"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0

USSR

UDC: 541.126.2

ROMANOV, I. D., SMEN'GACH, V. V., Moscow

"Sensitivity of PETN to an Electric Spark"

Moscow, Zhurnal Prikladnoy Mekhaniki i Tekhnicheskoy Fiziki, No 6, Nov/Dec 72, pp 152-155

Abstract: The paper gives the results of an experimental study of the sensitivity of PETN to an electric spark. The research covers the effect of dispersity, density, temperature and moisture content of the explosive on its sensitivity to an electric spark. A study is also made of the part played by the interelectrode spacing and the inductance of the discharge loop with respect to the energy necessary for initiating an explosion.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0

USSR

UDC 532.529.5

BABUKHA, G. L., [redacted], and SHRAYBER, A. A.,
Institute of Technical Thermophysics of the Academy of Sciences of the Ukrainian Soviet Socialist Republic

"Experimental Investigation of the Interaction of Liquid Drops"

Kiev, Gidromekhanika, No 18, 1971, pp 76—79

Abstract : The experimental investigation of the stability of a motionless big drop, the "target", by its collisions with small drops, the "shells", of different size, flying out from a rotating capillary with different speeds, is described. The experiments were carried out within the range of $12 < Re < 900$, $10^{-3} < G < 0.5$, where G is the stability criterion $G = \frac{\eta^2}{\sigma \rho \langle \delta_1 \rangle}$ and η, ρ, and σ are the dynamic viscosity, density, and skin stress coefficient and $\langle \delta_1 \rangle$ = average size of the target-drop. From the processing of experimental data by the method of least

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0

USSR

BABUKHA, G. L., et al., Gidromekhanika, No 18, 1971, pp 76-79

squares, the relation of the dimensionless parameter f, characterizing the summary effect of collisions,

$$f = 0.674 - 0.019\ Re_G^{0.4}$$

was determined. The relation shows that by $Re_G^{0.4} < 35.5$, the average effect of collisions is negative, that is, a breaking of drops is predominant in this region. Two illustr., four formulas, three biblio. refs.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0

USSR

UDC 621.317.799:621.397.2

MARINETS, V. P., MEIKHISEDEKOV, L. S., and SMERDOV, A. A., Physicomechanical Institute, Academy of Sciences Ukrainian SSR

"Television Device for the Automatic Recognition of Straight L"nes and Faces"

USSR Authors' Certificate No 336673, Cl. G 06k 9/13, filed 23 Jun 72, published 21 Apr 72, related to USSR Authors' Certificate No 205895 (from Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 14, 21 Apr 72, p 167)

Abstract: To eliminate the effect of the absolute brightness of objects on recognition, the scanning disk is made of a series of identical apertures of arbitrary shape, the dimensions of which are equal to the picture element. The apertures are arranged on the disk with a constant displacement of several picture elements for each subsequent aperture from the preceding aperture. An amplitude limiter is included between the output of the photoelectric transducer and the input of the band filter.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0

1/2 030 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--INVESTIGATION OF RESONANCE EXCITATION OF HIGH AMPLITUDE WAVES IN A PLASMA -U-

AUTHOR-(03)-GRIGORYEVA, L.I., SHERDOV, B.I., CHECHKIN, V.V.

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL EKSPERIMENTAL'NOY I TEORETICHESKOY FIZIKI, 1970, VOL 58, NR 4, PP 1234-1242

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--PLASMA WAVE, MAGENTIC RESONANCE, ACOUSTIC WAVE, PLASMA OSCILLATION, HIGH FREQUENCY CURRENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/1720 STEP NO--UR/0056/70/058/004/1234/1242

CIRC ACCESSION NO--AP0106453

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0

2/2 030 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0106453

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EXCITATION OF HIGH AMPLITUDE WAVES IN A PLASMA CYLINDER IS INVESTIGATED EXPERIMENTALLY FOR FREQUENCIES OMEGA SUBHI SMALLER THAN OMEGA SMALLER THAN (OMEGA SUBHI OMEGA SUBHE) PRIMEONE HALF. THE WAVE IS EXCITED BY A HIGH FREQUENCY AZIMUTHAL, AXIALLY PERIODIC CURRENT FLOWING IN A COIL ENCIRCLING THE PLASMA. THE SPECTRUM OF MAGENTIC FIELD OSCILLATIONS, WHICH APPEAR IN THE PLASMA WHEN THE EXCITING CURRENT IS SWITCHED ON, IS OBTAINED. IT IS DEMONSTRATED EXPERIMENTALLY THAT IN THE REGION OF RESONANCE EXCITATION OF A FAST MAGNETO ACOUSTIC WAVE (WHISTLE) IN THE PLASMA, BESIDES THE PURELY FORCED OSCILLATIONS, TWO PROPER OSCILLATIONS (WHISTLE) ARE ALSO EXCITED, THE WAVELENGTH OF ONE OSCILLATION AND THE FREQUENCY OF THE OTHER DIFFERING RESPECTIVELY FROM THE AXIAL PERIOD AND THE FREQUENCY OF THE EXCITING CURRENT. EXCITATION OF PROPER OSCILLATIONS IS DUE TO THE FINITE WIDTH OF THE EXCITING CURRENT SPECTRA IN WAVE NUMBER SPACE AND FREQUENCY SPACE. IT IS ALSO FOUND THAT A WHISTLE WITH A FREQUENCY DIFFERING FROM THAT OF THE EXCITING CURRENT DECAYS INTO A WHISTLE AND A FAST SOUND (CYCLOTRON SOUND) WAVE. THE CONDITIONS FOR SUCH DECAY IN A BOUNDED PLASMA ARE DISCUSSED. FACILITY: FIZIKO-TEKHNICHESKIY INST., AN UKR. SSR.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0

Acc. Nr: AP0038026 S Ref. Code: UR 0056

PRIMARY SOURCE: Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, 1970, Vol 58, Nr 1, pp 45-50

INVESTIGATION OF PLASMA INSTABILITY IN A STRONG ALTERNATING ELECTRIC FIELD

Grigor'veva, L. I.; Smerdov, B. L.; Stepanov, K. N.; Chechkin, V. V.

The frequency spectrum is obtained for the previously discovered high frequency small-scale instability excited in a plasma by a high amplitude fast magnetosonic wave. The dependence of noise amplitude on field strength of the wave is investigated and it is shown that the dependence is of the threshold type.

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19731067

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0

Acc. Nr: AP0044178

Ref. Code: UR 0016

PRIMARY SOURCE: Zhurnal Mikrobiologii, Epidemiologii, i Immunobiologii, 1970, Nr 2, pp 120-123

FAMILIAL SCLEROMA ACCORDING TO MATERIALS OF TRANSCARPATIAN REGION

A. M. Chekotilo, A. V. Smerenskaya

The authors present the results of a complex examination of 71 members of 26 families in which scleroma patients were revealed. Fifteen persons proved to be suffering from atrophic-infiltrative and scar changes of the mucous membranes of the upper respiratory tracts. In 7 of the patients scleroma diagnosis was confirmed bacteriologically or serologically. Reactions of complement fixation and of indirect hemagglutination were used for the purpose of serological examination. The results of these two reactions coincided; the advantage of the latter method for examination of the foci was demonstrated.

The necessity of complex clinico-epidemiological examination of the population in the districts with recorded scleroma cases for detection in the foci of patients with unestablished diagnosis was demonstrated.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0

Functional Analysis

USSR

UDC: 681.2+082/083

SMERTINYUK, I. V., Novosibirsk

"Improvement of Evaluations of Useful Parameters in Problems Involving Processing Results of Measurement with Perturbing Parameters Present"

Novosibirsk, Avtometriya, No 4, 1970, pp 9-17

Abstract: Earlier works have studied methods for nonlinear evaluation of useful parameters $\varphi_1, \ldots, \varphi_s$ of signals $x_j(t)$ measured with additive Gaussian errors $\xi_j(t_i)$. The problem has been reduced to determination of the original functions $\hat{\phi}_i(T_1, \ldots, T_k)$ $(i = \overline{1,s})$ of the multiple, bilateral Laplace transform with respect to known mapping functions $\phi_i(\theta_1, \ldots, \theta_k)$ $(i = \overline{1,s})$. In practical applications however, the functional dependences between the values of θ_j frequently are also known. This obtains when larger numbers of signals are analyzed than required for an ambiguous determination of the function $\phi_i(\theta_1, \ldots, \theta_k)$, or when there are functional relationships directly between the parameters ϕ_i $(i = \overline{1,k})$. Assuming that the functions $\Pi_j(\theta_1, \ldots, \theta_k)$ are polynomials of θ_j $(j = \overline{1,k})$, leaving the same requirements on $\theta_j(\phi_1, \ldots, \phi_k)$ in the earlier

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0

USSR

SMERTINYUK, I. V., Avtometriya, No 4, 1970, pp 9-17

works, and providing for the existence of unambiguous and continuous functions $\phi_1(\theta_1, \ldots, \theta_k)$ having the necessary number of partial derivatives, the author s seeks evaluations only for parameter ϕ_1, since the remaining parameters are evaluated quite similarly.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0

USSR

UDC: 621.374.1

GOLOVINSKIY, L. V., SMERTYGA, B. I.

"A Frequency Divider Based on Ferrite Diode Cells"

V sb. Obmen opytom v radioprom-sti (Experience Pooling in the Radio Industry--collection of works), Vyp. 2, Moscow, 1970, pp 54-57 (from RZh-Radiotekhnika, No 7, Jul 70, Abstract No 7G310)

Translation: The paper discusses problems of constructing frequency dividers based on magnetic cores with rectangular hysteresis loop with broad output pulses. A block diagram and a schematic diagram of such a divider are given. Consideration is given to the effect of various circuit parameters on reducing the peak of the output pulses. Experimental relationships are given for this drop as a function of the incoming frequency. Bibliography of two titles. Resumé.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0

USSR

UDC 621.039.512.45

BASS, L. P., BRODER, D. L., ZHILKIN, A. S., KUTUZOV, A. A., SMETANIN, A. A., SUVOROV, A. P., SHESTOPALOV, Ye. V., SHIPILOV, A. Ye.

