILITY: INSTITUTE OF SEMICONDICTORS, LENINGRAD, ACADEMY OF SCIENCES USSR.

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AUTHOR-(03)-BAKHADRYKHANOV, M.K., BOLTAKS, B.I., KULIKOV, G.S.

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