"Reactor Neutron Spectra in a Cylindrical Neutron Duct Surrounded by Water"

V sb. Vopr. fiz. zashchity reaktorov (Problems in Reactor Safety Physics -- Collection of Works), No. 5, Moscow, Atomizdat, 1972, pp 123-129 (from RZh-50. Yadernyye reaktory, No 5, May 72, Abstract No 5.50.61)

Translation: The energy and spatial distributions of neutrons with energies above 200 kev in an iron cylindrical neutron duct at distances up to 66 cm from its origin are discussed. The experimental data are compared with computational results made by two-dimensional programs using the P_1-approximation of the spherical harmonics method and the $2D10_{\times}5$-approximation of the characteristic method. The presence of experimental data on the neutron energy spectra makes possible a corrective check on the methods for calculating the parameters of shields of limited transverse dimensions. 7 ill., 8 ref.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0

USSR

ALEKSANDROV, V. M. and SMETANIN, B. I., Rostov-on-Don

UDC: None

"An Effective Method for Solving Nonclassical Mixed Problems in Elasticity Theory"

Moscow, Prikladnaya matematika i mekhanika, 1971, vol. 35, No. 1, pp 80-87

Abstract: This article discusses an integral equation of the first kind which is encountered in many plane and three-dimensional mixed problems in the theory of elasticity and in mathematical physics. The equation is

$$\int_{-1}^{+1} q(\xi)\, M\left(\frac{\xi - x}{\lambda}\right) d\xi = \pi f(x), \quad |x| \leq 1$$

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0

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ALEKSANDROV, V. M., etal, Prikladnaya matematika i mekhanika, 1971, vol 35, No 1, pp 80-87

where $\lambda \in (0,\infty)$ is a dimensionless parameter, and the equation kernel can be represented by the Fourier integral

$$M(y) = \int_0^\infty \frac{L(u)}{u} \cos uy \, du.$$

A method is proposed for solving the equation with small values of the characteristic parameter λ and with series of Laguerre polynomials. Several theorems are developed and proved.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0

1/2 022 UNCLASSIFIED PROCESSING DATE--11DEC70

TITLE--TWO APERTURES IN A BAND OF FINITE THICKNESS --U--

AUTHOR--SMETANIN, B.I.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, PRIKLADNAYA MATEMATIKA I MEKHANIKA, NO 2, 70, PP 366-369

DATE PUBLISHED--------70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR, MATHEMATICAL SCIENCES

TOPIC TAGS--STRESS ANALYSIS, ELASTICITY, TENSOR ANALYSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----FD70/605041/C05 STEP NO--UR/0040/70/000/002/0366/0369

CIRC ACCESSION NO--AP0142727

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0

2/2 022 UNCLASSIFIED

CIRC ACCESSION NO--AP0142727 PROCESSING DATE--11DEC70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TWO MIXED PLANE PROBLEMS OF THE THEORY OF ELASTICITY ARE INVESTIGATED: 1) THE TENSION OF AN ELASTIC INFINITE BAND WEAKENED BY TWO LONGITUDINAL APERTURES OF EQUAL LENGTH, AND 2) THE LONGITUDINAL SPLITTING OF AN ELASTIC INFINITE BAND BY A WEDGE OF FINITE LENGTH. AT THE ENDS OF THE WEDGE ARE APERTURES, THE APERTURES AND THE WEDGE ARE LOCATED SYMMETRICALLY TO THESIDES OF THE BAND. THE PROBLEMS ARE SOLVED USING A METHOD SIMILAR TO ONE DEVELOPED BY V. M. ALEKSANDROV AND I. I. VOROVICH (PMM, 1960, VOL 24, NO 2). FORMULAS ARE DERIVED WHICH DETERMINE THE SHAPE OF THE SURFACES OF THE APERTURES AND THE INTENSITY FACTOR OF NORMAL STRESSES. THE FORMULAS REPRESENT ASYMPTOTOTIC SERIES EXPANSIONS OF EXACT SOLUTIONS IN TERMS OF NEGATIVE POWERS OF THE PARAMETER LAMBDA WHICH CHARACTERIZES THE RELATIVE THICKNESS OF THE BAND. IT IS CONCLUDED THAT THE DEVELOPED FORMULAS ARE SUITABLE FOR USE IN CASES WHERE 2 IS LESS THAN OR EQUAL TO LAMBDA IS LESS THAN INFINITY.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0

UNCLASSIFIED

TITLE--BLAST FURNACE HEARTH COMBUSTION CONTOURS AND VARIATION IN THE INDIVIDUAL TUYERE PARAMETERS -U-

PROCESSING DATE--23OCT70

AUTHOR-(05)-VAKULENKO, V.KH., MOROZOV, V.M., SMETANIN, M.V., MAKHANEK, N.G., KONOVALOV, K.D.

COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., CHERN. MET. 1970, 13(2), 24-8

DATE PUBLISHED--------70

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

TOPIC TAGS--BLAST FURNACE, STEEL TUBE, CARBON DIOXIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/1406

STEP NO--UR/0148/70/013/002/0024/0028

CIRC ACCESSION NO--AT0120199

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0

2/2 009

CIRC ACCESSION NO--AT0120199 UNCLASSIFIED PROCESSING DATE--23OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SHAPE AND ARRANGEMENT OF TUYERES AND THEIR EFFECT ON BLAST FURNACE OPERATION WERE STUDIED. WATER COOLED TUBES WERE INTRODUCED WHICH WERE ABLE TO COLLECT SAMPLES OF GASES AT A VARIETY OF POINTS. THE COMBUSTION ZONE WAS MORE DEVELOPED IN THE VERTICAL DIRECTION THAN IN THE HORIZONTAL. TO PROMOTE THE MORE FAVORABLE HORIZONTAL DIRECTION, ELLIPTICAL AND SLIT SHAPED TUYERES WERE TRIED; HOWEVER, THE NEED FOR CU AND DIFFICULTIES IN PLACING TUYERES IN EXACTLY HORIZONTAL POSITION MADE THIS CHANGE IMPRACTICAL. FUTHERMORE IT WAS TRIED TO JOIN INDIVIDUAL COMBUSTION CHAMBERS BY INCREASING THE NO. OF TUYERES FROM 10 TO 12; HOWEVER, THE RING SHAPED COMBUSTION ZONE WHICH WAS FORMED WAS VERY NARROW AND THE CO SUB2 CONTENT IN THE GASES INCREASED FROM 4-6PERCENT AT THE FURNACE WALLS TO 16PERCENT CLOSER TO THE AXIS OF THE FURNACE. FACILITY: URAL. POLITEKH. INST., SVERDLOVSK, USSR.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0

1/2 009 UNCLASSIFIED PROCESSING DATE--11SEP70

TITLE--PRODUCTION OF VALERIAN GALENICALS USING CONDENSED CARBON DIOXIDE -U-

AUTHOR--MURAVYEV, I.A., KECHATOV, YE.A., SMETANIN, YU.I.

COUNTRY OF INFO--USSR

SOURCE--KHIM. FARM. ZH. 1970, 4(1), 48-51

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--DRUG PRODUCTION, CARBON DIOXIDE, PROCESSED PLANT PRODUCT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1985/1645

STEP NO--UR/0450/70/004/001/0048/0051

CIRC ACCESSION NO--AP0101700

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0

2/2 009

CIRC ACCESSION NO--AP0101700 UNCLASSIFIED PROCESSING DATE--11SEP70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ROOTS OF THE VALERIAN PLANT (17 KG), MACERATED AND CRUSHED BY MILLING, WERE LOADED IN EXTRACTORS AND THE EXTRACTORS HERMETICALLY SEALED. AFTER FILLING UP THE EXTRACTORS WITH GASEOUS CO SUB2 FROM A TANK ON TOP OF THE EXTRACTORS TO A GIVEN PRESSURE, CONDENSED CO SUB2 GAS FORMED OVER THE MATERIAL. THE EXTN. WAS CARRIED OUT AT 25DEGREES AT 65 ATM FOR 3 HR. THE MICELLES FROM THE EXTRACTORS WERE FED INTO A FILTER, AND THE FILTRATE INTO AN EVAPORATOR FOR REMOVING THE EXTRACTANT. THE NATIVE EXT. THUS OBTAINED WAS A MOBILE LIQ. WITH THE CHARACTERISTIC ODOR OF THE STARTING CRUDE. THE YIELD WAS 2.2PERCENT BASED ON THE STARTING CRUDE. A DIAGRAM OF THE APP. IS GIVEN.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0

USSR

SMETANINA, L. B., LESHCHENKO, S. S., YEGOROVA, Z. S., STARODUBTSEV, D. S., KLINSHPONT, E. R., KAPLUNOV, M. Ya., and KARPOV, V. L., Scientific Research Physico-Chemical Institute imeni L. Ya. Karpov

"Radiation Structuralization of Ethylenepropylene Rubber in Presence of N-Phenylmaleimide Sensitizer"

Moscow, Vysokomolekulyarnyye Soyedineniya, Vol 12, No 11, Nov 70, pp 2,401-2,407

Abstract: The process of radiation structuralization of ethylenepropylene rubber [SKEP] and its mixtures with N-phenylmaleimide [NPMI] was studied. It was determined that NPMI is a sensitizer for radiation crosslinking of SKEP, the rate of gel-formation being directly proportional to the quantity of NPMI added. The effect is neither ionic nor radical; addition of NPMI does not affect the production of free radicals and the recombination of the radicals is identical with or without NPMI; liberation of charges trapped in the traps shows also no effect on the process. It has been proposed that NPMI acts as an acceptor of hydrogen during the γ-irradiation, being reduced to N-phenylsuccinimide in the process. Thus it aids in production of more vinylidene bonds in SKEP and accelerates the crosslinking of SKEP.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0

472 018

UNCLASSIFIED

TITLE--STRUCTURE FORMATION OF ETHYLENE PROPYLENE RUBBER UNDER THE INFLUENCE OF GAMMA RADIATION -U-

PROCESSING DATE--27NOV70

AUTHOR-(04)-SMETANINA, L.B., LESHSHENKO, S.S., YEGOROVA, Z.S., KARPOV, V.L.

COUNTRY OF INFO--USSR

SOURCE--KHIM. VYS. ENERG. 1970, 4(3), 274-5

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--ETHYLENE, PROPYLENE, COPOLYMER, RUBBER, GAMMA RADIATION, POLYMER CROSSLINKING, GEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3008/0867

STEP NO--UR/0456/70/004/003/0274/0275

CIRC ACCESSION NO--AP0137895

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0

2/2 018 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0137895

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE IRRAND. OF ETHYLENE PROPYLENE COPOLYMER (I) IN AIR CAUSES AN INCREASE OF THE GEL FRACTION TO A MAX. OF 54PERCENT AND A SUBSEQUENT DECREASE DUE TO DEGRADATION. IN VACUUM OR IN HE, THE IRRADN. CAUSES THE FORMATION OF VINYLIDENE END GROUPS WHICH REACT TO FORM CROSSLINKS. NEOZONE D PRESENT IN COM. I ALSO REACTS WITH THESE END GROUPS THUS SLOWING THE GEL FORMATION RATE. FACILITY: FIZ. KHIM. INST. IM. KARPOVA, MOSCOW, USSR.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0

1/2 023 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--RESISTANCE OF ALUMINUM ALLOYS IN VARIOUS CORROSIVE MEDIA -U-

AUTHOR-(05)-BUDOV, G.M., GUZEYEV, E.A., YEFIMOV, I.A., SMETANINA, N.G., FLAKS, V.YA.

COUNTRY OF INFO--USSR

SOURCE--PROM. STROIT. 1970, (1), 40-2

DATE PUBLISHED--------70

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

TOPIC TAGS--ALUMINUM ALLOY, ALUMINUM CORROSION, ALLOY DESIGNATION, CHLORINE, HYDROGEN SULFIDE, CARBON DISULFIDE, INDUSTRIAL PLANT, SULFUR OXIDE, OCEAN, ARCTIC TEST/(U)DIBT ALUMINUM ALLOY, (U)1B95T1 ALUMINUM ALLOY, (U)AK6T1 ALUMINUM ALLOY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1984/1298 STEP NO--UR/0227/70/000/001/0040/0042

CIRC ACCESSION NO--AP0055969

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0

2/2 023

CIRC ACCESSION NO--AP0055969 UNCLASSIFIED PROCESSING DATE--18SEP70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CORROSION OF D16-T, B95-T1, AND AK6-T1 AL ALLOYS (COMPN. NOT GIVEN) WAS DETD. BY A 2 YR EXPOSURE ON THE SHORE OF THE ARCTIC OCEAN AND AT INDUSTRIAL PLANTS. THE RESULTS ARE GIVEN. THE LOSS STRENGTH WAS GREATER ON THE SHORE THAN AT THE PLANTS. AT THE INDUSTRIAL PLANTS, CL BEARING ATMS. CAUSED GREATER CORROSION THAN THOSE CONTG. SO SUB2, H SUB2 S, OR CS SUB2.

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0

USSR

Organophosphorous Compounds

UDC: 618.664.066

OPRYA, V. Ya., SMETANKINA, N. P., VALETDINOV, R. K., Institute of Chemistry of High-Molecular Compounds, Kiev

"Polyurethane Coatings Which Contain Phosphorus"

Kiev, Khimicheskaya Tekhnologiya, No 1(61), Jan/Feb 72, pp 34-36

Abstract: In order to determine the possibility of reducing the flammability of polyurethane lacquer compositions, the authors investigate the effect of adding various quantities of tri(hydroxymethyl)phosphine to compositions based on a copolymer of tetrahydrofuran with propylene oxide combined with polyisocyanate. The optimum combination of physical and mechanical properties is observed in coatings using equimolar amounts of tri(hydroxymethyl)phosphine and polyester. Films with a phosphorus content of 0.035-0.25% are self-quenching.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0

USSR

UDC 621.791.052.011:669.71

KOMAROV, M. A., Engineer, GITARSKIY, L. S., Engineer, LOBZHANIDZE, A. V., Engineer, and SMETANNIKOV, V. V., Engineer

"Properties of Welded Joints of Aluminum-Beryllium Alloy"

Moscow, Svarochnoye Proizvodstvo, No 9 (443), Sep 71, pp 26-28

Abstract: Properties of welded joints of No 1, No 2, Be-31Al, Be-41Al, and Be-38Al Al-Be-alloys (0.8-3.0 mm thick sheets) welded by the argon-arc and electron beam methods, were experimentally investigated. The results are discussed by reference to graphs showing the diagram of state of Al-Be and effect of welding rate on mechanical properties of argon-arc welded joints of 2.0-mm-thick sheets and their microstructures. The experiments demonstrated that high quality welds on sheets of Al-Be alloys can be obtained by d.c. argon-arc welding of direct polarity in a chamber with controllable atmosphere. A redistribution of the Be-component in the thermal influence zone and the seam metal takes plzce, influenced by the Al-Be welding thermal cycle. The strength of Ar-arc welded joints was found to be 34 kg/mm^2; their plasticity and ductility characteristics exceeded the characteristics of the initial metal. In order to obtain a quality weld by the electron-beam method, the welding must be performed in two operations (with a sharp beam and with a

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0

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KOMAROV, M. A., et al., Svarochnoye Proizvodstvo, No 9 (443), Sep 71, pp 26-28

defocused beam), but the properties of such joints are lower than the properties obtained by Ar-arc welding. Five illustrations, three tables, six bibliographic references.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0

1/2 025 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--LIFETIME OF IRON DOPED INDIUM ANTIMONIDE CURRENT CARRIERS -U-

AUTHOR-(03)-ILMENKOV, G.V., NASLEDOV, D.N., SMETANNIKOVA, YU.S.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TEKH. POLUPROV. 1970, 4(3), 593-6

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--INDIUM ANTIMONIDE, IRON, CRYSTAL IMPURITY, ZONE REFINING, PHOTOCONDUCTIVITY--

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/1721 STEP NO--UR/0449/70/004/003/0593/0596

CIRC ACCESSION NO--AP0120433

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2/2 025 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0120433

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TEMP. DEPENDENCE OF LIFETIME OF CURRENT CARRIERS OF FE DOPED INSB WAS EXAMD. IN THE RANGE 80-270DEGREESK. THE MATERIAL WAS PREPD. BY ZONE REFINING AND THE SAMPLES SHOWING NO HALL CONST. ANOMALIES WERE CHOSEN FOR MEASUREMENTS. LIFETIMES (TAU SUBN, TAU SUBP) WERE DETD. FROM TEMP. DEPENDENCES OF PHOTOMAGNETIC AND PHOTOCOND. CURRENTS. FE DOPED INSB WAS COMPARED WITH P TYPE NONDOPED MATERIAL AND NO APPRECIABLE DIFFERNCE IN THE TEMP. DEPENDENCES OF TAU SUBN AND TAU SUBP FOR THE BOTH KINDS OF SAMPLES WAS OBSC. IN REGION OF HIGH TEMPS. TAU SUBN AND T SUBP ARE LIMITED BY AUGER RECOMBINATION, AND IN THE 80-100DEGREESK REGION TAU SUBN IS LESS THAN TAU SUBP AS THE RESULT OF ELECTRON TRAPPING. THE EXISTENCE OF 2 LEVELS ACCOUNTING FOR RECOMBINATION WAS SUGGESTED, YIELDING THE FOLLOWING PARAMETERS: E SUB1 EQUALS 0.055, E SUB2 EQUALS 0.11 EV AT LIQ. N TEMP.; COEFFS. OF ELECTRON AND HOLE TRAPPING C SUBN1 EQUALS 3 TIMES 10 PRIME NEGATIVE5, C SUBP1 EQUALS 4 TIMES 10 PRIME NEGATIVE10, C SUBN2 EQUALS 1 TIMES 10 PRIME NEGATIVE6, AND C SUBP2 EQUALS 1 TIMES 10 PRIME NEGATIVE8 CM PRIME NEGATIVE3 SEC PRIME NEGATIVE1. CONCNS. OF CENTERS GIVING RISE TO THE LEVELS RANGES (2-3) TIMES 10 PRIME14 CM PRIME NEGATIVE3; THE CENTERS WERE ASSIGNED TO STRUCTURAL DEFECTS AND NOT TO FE IMPURITIES.

FACILITY: FIZ.-TEKH. INST. IM. IOFFE, LENINGRAD, USSR.

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S

USSR

SMETNIK, A., Head of Department, Main Administration of Plant Protection MSKh SSSR, Candidate of Biological Sciences

"Biological Plant Protection"

Moscow, Sel'skaya Zhizn', 30 Jan 70, p 3

Translation: Many insects live on agricultural plants and cost us a lot. The loss that is caused by them in agriculture and forestry is measured in billions of rubles. Some of the insects, however, are beneficial. Thye destroy pests and are known as entomophages. How can they be used better to combat the numerous enemies of fields and forests? Scientists and personnel of the plant protection service are currently engaged in the resolution of this complicated problem.

About twenty years ago, when farmers received universal poisonous chemicals, many considered that the problem of protecting the harvest against pests was fully resolved. Vast areas were treated with poisonous chemicals. Specialists, however, noticed that despite the effective action of the poisons, the number of pests in the year following the one when the poison was applied does not decrease, but sometimes even

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SMETNIK, A., et al., Moscow, Sel'skaya Zhizn', 30 Jan 70, p 3

increases. Shield bugs constitute a good example.

This occurs because the poisonous chemicals, along with the pests, also kill beneficial insects -- the entomophages. Poisons destroy a particularly large amount of insects of the Cheyletidae family -- grasshopper bees, members of the Larvaevoridae family, chalcid flies, green lacewings, seven-spot ladybirds, and other insects which destroy many plant pests.

It has now become apparent the in organizing the protection of a harvest it is impossible to ignore the biological method, since chemical measures alone cannot always ensure an appropriate effect. In this connection biological techniques are finding increased application in regions where subtropical crops are cultivated, as well as in orchards, truck gardens, forests, and on hundreds of thousands of hectares of field crops.

During the period between 1963 and 1968, for example, use of the biological method increased by almost nine times, covering an area

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USSR

SMETNIK, A., et al., Moscow, Sel'skaya Zhizn', 30 Jan 70, p 3

of two million hectares. The most widespread use in kolkhozes and sovkhozes was made of egg parasites of the Trichogrammatidae family against the turnip moth and other pests of field and fruit crops, the biological preparation entobakterin against eating pests on fruit and vegetable crops, wooly aphid parasites in apple orchards, ashersonia fungus on citrus crops, and pseudoficus in industrial plantings of mulberry trees, Cheyletus eruditus was used underground against spider mites on cucumbers along with the phytomisa midge, which suppresses broomrape, and others.

The the present time egg parasites of the Trichogrammatidae family are used in the struggle against various cutworms over an area of more than 1.5 million hectares in the Ukraine, the Russian Federation, Belorussia, and Latvia. This work is on a particularly large scale in the Ukraine, where a broad network of interkolkhoz cost-accounting laboratories was created which are implementing the Trichogrammatidae.

Scientific and production experiments indicate the great

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USSR

SMETNIK, A., et al., Moscow, Sel'skaya Zhizn', 30 Jan 70, p 3

effectiveness of utilization of egg parasites of the Trichogrammatidae damily against cutworms on field crops, the corn borer, and in a number of regions against the apple worm. The Trichogrammatidae can be used over tens of millions of hectares. This task must be carried out by the plant protection service.

In recent years considerable attention has been devoted to elaboration of a biological method of combatting grain pests, particularly the pentatomid. It was established that in order to preserve Telenomus parasites, the period of chemical treatments is of considerable value. When Dipterex is used against chinch larvae, from 30,000 to 35,000 egg-eaters are preserved on each hectare. At that moment they are in the preimaginal phase in chinch larvae and are inaccessible to the insecticide. This technique promotes the gradual accumulation of egg-eaters, which leads to a decrease in chemical treatments and an increase in the effectiveness of the protective measures.

A method was developed for the mass-scale breeding and utilization of Cheyletus eruditus to combat spider mites on cucumbers under-

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0

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SMETNIK, A., et al., Moscow, Sel'skaya Zhizn', 30 Jan 70, p 3

ground. Last year the Cheyletus eruditus "worked" on an area of 250,000 square meters. Data yielded by tests conducted in the Moskovskaya, Leningradskaya and other oblasts, permit a broad recommendation of this method, which excludes the utilization of poisons in the struggle against spider mites on cucumbers. In hothouses, where pests were destroyed with the Cheyletus eruditus, the additional harvest amounted to five kilograms of cucumbers per square meter. Twelve to fourteen rubles in profits were earned for every ruble that was spent. In the next several years, the biological protection of cucumbers underground is planned for an area of three million square meters.

The struggle against a number of dangerous quarantine blights is developing with success. In republics of Central Asia and Transcaucasia, pseudoficus is used against the Comstock mealybug (mainly on mulberry trees) in an area of more than 43,000 hectares. This permits an annual saving of 1.3 million rubles.

At the present time methods are being worked out for the biological extermination of weeds. Widespread tests were carried out

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0

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SMETNIK, A., et al., Moscow, Sel'skaya Zhizn', 30 Jan 70, p 3

involving the phytomisa midge, which destroys broomrape, a dangerous weed affecting vegetable, melon, and tobacco crops. Last year the phytomisa midge was used in the Uzbek SSR, and in other republics of Central Asia, as well as in Kazakhstan, Crimea, and the Astrakhanskaya and Rostovskaya oblasts.

Great possibilities are foreseen for the use of microorganisms which cause disease and destruction of insects, as well as for destruction of pests with the aid of a mass release of sterilized species, and the utilization of attracting and hormone-like preparations. Science has already worked out a number of microbial preparations some of which have passed state tests and were recommended for widespread use in agricultural production. The include a bacteriological preparation called entobakterin, which is used, first of all, in the struggle against the cabbage butterfly, the cabbage white butterfly, the diamond back moth, and pyraloidea.

Agriculture is in great need of a fungal preparation called boverin, industrial production of which is not yet organized. The

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SMETNIK, A., et al., Moscow, Sel'skaya Zhizn', 30 Jan 70, p 3

biological preparation, in combination with small doses of insecticides is particularly effective in the struggle against the Colorado potato beetle and the apple worm.

It is planned to increase the utilization of biological preparations every year. A decisive moment in the realization of projected plans is the creation of a large-scale industry producing biological preparations. The Main Administration of the Microbiological Industry of the USSR of the Council of Ministers must undertake radical measures in this direction.

Further progress in the use of the biological method is inconceivable without a widespread search for effective new biological methods of protecting plants coupled with a profound elaboration of the scientific bases of their utilization.

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UDC 632.937(047)

USSR

SMETNIK, A. I., Candidate of Biological Sciences, and LEBEDEV, G. I., Main Administration of Plant Protection, Ministry of Agriculture USSR

"Biomethod Seminar"

Moscow, Zashchita Rasteniy, No 4, 1970, pp 61-62

Abstract: The seminar was held Jan 12-16. The Chairman, I. A. Churayev, noted the progress made in past years in the application of biological agents for plant protection. V. A. Shchepetil'nikova and N. M. Tron' discussed the use of trichogramima. G. A. Beglyarov talked about combatting the spider mites on cucumbers. Introduction and acclimatization of the parasites of Pseudaphycus malinus, chalcid parasite, and coccophagus was reported by N. N. Shutova, while microbiological control of pests was discussed by N. S. Fedorinchuk. O. A. Aleshina reported on the production of biopreparations and antibiotics, while the use of viruses was covered by V. Yu. Dulo. Protection of fruit cultures was discussed by B. P. Adashkevich,

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0

USSR

SMETNIK, A. I., et al, Moscow, Zashchita Rasteniy, No 4, 1970, pp 61-62

who pointed out the need for proper selection of insecticides. The use of biological control of weeds was the subject of O. V. Kovalev and Ts. G. Bronshteyn, while G. V. Gusev and V. A. Shap speculated on the possibilities of further studies in this area. M. A. Kozhushko, P. I. Shchichenkov, and I. A. Varenik discussed organizational aspects of biological control of agricultural pests.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0

USSR UDC: 621.317.7.089.68

ABROSIMOV, E. A., LAZAREVA, N. A., MALOSHENKO, O. Ya., SMIDT, V. I.

"A Precision High-Frequency Fixed Capacitor"

Dokl. Vses. nauchno-tekhn. konferentsii po radiotekhn. izmereniyam. T. 1 (Reports of the All-Union Scientific and Technical Conference on Radio Engineering Measurements. Vol. 1), Novosibirsk, 1970, pp 11-16 (from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12A362)

Translation: It is noted that standard capacitors must be developed for use with special circuits so that standard inductors and resistors can also be made. A high-frequency reference capacitor based on a coaxial design made at the Siberian Scientific Research Institute of Metrology is described. Its electrical parameters are given. One illustration, bibliography of eight titles. N. S.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0

SMIGELSKIY, S.

SO: JPRS 54768
22 DEC 71

UDC 612.111.3"52"-06:612.275.1

EFFECT OF HYPOXIA ON THE DIURNAL RHYTHM OF MITOTIC ACTIVITY IN THE BONE MARROW ERYTHROPOIETIC SYSTEM

[Article by S. Baranski, K. Kwarezki, Ya. Rozinski and S. Smigelski; Moscow, Kosmicheskaya Biologiya i Meditsina, Russian, Vol 5, No 5, 1971, submitted for publication 17 April 1971, pp 14-17]

Abstract: Experiments performed on guinea pigs under varying illumination conditions and on animals kept for 14 days at an elevation of 7,000 m revealed a distinct relationship between the mitotic activity of bone marrow cell erythropoiesis and the illumination pattern. They also demonstrated hypoxic stimulation of the erythropoietic system.

Numerous investigations (Baranski, et al., 1971; Blumenthal; Bullough; Malberg and Barnum; Mauer, Tuermyr) demonstrated that during the day there is a change in mitotic activity in different tissues and organs. Under natural illumination conditions the number of mitoses increases at a definite time during the day. Depending on the investigated material and the species of animals and the daily distribution of their activity the greatest number of mitoses is observed at 1900-2400 or at 0200-0500 hours. The hemopoietic system is also subjected to rhythmic changes during the course of the day (Mauer). The greatest number of mitoses in the erythropoiesis system is observed at 2100-2200 hours when there is illumination for 12 hours per day (0600-1800 hours) (Goldeck; Mauer). This rhythm is of an endogenous nature but there is also a dependence on illumination, which is expressed in seasonal fluctuations.

High-altitude hypoxia is a strongly acting factor stimulating erythropoiesis and causing an increase in the number of mitoses in this system even on the first days of its development (Armstrong; Czerski; Yoffey). Taking into account the data cited in the literature, we deemed it desirable to study the diurnal changes in erythropoiesis in animals subjected to the prolonged effect of sub-maximum high-elevation hypoxia under different illumination conditions.

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1/2 016 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--COATING SUSPENSIONS FOR CORROSION INHIBITING PAPER -U-

AUTHOR-(03)-RYABOV, A.K., SMIKUN, Y.YA., ZOSIM, Z.L.

COUNTRY OF INFO--USSR

SOURCE--BUM. PROM. 1970, (1), 18

DATE PUBLISHED-------70

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

TOPIC TAGS--CORROSION INHIBITOR, PAPER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1984/1250 STEP NO--UR/0329/70/000/001/0018/0018

CIRC ACCESSION NO--AP0055921

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0

2/2 016 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0055921

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A STUDY OF SUSPENSION STABILITY WAS CARRIED OUT ON SUSPENSIONS CONTG. SLIGHTLY SOL. CORROSION INHIBITORS, DICYCLOHEXYLAMMONIUM NITRATE AND CYCLOHEXYLAMMONIUM CHROMATE, AND CONTG, SYNTHETIC LATEXES AS BINDERS AND EITHER NH SUB4 CASEINATE OR SOL. ME CELLULOSE (I) AS THE PROTECTIVE COLLOID. A RHEOL. STUDY OF THE SUSPENSIONS CONFIRMED THE HIGHER EFFECTIVENESS OF I AS THE PROTECTIVE COLLOID. AT SIMILAR TO 40DEGREES, I. E. THE TEMP. OF PAPER COATING UNDER INDUSTRIAL CONDITIONS, THE VISCOSITY OF SUSPENSIONS CONTG. I WAS ABOUT TWICE THE VISCOSITY OF THOSE CONTG. THE CASEINATE. THE STRENGTH OF STRUCTURES FORMED AT 40DEGREES WAS LOWER THAN THAT OF THOSE FORMED AT 25DEGREES, INDICATING GOOD PROCESSABILITY OF SUSPENSIONS CONTG. I. CURVES OF INHIBITOR PARTICLE SEDIMENTATION RATE AS A FUNCTION OF THEIR SIZE, WITHIN THE 2-100 MU RANGE, FOR SUSPENSIONS HAVING VISCOSITIES RANGING FROM 17.4 TO 107 CP, SHOWED A SIGNIFICANT SEDIMENTATION RATE FOR PARTICLES THE DIAM. OF WHICH EXCEEDED 10 MU. CONSEQUENTLY, IF THE PARTICLE SIZE OF THE INHIBITORS SUPPLIED TO PAPER MILLS EXCEEDS 10 MU, SUCH INHIBITORS SHOULD BE SUBJECTED TO ADDNL. MILLING BEFORE BEING USED IN THE PREPN. OF SUSPENSIONS. WHEN SUSPENSIONS PREPD. FROM CORROSION INHIBITORS WITH THE PROPER PARTICLE SIZE CONTAIN 10-14PERCENT I, THEY REMAIN STABLE FOR 2 HR. AT 5PERCENT I, THEY ARE STABLE FOR AT LEAST 1 HR.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0

Thin Films

USSR UDC 535.241.4

LEVINSON, G. R., and SMILGA, V. I., Moscow

"Experimental Investigation of the Failure Threshold of Thin Metallic Films Under the Action of Laser Irradiation"

Moscow, Fizika i Khimiya Obrabotki Materialov, No 4, Jul-Aug 71, pp 124-128

Abstract: A method is proposed for the exprimental determination of the threshold density of force for the failure of thin metallic films taking into account actual distribution of radiation intensity at a focal spot. Experimental values for films of Ag, Al, Au, Cr, and Cu on a quartz substrate were compared with calculated values. The formula for adiabatic heating: $q^* \approx (\Delta T p_1 c_1 h)/At_u)$, where T -- boiling point temperature of film material; p_1, c_1, h -- density, specific heat capacity, and film thickness respectively; A -- coefficient; t_u -- length of radiation pulse ($t_u = 10^{-8}$ sec); was used for one set of data and a modified formula was used for a second set of data. The latter formula is the same as above except it is multiplied by $(1+(p_2c_2(a_2t_u)^{\frac{1}{2}})/p_1c_1h)$. Data for these fomulas were plotted along with

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LEVINSON, G. R., and SMILGA, V. I., Fizika i Khimiya Obrabotki Materialov, No 4, Jul-Aug 71, pp 124-128

data from the experimental tests. It was found that in most cases the experimental values fell between to two curves from calculated data and that, due to the lack of a sufficient number of experimental values to plot, no unique conclusion could be made about the suitability of this or any other formula. Four figures, 10 equations, 4 bibliographic references.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0

USSR

UDC 621.382.2

DOMANEVSKIY, D. S., LITVINOV, V. L., LOMAKO, V. M., SMILGA, V. P., TKACHEV, V. D., UKHIN, N. A., Belorussian State University imeni V. I. Lenin, Minsk

"Radiation Changes in the Voltage-Current Characteristics of Heavily Doped Gallium Arsenide PN Junctions"

Leningrad, Fizika i Tekhnika Poluprovodnikov, Vol 4, No 8, Aug 70, pp 1425-1431

Abstract: An investigation is made into the change in electrical characteristics of heavily doped gallium arsenide PN junctions under the effect of irradiation in a mixed (neutron-gamma) field of a reactor and fast electrons with an energy of 28 MeV. In many specimens tunnel transitions are detected in the initial state with the participation of defect levels in the forbidden band. Emission brings about an increase in excess current due to the introduction of radiation defects which produce closely situated levels throughout the entire forbidden band. An increase was observed in the density of states in the tails of the bands due to activation of the electrically inactive part of the dopants under the effect of radiation. In the case of high radiation intensities, there is an increase in excess current in narrow PN junctions due to the disordered regions which appear in the junction.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0

USSR UDC: 621.396.677.085.414

KLIGER, G. A., SMILOVENKO, L. I., and SORINA, E. I.

"Investigating the Possibility of Shortening the Horizontal Elements of a Vertical Zigzag Log-Periodic Antenna"

Tr. NII radio (Transactions of the Scientific Research Institute of Radio) No. 2, 1970, pp 96-102 (from RZh-Radiotekhnika, No. 3, March 71, Abstract No. 3B34)

Translation: Several methods are considered for reducing the length of horizontal phasing elements of a vertical zigzag log-periodic antenna. Results are given of computations and experimental investigations. Resume

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0

UDC 621.396.67:621.372.22(088.8)

USSR

GUREVICH, R. V., BAKAYEV, N. T., OLIFIN, L. K., SMILOVENKO, L. I.

"A Feed Line for Short-Wave Band Antennas"

USSR Author's Certificate No 254587, Filed 29 May 67, Published 25 Mar 70 (from RZh-Radiotekhnika, No 10, Oct 70, Abstract No 10B93 P)

Translation: The proposed feed line for short-wave band antennas is made in the form of a wire feeder suspended on supports. To improve matching over a wide frequency range and increase the transmitted power, the supports are set at different distances from each other; for instance for a feeder with eight supports, the first spacing is selected in the range of 95-100%, the second--75-85%, the third--90-100%, the fourth--55-65%, the fifth--60-70%, the sixth--70-80% and the seventh--55-65% of the maximum permissible spacing for the given type of feeder.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0

UNCLASSIFIED

PROCESSING DATE--20NOV70

1/2 018

TITLE--PREPARATION FOR TREATING DISEASES OF ORAL CAVITY MUCOSA -U-

AUTHOR-(03)-NAKHIMOVSKAYA, Z.I., SMILTENA, A.K., GRIKITIS, E.YA.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 267,014

REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,

DATE PUBLISHED--01APR70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ORAL DISEASE, PATENT, DRUG, FREON

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

STEP NO--UR/0482/70/000/000/0000/0000

PROXY REEL/FRAME--3004/1080

CIRC ACCESSION NO--AA0131627

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0

UNCLASSIFIED PROCESSING DATE--20NOV70

2/2 018

CIRC ACCESSION NO--AA0131627

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A PREPN. FOR TREATING DISEASES OF ORAL CAVITY MUCOSE CONTAINED A SOLN. OF PROPOLIS IN 95PERCENT ETOH. GLYCEROL, FREON 12, AND FREON 114 WERE ADDED. THE COMPONENTS OF THE PREPN. WERE TAKEN IN THE FOLLOWING WT. RATIOS: SOLN. OF PROPOLIS IN ALC. AND GLYCEROL 55-60, MIXT. OF FREON 12 WITH FREON 114 40-5PERCENT. THE COMPONENTS IN THE SOLN. OF PROPOLIS IN ALC. AND GLYCEROL WERE TAKEN IN THE FOLLOWING WT. RATIOS: PROPOLIS 5-7, 95PERCENT ETOH 78-82, GLYCEROL 13-15PERCENT. THE MIXT. OF FREONS CONTAINED FREON 12 SIMILAR TO 4C AND FREON 114 SIMILAR TO 60PERCENT. FACILITY: SPECIAL CONSTRUCTION BUREAU OF CHEMIZATION OF THE NATIONAL ECONOMY, LATVIAN S.S.R.

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0

USSR UDC: 621.318.57-529

MOGILEVSKIY, G. V., SOSKOV, A. G., RAYNIN, V. Ye., SMILYANSKIY, I. I.

"A Kipp Oscillator for a Time Relay"

USSR Author's Certificate No 254629, filed 28 Oct 68, published 12 Mar 70 (from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 11, Nov 70, Abstract No 11A66 P)

Translation: This Author's Certificate introduces a kipp oscillator for a time relay. The device contains two transistors of different conductivity types, a discharge resistor, and a controlling and a main capacitor connected between the base of one transistor and the collector of the other. The required slope for the curve expressing hold time as a function of controlling voltage is attained by selecting the time for recharging the main condenser an order of magnitude greater than for the controlling capacitor. One illustration. N. S.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0

1/2 022 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--VINYL ARYL ETHERS -U-

AUTHOR-(04)-LEVCHENKO, A.I., MOROZ, R.A., ZATOLOKIN, E.I., SMINYCH, V.V.

COUNTRY OF INFO--USSR

SOURCE--GER. OFFEN. 1,802,602

DATE PUBLISHED--21MAY70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL SYNTHESIS, CHEMICAL PATENT, ETHER, DIELECTRIC PROPERTY, POLYMERIZATION, NAPHTHENE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3004/1771 STEP NO--GY/0000/70/000/000/0000/0000

CIRC ACCESSION NO--AA0132037

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0

UNCLASSIFIED PROCESSING DATE--13NOV70

2/2 022

CIRC ACCESSION NO--AA0132037

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. VINYL EHTERS OF AROMATIC COMPDS. WERE PREPD. BY REACTION OF AR(R)USBN (WHERE AR EQUALS ARYL; R EQUALS OH, SO SUB3 H, NH SUB2, OR HALOGEN; AND N EQUALS 1-2) WITH CAC SUB2 IN H SUB2 O AND AN ORG. SOLVENT AT 170-220DEGREES AND 20-70 ATM IN THE PRESENCE OF CUCL SUB2 (WHEN R EQUALS HALOGEN) AND KOH OR NAOH. THUS, 5 AMINOACENAPHTHENE 33.8, KOH 11.2, AND CAC SUB2 64 G IN 52 ML H SUB2 O AND 100 ML C SUB6 H SUB6 WAS HEATED TO 195-200DEGREES WITHIN 3 HR AND KEPT 18 HR AT 195-200DEGREES WHILE THE PRESSURE ROSE TO A MAX. OF 43 ATM AND THEN FELL TO 32 ATM. TO GIVE 71.4PERCENT 5 (VINYLOXY)ACENAPHTHENE. OTHER ETHERS PREPD. INCLUDED 5,6 BIS(VINYLOXY)ACENAPHTHENE, 3(VINYLOXY)PHENANTHRENE, AND 2,7 BIS (VINYLOXY)FLUORENE. ON HEATING, THE VINYL ETHERS EASILY FORM HEAT STABLE POLYMERS OF HIGH DIELEC. VALUES. FACILITY: KHARKOV POLYTECHNIC INSTITUTE.

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0

1/2 029 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--CORROSION PROTECTIVE PROPERTIES OF SILICONE LIQUIDS AND DIOCTYL SEBACATE -U-

AUTHOR-(05)-SMIOTANKO, E.A., SHEKHTER, YU.N., NIKONOROV, YE.M., YEROKHIN, G.S., SHVETSOVA, V.T.

COUNTRY OF INFO--USSR

SOURCE--NEFTEPERERAB. NEFTEKHIM. (MOSCOW) 1970, (2), 14-16

DATE PUBLISHED--------70

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

TOPIC TAGS--CORROSION PROTECTION, SILICONE, COPPER ALLOY, LUBRICANT PROPERTY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/1674 STEP NO--UR/0318/70/000/002/0014/0016

CIRC ACCESSION NO--AP0118652

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0

2/2 029 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0118652

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A RELATION WAS OBTAINED BETWEEN THE RELATIVE ELEC. RESISTANCE (R) AND THE RELATIVE POLARIZATION RESISTANCE (R SUBP) OF THIN LUBRICANT LAYERS ON METAL SURFACES AND THE ELECTROCHEM. CORROSION. DIOCTYL SEBACATE (I) OR VARIOUS COM. SILICONE OILS (POLY(METHYLSILOXANE), POLY(METHYLPHENYLSILOXANE), POLY(ETHYLSILOXANE), POLY(METHYL,GAMMA,TRIFLUOROPROPYLSILOXANE)) DO NOT PROTECT CU PLATES AGAINST A RAPID WT. LOSS IN 0.5N NACL SOLN. AND HAVE LOW R AND R SUBP VALUES (IN 0-30.0PERCENT RANGE). THE ADDN. OF 2PERCENT CORROSION INHIBITOR, SUCH AS "UREA SUCCININIDE", TO I INCREASED ITS R FROM 5.0 TO 98.8PERCENT, ITS R SUBP FROM 0 TO 66PERCENT, AND CONSIDERABLY REDUCED THE ELECTROCHEM. CORROSION OF CU PROTECTED WITH IT.

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APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0

1/2 020 UNCLASSIFIED

TITLE--PROCESS FOR INTRODUCING DIPHENYLAMINE INTO LITHIUM GREASES -U-

PROCESSING DATE--13NOV70

AUTHOR-(05)-SMIOTANKO, E.A., UVAROVA, E.M., FUKS, I.G., VAYNSKTOK, V.V., SHEKHTER, YU.I.

COUNTRY OF INFO--USSR

5

SOURCE--NEFTEPERERAB. NEFTEKHIM. (MOSCOW) 1970, (5) 23-5

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--ANTIOXIDANT ADDITIVE, GREASE, LUBRICANT ADDITIVE, DIPHENYLAMINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3005/1947

STEP NO--UR/0318/70/000/005/0023/0025

CIRC ACCESSION NO--AP0133791

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0

2/2 020 UNCLASSIFIED

CIRC ACCESSION NO--AP0133791 PROCESSING DATE--13NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFICIENCY OF PH SUB2 NH, AND OXIDN. INHIBITOR FOR GREASES, WAS NOT AFFECTED BY THE METHOD OF INTRODUCING THE ADDITIVE. THE OPTIMUM CONCN. WAS 0.3-0.6 WT. PERCENT PH SUB2 NH.

FACILITY: MOSK. OPYT.-PROM. ZAVOD, MOSCOW, USSR.

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0

USSR

UDC 539.14+539.143

SMIRENKIN, G. N.

"Fission of Nuclei"

V sb. Razvitiye fiz. v Rossii. T. 2 (Development of Physics in Russia. Vol 2--Collection of Works), Moscow, "Prosveshcheniye," 1970, pp 334-359 (from RZh-Fizika, No 3, Mar 71, Abstract No 3V183)

Translation: A survey. The contribution of Soviet scientists to the study of the physics of the fission of the atomic nucleus is considered, beginning from the time of the observation of the breakup of the atomic nucleus by O. Hahn and F. Strassmann at the end of 1938. The survey of papers published up to January 1968 ends with a discussion of the current stage of the study of the physics of fission.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0

1/2 007 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--ANGULAR ANISOTROPY OF PLUTONIUM 239 PHOTOFISSION -U-

AUTHOR-(03)-SOLDATOV, A.S., TSIPENYUK, YU.M., SMIRENKIN, G.N.

COUNTRY OF INFO--USSR

SOURCE--YAD. FIZ. 1970, 11(5), 992-1000

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--ANTISOTROPY, PLUTONIUM ISOTOPE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3008/0579 STEP NO--UR/0367/70/011/005/0992/1000

CIRC ACCESSION NO--AP0137664

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0

UNCLASSIFIED PROCESSING DATE--27NOV70

2/2 007

CIRC ACCESSION NO--AP0137664

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ENERGY DEPENDENCE OF THE CROSS SECTION AND THE ANGULAR ANISOTROPY NEAR THE THRESHOLD WAS MEASURED FOR THE REACTIONS PRIME239 PU (GAMMA,F) AND PRIME238 PU(GAMMA,F). A QUASI STATIONARY PRIME239 PU LEVEL WAS FOUND AT 5.6 MEV, 0.5 MEV BELOW THE THRESHOLD. FACILITY: FIZ.-ENERG. INST., MOSCOW, USSR.

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0

1/2 022 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--ANGULAR ANISOTROPY OF THE FISSION OF PB PRIME204 AND PB PRIME208 BY ALPHA PARTICLES NEAR THE THRESHOLD -U-

AUTHOR-(03)-KUVATOV, K.G., OKOLOVICH, V.N., SMIRENKIN, G.N.

COUNTRY OF INFO--USSR

SOURCE--JETP LETTERS (USA), VOL. 11, NO. 1, P. 42-6 (JAN. 1970)

DATE PUBLISHED----JAN70

SUBJECT AREAS--PHYSICS, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--ANISOTROPY, LEAD ISOTOPE, ALPHA PARTICLE, SPECTRUM, EXCITED NUCLEUS, DEFORMED NUCLEUS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3005/1749 STEP NO--US/0000/70/011/001/0042/0046

CIRC ACCESSION NO--AP0133654

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0

2/2 022 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0133654

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FROM THE ANGULAR ANISOTROPY MEASUREMENTS IT WAS ESTABLISHED THAT THE ENERGY GAP IN THE SPECTRUM OF THE INTERNAL EXCITATIONS OF THE NUCLEUS IN ITS TRANSITION STATE, DELTA F, HAS A WEAK DEPENDENCE ON THE DEFORMATION OF THE NUCLEUS IN THE FISSION PROCESS. (10 REFS.). FACILITY: KAZAKH ACAD. SCIS. USSR.

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0

UNCLASSIFIED

TITLE--ANGULAR ANISOTROPY OF LEAD 204 AND LEAD 208 FISSION BY ALPHA PARTICLES NEAR THRESHOLD -U-

PROCESSING DATE--16OCT70

AUTHOR-(03)-KUVATOV, K.G., OKOLOVICH, V.N., SMIRENKIN, G.N.

COUNTRY OF INFO--USSR

SOURCE--PIS'MA ZH. EKSP. TEOR. FIZ. 1970, 11(1), 42-6

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--ANISOTROPY, LEAD ISOTOPE, NUCLEAR FISSION, ALPHA BOMBARDMENT, FISSION CROSS SECTION, EXCITATION ENERGY, EXCITED NUCLEUS, ANGULAR DISTRIBUTION, POLONIUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/0679

STEP NO--UR/0386/70/011/001/0042/0046

CIRC ACCESSION NO--AP0105655

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0

2/2 031 UNCLASSIFIED

CIRC ACCESSION NO--AP0105655 PROCESSING DATE--16OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EXPTS. WERE CARRIED OUT WITH A CYCLOTRON AND TARGETS OF PRIME204 PB AND PRIME208 PB PREPD. BY ELECTROLYTIC METHODS, BY SIMULTANEOUS DETN. OF CROSS SECTIONS OF SIGMA SUBF OF THE (ALPHA, F) PROCESS AND OF THE ANGULAR DISPERSION) WITHETA) OF THE FISSION FRAGMENTS. THE ENERGY DROP OF ALPHA PARTICLES WAS DETD. BY AL FOILS WITH ACCURACY IS LESS THAN OR EQUAL TO PLUS OR MINUS 0.2 MEV. ANGULAR ANISTROPY W(0DEGREES)-W(90DEGREES) WAS PLOTTED AS A FUNCTION OF THE EXCITATION ENERGY E FOR PRIME208 PO, PRIME212 PO, AND PRIME210 PO, WITH E EQUALS E SUBX NEGATIVE E SUBF, WHERE E SUBX IS THE INITIAL ENERGY OF EXCITATION OF THE EXISTING NUCLEUS AND E SUBF IS THE HEIGHT OF THE FISSION BARRIER. E SUBF FOR PRIME208 PO WAS 19.8 MEV BY DETN. OF THE FUNCTION SIGMA SUBF (E SUBX). VALUES ASSUMED FOR PRIME210 PO AND PRIME212 PO WERE 20.5 AND 18.8 MEV, RESP. (S. G. THOMPSON, 1967). EXPTL. RESULTS AND THEORETICAL ANAL. OF THE ANISOTROPY PROVED THE WEAK DEPENDENCE OF THE ENERGY GAP DELTA SUBF ON THE NUCLEUS DEFORMATION IN THE FISSION PROCESS. FACILITY: INST. YAD. FIZ., ALMA ATA, USSR.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0

USSR

UDC 599.32-12:616.981.452-036.22(252-925.2)

NAUMOV, N. P., LOBACHEV, V. S., DMITRIYEV, P. P., KANATOV, Yu. V., and SMIRIN, V. M., Moscow State University and Central Asian Antiplague Institute

"Experience in Studying the Dispersal Rate and Paths of Movement of Plague Epizootics in the Northern Desert"

Moscow, Zhurnal Mikrobiologii, Epidemiologii, i Immunobiologii, No 2, 1973, pp 78-85

Abstract: Microbiological, immunological, and ecological data were employed to trace the paths and rates of plague epizootic dispersal northward across a front of over 200 km east of the Aral Sea in 1966-1969. Data were obtained for the most part from Rhombomys opimus Licht. and its parasites. Presence of animals with acute manifestations of plague and incomplete antibodies was assumed to suggest a new invasion. Prior to the period of investigation, plague foci were noted only on the outskirts of this territory following a rodent and ectoparasite eradication program conducted in 1958. In the spring 1966 northward dispersal began from foci just north of the Syr-Dar'ya River. Most progress occurred during 5 months of summer and fall and ranged from 15 to 50 km per year. By fall 1969 the epizootic became stabilized somewhat. Forward progress was stalled in areas that had been subjected to one-time eradication programs, but it was not entirely arrested. The radial dispersal of the

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NAUMOV, N. P., et al., Zhurnal Mikrobiologii, Epidemiologii, i Immunobiologii, No 2, 1973, pp 78-85

epizootic that was revealed suggests that the disease is spread predominantly through the dispersal of young R. opimus. This research demonstrates that epizootics can be traced reliably by direct observation in the field.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0

USSR

UDC 591.524

SMIRIN, V. M., and ORLOV, O. Yu., Candidates of Biological Sciences, Moscow State University

"Signaling and Orientation Among Rodents"

Moscow, Priroda, No 5, May 71, pp 84-88

Abstract: The great gerbil (Rhombomys opimus), Brandt's vole (Microtus brandti), and the yellow steppe lemming (Largurus luteus), which belong to the Cricetidae family, have characteristics in common with suslikks and marmots, which are related to squirrels (Sciuridae family). These characteristics are unlike those exhibited by other species of gerbils, voles, and lemmings and are associated with the natural habitat of the animals in question, i.e., a flat terrain with sparse vegetation (dry steppes, semidesert, and desert). The characteristics are of primary use to animals that are active in the daylight and consist of the ability to assume an upright position on the hind legs in surveying the landscape and watching for predators, and of warning other members of the colony of approaching danger by a special cry or by pounding on the ground with the hind legs. Because of the position of their eyes, which are located at the very top of the head, these rodents can watch the environment from vertical holes leading to their

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0

USSR

UDC 666.3.546.46'16

VOLYNETS, F. K., Candidate of Technical Sciences, ANAN'YEVA, G. V., SMIRNAYA, Ye. P.

"Roentgenostructural Investigation of the Texture of Optical Ceramics KO-1"

Leningrad, Optiko-Mekhanicheskaya Promyshlennost', No 12, December 1971, pp 10-14

Abstract: On the basis of x-ray investigations (by the method of Debye powder diagrams and pole figures), it is shown that optical ceramics KO-1 (polycrystalline magnesium fluoride), samples of which were obtained at various parameters of the technological process, and in particular, at various pressures (deformation stages) of hot pressing, manifests a fully expressed axial texture, the axis of the texture being the direction of pressure application. It is shown that the texture is formed in the process of compaction of the magnesium fluoride by hot pressing due to plastic deformation of the individual grains. 2 figures. 1 table. 5 references.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0

USSR

SMIRNITSKAYA, V. N.

UDC 577.4

"Problem of Regulating the Load of Production Subdivisions. (Characteristic Features of the Mathematical Model)"

Tr. Leningr. inzh.-ekon. in-ta (Works of Leningrad Economic Engineering Institute), 1972, vyp. 91, pp 12-19 (from RZh-Kibernetika, No 7, Jul 72, Abstract No 7V543)

No abstract

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APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0

USSR

IGNAT'YEVA, T. T., SHIRNITSKAYA, V. N., TIKHONOV, V. I. UDC 577.4

"Utilization of the Standard Simplex Method Program for Optimizing the Distribution of the Quarterly Production Program by the Uniformity Criterion"

Tr. Leningr. inzh.-ekon. in-ta (Works of Leningrad Economic Engineering Institute), 1972, vyp. 91, pp 25-27 (from RZh-Kibernetika, No 7, July 72, Abstract No 7V544)

No abstract

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APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0

USSR

UDC: 616.981.57-085.835.3

RATNER, G. L., NENASHEV, A. A., SVECHNIKOVA, E. L., and SHIRNITSKIY, V. V., Department of Faculty Surgery, Kuybyshev Medical Institute imeni D. I. Ul'yanova

"Hyberbaric Oxygen Therapy of Anaerobic Infections (Communication I)"

Moscow, Khirurgiya, No 1, Jan 71, pp 39-44

Abstract: Eleven patients, most of whom were in serious condition because of gas gangrene resulting from careless primary surgery, were given hyperbaric oxygen treatments before surgery and, in cases where the infection flared up, after surgery. All of the patients recovered. Three amputations were performed, not as a result of the infection, but because the extremity was nonviable due either to injury to major blood vessels or to functional insufficiency of the extremity resulting from extensive skin and muscle defects. Several of the cases are discussed in detail.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0

USSR

UDC: 536.24:532.526

KUDRYASHEV, D. I., SMIRNOV, A. A., MEN'SHIKH, N. L.

"Approximate Solution of Problems on Heat Exchange and Drag in the Case of Flow Around a Sphere at Reynolds Numbers of $1 < R_\infty < 100$"

Tr. Kuybyshev. aviats. in-t (Works of Kuybyshev Aviation Institute), 1971, vyp. 35, pp 28-41 (from RZh-Mekhanika, No 9, Sep 72, Abstract No 9B906)

Translation: Approximate formulation of the problem is based on introducing regions of hydrodynamic and thermal influence. By this is meant regions of finite size in which the normal component of velocity is taken as equal to zero, potential flow takes place on the outer boundary of the first region, and the temperature on the boundary of the second region is equal to that of the oncoming flow. With additional assumptions, the problem breaks down into two independent problems: dynamic and thermal, which are solved approximately on the basis of integral relations of momenta and energy. As a result, analytical formulas are derived for calculating the overall coefficient of friction drag, the overall Nusselt number, and the average surface temperature of the sphere. Bibliography of 16 titles.

V. A. Bashkin.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0

USSR

UDC 534.232.082.73.001.5

DEMIDOV, V.P., MARTYNOV, V.F., MOCHALOV, B.F., SMIRNOV, A.A.

"Electric Impedance Of A Film Piezo Converter"

Radiotekhnika i elektronika, Vol XVII, No 3, Mar 1972, pp 648-652

Abstract: The impedance of experimental specimens of piezo converters based on CdS is studied by direct methods in the 200-800 MHz range, in order to determine the coefficient of electromechanical coupling, K, of the film. Measurements conducted in pulse and continuous regimes are described. The authors are grateful to N.I. Fokin and B.L. Bobikov for assistance in the work. 2 fig. 7 ref.
Received by editors, 22 Oct 1970.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0

USSR

UDC 648.7:599.323.4

SMIRNOV, A. A., LOBACHEV, V. S., and DENISOVA, A. Y., Chair of Vertebrate Zoology, Moscow State University imeni M. V. Lomonosov, Moscow

"Effect on the Reproductive Capacity of Great Gerbils of Treatment of Plants in Their Settlements With Sevin"

Moscow, Nauchnyye Doklady Vysshey Shkoly, Biologicheskiye Nauki, No 3, 1971, pp 29-33

Abstract: In an area 100 km east of the city of Aral'sk, plants in great gerbil (Rhombomys opimus Licht.) settlements were sprayed with sevin in the amount of 0.5 g/m^2. The consumption of plant feed containing sevin, which was preserved for long periods of time in the animals' feed storage chambers, reduced the total number of embryos increased the number of resorbed embryos, and delayed fertilization of females as well as the time of exit of young animals from the burrows, so that the young animals lacked fresh plant food, which was no longer available during the hot weather. When the settlement area was treated with sevin, the number of animals in the settlements was reduced by a factor close to two and the number of inhabited settlements decreased. Introduction of sevin into the burrows of the great gerbil in large doses may be a method of controlling these animals in plague foci that

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USSR

SMIRNOV, A. A., et al., Nauchnyye Doklady Vysshey Shkoly, Biologicheskiye Nauki, No 3, 1971, pp 29-33

is preferable to dusting of the burrows with DDT combined with spreading bait poisoned with zinc phosphide on the surface, there methods are being used now. The delayed action of sevin as compared with that of zinc phosphide is of advantage, because sevin is spread by the animals throughout the burrows. Sevin would exert its effect in the burrows in locations in which the fleas hatch and concentrate.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0

1/2 020 UNCLASSIFIED PROCESSING DATE--11SEP70

TITLE--DIFFUSION OF INTERSTITIAL ATOMS IN METALS WITH A B.C.C. LATTICE VIA THE OCTAHEDRAL AND TETRAHEDRAL INTERSTICES -U-

AUTHOR--SMIRNOV, A.A.

S

COUNTRY OF INFO--USSR

SOURCE--UKRAIN. FIZ. ZHUR., JAN. 1970, 15, (1), 163-165

DATE PUBLISHED----JAN70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--PHYSICAL DIFFUSION, IRON ALLOY, CARBON, DIFFUSION COEFFICEINT, CRYSTAL LATTICE STRUCTURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1989/1178 STEP NO--UR/0185/70/015/001/0163/0165

CIRC ACCESSION NO--AP0107654

UNCLASSIFIED

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2/2 020 UNCLASSIFIED PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0107654

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DIFFUSION OF INTERSTITIAL ATOMS BY WAY OF THE OCTAHEDRAL AND TETRAHEDRAL INTERSITICES IN B.C.C. METAL IS DISCUSSED THEORETICALLY AND A PRACTICAL EXAMPLE IS GIVEN FOR THE CASE OF C ATOMS IN ALPHA FE. THE COEXISTENCE OF THE TWO TYPES OF INTERSITICES CAUSES THE DIFFUSION CHARACTERISTIC (LOG D-T PRIME NEGATIVE1) TO DEVIATE APPRECIABLY FROM ITS NORMAL LINEAR FORM. AN EXPERIMENTAL DIFFUSION CHARACTERISTIC EXHIBITING SUCH DEVIATIONS CONSTITUTES AN INDICATION OF THE FACT THAT THERE ARE TWO TYPES OF STABLE POSITIONS OF EQUILIBRIUM FOR INTERSTITIAL ATOMS TO OCCUPY IN THE CORRESPONDING LATTICE.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0

ELECTRONICS

USSR Microelectronics UDC: 534.232.082.73-8

BRITSYN, K. I., DEMIDOV, V. P., MARTYNOV, V. P., MOCHALOV, E. F., SMIRNOV, A. A., and IVANOV, L. A.

"Studying Thin-Film CdS-Piezo-Converters"

Moscow, Radiotekhnika i Elektronika, Vol. 15, No 9, 1970, pp 1937-1944

Abstract: The authors present the results of the study of CdS-piezo-converter test specimens vaporized onto Al_2O_3. Basic converter characteristics are calculated and it is shown that the frequency characteristic depends as much on the relationships between the electrical impedances of a converter and the measuring tract as it does on the relationships between the mechanical impedances of cadmium sulfide and the material of an acoustic line. A shift in the least loss point is predicted for CdS on Al_2O_3 with respect to mechanical resonance frequency. This shift makes it possible to vary the band width and the position of the least loss point completely by electrical methods. A simple equivalent converter circuit proposed by the authors makes it readily possible to estimate its harmonization with the measuring tract and to determine the aspect of the frequency characteristic for various methods of excitation. The experimental converter specimens yielded a loss in the order of 30 db for a double conversion with a band of approximately 35 percent. The minimal loss point shifts toward the lower frequency region in comparison with the acoustic resonance point. The experimental and theoretical data are in good agreement. The loss values presented are not minimal and can be reduced more using

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USSR

BRITSYN, K. I. et al., Radiotekhnika i Elektronika, Vol. 15, No 9, 1970, pp 1937-1944

supplementary matching equipment. The original article has six figures, 12 formulas, and nine bibliographic entries.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0

USSR

S

KRAVCHENKO, V. N., POGORELYY, O. N., SMIRNOV, A. A., SOSKIN, M. S.

"Concerning the Nature of Constrained Radiation Spectra of Organic Molecules"

Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, Vol 34, No 6, 1970, pp 1,294-1,296

Abstract: A study was made of the generation spectra of a solution of rhodamine 6Zh in isoamyl alcohol, pumped by the second radiation harmonic of a neodymium glass laser. With purely longitudinal pumping, a study was made of powerful forced radiation in a cuvette with Brewster faces without supplementary mirrors as well as with one mirror. The bright-line structure of the spectra was studied, and the mechanisms of its origin are discussed. The interaction of generation at various sectors of the working band of luminescence was studied by means of an adjustable dispersion resonator, simultaneously tuned to several frequencies.

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RSFSR, USSR

Schedule of Defense of Dissertations in Moscow Area Institutions

Rpt 12 Mar 71

/Cont'd from Card 1, see LOGINOVA, L. I., same date/

On 22 Mar 71 at Moscow State University im M. V. Lomonosov (Facilities of Biology-Soil Sciences Dept in Lenin Hills) the degree of Candidate of Biological Sciences will be sought by

MAKSIMOVA, Ye. M., on topic, "Processing of Visual Signal at Level of Horizontal Retina Cells;"

YEGOROV, A. M., "Study of Quaternary Structure of Macroglobulins of Man,"

BALICHEVA, L. V., "Structural and Histochemical Changes in Liver of Animals Which Are Tumor-Carriers," and

SMIRIN, Yu. M., "Spatial Structure and Dynamics of Populations of Small Timber Rodents in Moscow Oblast." On 22 Mar 71 at the Moscow Aviation Technological Institute (Auditorium, Petrovka, 27) the degree of Candidate of Technical Sciences will be sought by

POLYAKOV, V. L., on topic, "Research of Residual Stresses Which Arise in Filament-Reinforced Systems." At the Central Mathematics-Economics Institute, AS USSR (Leninskiy Prospekt, 14, Bldg 1) on 22 Mar 71

POLTEROVICH, V. M., will seek the degree of Candidate of Physical-Math Sciences on the topic, "Mathematical Models of Redistribution of Resources," and

KAPLAN, G. A., will seek the degree of Candidate of Technical Sciences on the topic, "Certain Problems of Development of System of Controlling Compounding of Commodity Gasolines." At Moscow Engineering Physics Institute (Moskva, M-409, Kashirskoye Shosse, 1) on 22 Mar 71

SMIRNOV, A. A., will seek the degree of Cand of Tech Sci on topic, "Research of Work of Adhesion of Alkali Metals."

/Cont'd on Card 3, see VIKTOROV, A. A., same date/

Leninskoye Znamya, 12 Mar 71, p 4, cols 3-4

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0

172 011

UNCLASSIFIED

TITLE--A. I. HERTZEN AND PROBLEMS OF PSYCHOLOGY -U-

PROCESSING DATE--23OCT70

AUTHOR--SMIRNOV, A.A.

COUNTRY OF INFO--USSR

SOURCE--VOPROSY PSIKHOLOGII, 1970, NR 3, PP 25-33

DATE PUBLISHED-------70

SUBJECT AREAS--BEHAVIORAL AND SOCIAL SCIENCES

TOPIC TAGS--PERSONALITY, MENTAL PROCESS, MASS PSYCHOLOGY, EDUCATIONAL POLICY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3001/0806

STEP NO--UR/0402/70/000/003/0025/0033

CIRC ACCESSION NO--AP0126488

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0

011

CIRC ACCESSION NO--AP0126488 UNCLASSIFIED

PROCESSING DATE--23OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PAPER IS WRITTEN IN CONNECTION WITH THE CENTENARY OF DEATH OF A. I. HERTZEN. THE AUTHOR DOES NOT CHARACTERIZE THE ACTIVITIES OF HERTZEN AS A WHOLE AND ITS SIGNIFICANCE FOR PSYCHOLOGICAL SCIENCE BUT POINTS OUT ONLY SOME THE HERTZEN'S MOST IMPORTANT THESES CONCERNING PROBLEMS OF PSYCHOLOGY. AN ACCOUNT IS GIVEN OF THE HERTZEN'S MATERIALISTIC UNDERSTANDING OF THE NATURE OF THE MIND, OF THE IMPORTANCE OF THE IDEA OF DEVELOPMENT, OF THE NECESSITY OF HISTORICAL APPROACH TOWARDS THE STUDY OF CONSCIOUSNESS. THE HERTZEN'S MATERIALISTIC INTERPRETATION OF THE RELATIONSHIP BETWEEN SENSUAL COGNITION AND RATIONAL ONE, BETWEEN THOUGHT AND WORD IS SHOWN. THE PROBLEM OF THE ACTIVITY OF COGNITION PROCESSES, OF THE ROLE OF ENVIRONMENT IN THE DEVELOPMENT OF MAN, OF THE RELATIONS BETWEEN PERSONALITY AND SOCIETY, AND THE HERTZEN'S ATTITUDE TOWARD THE PROBLEM OF THE FREEDOM OF WILL ARE ALSO CONSIDERED IN THE PAPER.

FACILITY: INSTITUT OBSHCHEY I PEDAGOGICHESKOY PSIKHOLOGII APN SSSR, MOSCVA.

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USSR

UDC 615.849.2.015.25.038

VLADIMIROV, V. G., DZHARAK'YAN, T. K., BERLIN, L. B., GOLUBENTSEV, D. A., and SMIRNOV, A. D., Military Medical Academy imeni S. M. Kirov, Leningrad

"Some Criteria for Evaluating the Effectiveness of Radioprotective Agents in Man"

Moscow, Meditsinskaya Radiologiya, Vol 16, No 9, Sep 71, pp 54-60

Abstract: Since cystamine hydrochloride effectively protects mice from radiation sickness, the dose given per unit of body surface was extrapolated to the average size of man, and a dose of 3 g was calculated (taken internally) as the probable, optimum protective dose for man. Tolerable doses of cystamine (0.8-1.2 gm) given to patients with pulmonary or pelvic tumors prior to single local treatments with x-rays and gamma-rays reduced the number of chromosome aberrations in myeloid cells and lymphocytes in the peripheral blood by 40%. Evidence indicates that a prophylactic intake of the tolerable dose of cystamine hydrochloride will significantly protect men in cases of accidental exposure to ionizing radiation.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0

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UNCLASSIFIED

TITLE--HEMODYNAMICS OF THE MINOR CIRCULATORY CIRCUIT IN PATIENTS WITH ACUTE PULMONARY ABSCESSES TREATED BY A METHOD OF REGIONAL INFUSION OF

PROCESSING DATE--09OCT70

AUTHOR-(05)-UGLOV, F.G., SMIRNOV, A.D., DANILOV, L.N., VEGIAZARYAN, V.F., GUSAROV, G.V.

COUNTRY OF INFO--USSR

SOURCE--VESTNIK KHIRURGII IMENI I. I. GREKOVA, 1970, VOL 104, NR 5, PP 13-17

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--HEMODYNAMICS, RESPIRATORY SYSTEM DISEASE, LUNG, ANTIBIOTIC

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1990/1023

STEP NO--UR/0589/70/104/005/0013/0017

CIRC ACCESSION NO--AP0109174

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0

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CIRC ACCESSION NO--AP0109174 PROCESSING DATE--09OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. HEMODYNAMIC CHANGES IN THE MINOR CIRCULATORY CIRCUIT IN PATIENTS WITH PULMONARY ABSCESSES TREATED BY A METHOD OF REGIONAL INFUSION OF ANTIBIOTICS IN THE PULMONARY ARTERY TRUNK OR ITS CORRESPONDING BRANCH HAVE BEEN STUDIED, USING A METHOD OF THERMODILUTION. TOWARD THE END OF TREATMENT MINUTE VOLUME IN THE RIGHT VENTRICLE RETURNED TO VALUES COMMON FOR SUCH PATIENTS. WHILE OTHER HEMODYNAMIC INDICES IN THE MINOR CIRCULATORY CIRCUIT TO THE LAST DAY OF THERAPY USING THIS METHOD ALSO REDUCED OR SHOWED A TENDENCY TO NORMALIZATION. THE MENTIONED CHANGES IN HEMODYNAMIC INDICES CORRESPONDED TO CONSIDERABLE IMPROVEMENT OR COMPLETE ABORTION OF THE LOCAL PROCESS. FACILITY: VSESOYUZNOGO N-I INSTITUTA FUL'MONOLOGII MINISTERSTVA ZDRAVOOKHRANENIYA SSSR.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0

USSR

UDC 621.039.5

VOPOB'YEVA, V. G., D'YACHENKO, P. P., KUZ'MINOV, B. L., SERGACHEVA, A. I., SMIRENKINA, L. L.

"Recommended Power Dependence following from Analysis of the Energy Balance during Fission"

Tr. trekhstoron. Sov.-Bel'g.-Gollandsk. simpoziuma po nekotorym problemam fiziki bystrykh reaktorov (Works of the Three-Way Soviet-Belgian-Dutch Symposium on some Problems of Fast Reactor Physics), 1970, Vol 1, Moscow, 1970, D-24, pp 1-8 (from RZh-Elektrotekhnika i energetika, No 7, Jul 71, Abstract No 7U137)

Translation: The dependence of the number of secondary fission neutrons $\bar{\nu}$ for Th^{232}, U^{235}, U^{238} formed under the effect of neutrons with an energy up to 6 megaelectron volts was established on the basis of analyzing a large number of experimental data. A formula is presented which establishes the energy dependence of $\bar{\nu}$. Experimental data on the fission energy of Np^{237}, U^{235}, Th^{232}, U^{238} under the effect of neutrons with an energy up to 6 megaelectron volts are presented. There are 2 illustrations and a 10-entry bibliography.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0

Stress Analysis and Stability Studies

UDC 624.1 + 622.258 + 626.131

USSR

A. A. VOVK, G. I. CHERNYY, A. G. SHIRNOV

Deformirovaniye szhimayemykh sred pri dinamicheskikh nagruzkakh (Deformation of Compressible Media Under Dynamic Loads), Kiev, "Naukova dumka", 1971, 175 pp, biblio, illus, 1,000 copies printed

The monograph considers the processes of deformation and irreversible deformation of loose materials. Results are given of theoretical studies of the dynamics of inelastic compressible media and the propagation of detonation waves in naturally deposited soils and research results on the measurement of deformation fields within the zones of influence of detonations. Equations of state of cohesive soils and metal powders are obtained experimentally for impulsive loading and various time parameters. The criteria for correspondence of experimental and theoretical research are discussed.

The monograph is intended for use by engineering-technical workers, teachers and students at the VUZ level.

The authors were helped by Academician O. S. Ilsarenko in the work.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0

A.A.Vovk, G. I. Chernyy, A. G. Smirnov, Deformation of Compressible Media Under Dynamic Loads, Kiev, 1971, 175 pp, cont'd

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Chapter I. The Patterns of Deformation of Compressible Media 5

Chapter II. Experimental Studies of the Propagation of Elastic and Elastic Compression Waves During Explosions With Axial Symmetry 44

Chapter III. Study of the Deformation of Certain Loose Materials 83

Chapter IV. Fluctuation of Filtration and Other Characteristics of Cohesive Soils during Deformation. 135

Chapter V. Some Methods and Means of Varying the Parameters of Stress Waves 155

Bibliography 172

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0

UDC 622.235.5

USSR

VOVK, A. A., KUZ'MENKO, A. A., KRAVETS, A. G., and SMIRNOV, A. G.,
Institute of Geotechnical Mechanics of the Academy of Sciences of
the Ukrainian Soviet Socialist Republic

"On Investigation of the Residual Deformation Zone in Grounds
by Seismometric Methods"
(Presented by Polyakov, N. S., Member of the Academy of Scien-
ces of the Ukrainian SSR)

Kiyev, Dopovidi Akademii Nauk, Seriya A, Ukrainian SSR, No 10,
1971, pp 951 —954

Abstract / Ukrainian article / : A seismometric method of inves-
tigating the neighboring zone of the explosion effect is descri-
bed. By this method, irreversible deformations of the ground can
be determined at distances exceeding by 3 —4 times the dimensi-
ons of the zone of residual deformations. The latter are deter-
minable by other methods. Two illustr., three tables, one biblio.
ref.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0

Acc. Nr. AP3046227

Abstracting Service: 5/70 INTERNAT. AEROSPACE ABST.

Ref. Code: UR0077

A70-23175 Special features of the behavior of high-resolution emulsions in holography using a pulsed radiation source (Osobennosti povedeniia vysokorazreshaiushchikh emul'sii pri golografirovanii s ispol'zovaniem impul'snogo istochnika izlucheniia). D. I. Stasel'ko and A. G. Smirnov. *Zhurnal Nauchnoi i Prikladnoi Fotografii i Kinematografii*, vol. 15, Jan.-Feb. 1970, p. 66-68. In Russian.

Results of experiments carried out to determine the sensitivity of Soviet Mikrat VR emulsions used to obtain high-quality pulsed holograms. It is found that the Soviet emulsions tested are distinguished by both high sensitivity and small deviations from the reciprocity law. A specially high sensitivity and small deviations from the reciprocity law were noted in the case of laboratory specimens of Mikrat VR emulsion sensitized by dye No. 3912. The sensitivity of these plates during Q-switching was found to exceed the sensitivity of Kodak 649-F plates more than six hundredfold and varied only by a factor of 2 upon switchover to free laser generation, while Kodak 649-F plates varied by a factor of 8 upon switchover to free laser generation. However, industrial specimens of Mikrat VR emulsion were found to be characterized by considerably less sensitivity than laboratory specimens and by large deviations from the reciprocity law. An attempt is made to ascertain the reason for this discrepancy.

A.B.K.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0

USSR UDC: 535.2+535.317.1

STASEL'KO, D. I., VORONIN, V. B., SMIRNOV, A. G.

"Holographic Method of Measuring Spatial Coherence Functions"

Leningrad, Optika i Spektroskopiya, Vol 34, No 3, Mar 73, pp 561-566

Abstract: The authors evaluate the accuracy and resolution of a holographic method of measuring functions of spatial coherence. It is shown that the method can be used to measure the complete spatial coherence function of a laser with a precision competitive with that of conventional interference methods without sacrificing spatial resolution. The method is used to study the spatial coherence of a pulse ruby laser. It is found that the field of emission on the end of the laser in multimode operation is coherent within each of the intensity spots, and that the coherence function is "stepped". The authors thank Yu. N. Denisyuk and G. V. Papayan for discussing the work.

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USSR

UDC: 533.6.013.42

SMIRNOV, A. I., et al, Doklady Akademii nauk SSSR, No 6, 1973, pp 1314-1316

the rod and the plate, the damping may be neglected under practical conditions; for the cylindrical shell, it is an important factor, especially for long and thick shells.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0

USSR UDC 612.172:612.592.014.426

SHIRNOV, A. I., and VINOKUROVA, I. YU., Physiology Group, Academy of Medical Sciences USSR; Institute of Normal and Pathological Physiology, USSR Academy of Medical Sciences

"The Functional Relationship between Specific Musculature and Myocardium of Ventricles of Isolated Hearts from Warmblooded Animals After Cooling to -4°C and -10°C in an Electromagnetic Field"

Moscow, Byulleten' Eksperimental'noy Biologii i Meditsiny, Vol 71, No 3, Mar 71, pp 3-6

Abstract: To study the ability of the heart to resume its intrinsic rhythm after exposure to deleterious factors, 52 hearts isolated from rabbits and white rats were cooled with carbon dioxide to -4°C and -10°C. During the 15-20 min of exposure to cold, a 50 HZ, 360-600° ersted magnetic field was maintained in the chamber with 32 experimental hearts, while no such field was created in the chamber with the remaining 20 control hearts. The organs were then warmed to 38-39°C with Ringer-Locke solution, and electrograms and mechanograms were recorded. None of the control hearts resumed beating; tissue death was presumably caused by crystallization of intra- and extracellular water. Five of the 32 experimental hearts did not survive the test. 1/2

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0

USSR

SMIRNOV, A. I., and VINOKUROVA, I. YU., Byulleten' Eksperimental'noy Biologii i Meditsiny, Vol 71, No 3, Mar 71, pp 3-6

Rhythmic contractions of the specific musculature (conductive system) were observed in nine hearts, while myocardial contractions of various degrees were recorded in 18 hearts. In the six hearts which resumed complete activity, the first to recover were the two atria, then the right ventricle, and finally the left ventricle. It was concluded that the synaptic connection between the pacemaker and the atrial myocardium was relatively most stable, while that between the left bundle branch and the left ventricular myocardium was most susceptible to injury.

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0

USSR 5 UDC: 612.172.5.014.43

SMIRNOV, A.I. and VINOKUROVA, I.YU., Physiology Group, Academy of Medical Sciences SSSR Institute of Normal and Pathological Physiology, Academy of Medical Sciences USSR

"Automatism of the Specific Muscles of the Ventricles in Isolated Dog Heart After Prolonged Cooling to 0-4°C"

Moscow, Byulleten' Eksperimental'noy Biologii i Meditsiny, No 2, 1970, pp 7-9

Abstract: Experiments on isolated dog hearts kept in the cold (0-4°C) for 7-10 days and periodically heated for 2-3 hours showed that the different portions of the specific muscles vary in functional resistance. Between the 5th and 7th days, irreversible fibrillation of the terminal branches of the left stalk of the bundle of his set in, with arrhythmic contractions of the higher lying branches, and rhythmic contractions of the stem part. Extinction of the automatism of the specific muscles began in the small branches of the stalk at the apex of the heart, and gradually extended to the base. The last manifestation of automatism was irreversible fibrillation of the base of the left stalk. Thus, the specific muscles characterized by automatism exhibit all the forms of muscular activity: rhythmic contraction, arrhythmia, and fibrillation.

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XII-9. POSSIBILITIES OF CONTROLLED CREATION OF COMPACT EPITAXIAL STRUCTURES

[Article by D. I. Bilenko, Yu. N. Galishnikova, A. I. Smirnov, Saratov; Novosibirsk, III Simposium po Protsessam Rosta i Sinteza Poluprovodnikovykh Kristallov i Plenok, Russian, 12-17 June 1972, p 172]

The further development of epitaxial technology is connected to a great extent with the growth of complex structures in which selectively etched regions of the specimen filled with layers with different alloying levels and different types of alloying admixture are created in a single technological process. The realization of such integral processes combining a number of technological operations is essentially facilitated on application of control methods insuring information about the properties of the structure directly during the course of obtaining it. Such control methods are important for the study of kinetics and mechanisms of epitaxial growth.

The method of determining the thickness of the grown or etched layer which we developed for gas transport methods of obtaining epitaxial structures is used for controlling the deposition of the layers given with respect to thickness in selectively etched regions of the crystal. Knowledge of the instantaneous growth rate (etching rate) and the thickness of the deposited (etched) layer at a given point in time permitted these process parameters and the structures to be kept as given. The knowledge of the growth rate, the thickness of the grown layer and the temperature of realizing the process permitted growth of multilayered silicon structures with given parameters of the inside layer. The correction of the thickness of the inside layer was made considering the formation of transition layers during the growth process. The performed experiments confirmed the possibilities of controlled realization of the integral process of the creation of complex epitaxial structures. Information was also obtained on the kinetics of the deposition of the silicon layers in individual stages of the process.

SMIRNOV, A.I.

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002203110002-0

EQUIPMENT

Aeronautical

USSR

UDC: 629.7.018.1

KISLYKH, V. V., SIDEL'NIKOV, A. Ye., SMIRNOV, A. I.

"A Method of Creating a Hypersonic Flow"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 7, Mar 72, Author's Certificate No 329432, Division G, filed 25 May 70, published 9 Feb 72, p 167

Translation: This Author's Certificate introduces a method of creating a hypersonic flow in a pulse installation such as an adiabatic compression installation. The method consists in using the internal energy of dense gases fed to the main chamber as a result of piston compression, and the thermal energy released during an isothermal reaction in a working gas of the H_2O or $H_2O + N_2$ type. As a distinguishing feature of the patent, the time of conducting an experiment is extended and the effect of high-temperature aggressive products on the walls of the reaction chamber is eliminated by supplying energy to the main chamber to produce a pressure of 3 000-5 000 gauge atmospheres and a temperature higher than the inversion temperature of the working gas (700-900°K) but 50-100°C below the initiation temperature for an isothermal reaction (1200°K), after which the gas is throttled down

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in an auxiliary low-pressure chamber at a choke factor of 6-10 resulting in combustion of the working gas in this chamber. The reaction products with a temperature of 2500-3000°K are then fed through a nozzle into the working section of the installation.

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