USSR

UDC 546.791.6-386

ELLERT, G. V., TSAPKINA, I. V., BARANOVA, L. P.

"Mixed Crystals of Compounds with Complex Cations $[UO_2 4CO(NH_2)_2 H_2O]_2 H_2O]^{2+}$ and $[UO_2 5CO(NH_2)_2]^{2+}$"

Moscow, Zhurnal Neorganicheskoy Khimii, Vol 15, No 7, 1970, pp 1891-1893

Abstract: This study deals with synthesis of compounds based on carbamide complexes of uranyl. The investigation concerned reactions of aquotetracarbamidouranyldinitrate $[UO_2 4KaH_2O](NO_3)_2$ (I) Ka-$Co(NH_2)_2$ and pentacarbamidouranyldinitrate $[UO_2 5Ka](NO_3)_2$ (II) with sodium halogenides NaH (H = Cl, Br, I) in aqueous and alcoholic solutions. It was found that in aqueous solutions only one nitrate ion in (I) is replaced by a halogen ion. Here the nitratoiodides and nitratobromides form mixed crystals of composition $[UO_2 4KaH_2O]H_x \cdot (NO_3)_{2-x}$ (H=I, Br; x = 0-1). In similar conditions the chloridonitrate forms two individual compounds $[UO_2 4KaH_2O]ClNO_3$ and $[UO_2 4KaH_2O]Cl_{0.5}(NO_3)_{1.5}$. In alcoholic solutions two nitrate ions can be replaced by one iodine ion in (I), yielding $[UO_2 4KaH_2O]I_2$ and $[UO_2 4KaH_2O]I_x (NO_3)_{2-x}$ (x = 1.4-2). In (II), both in alcoholic and aqueous solutions, both

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ELIERT, G. V., et al., Zhurnal Neorganicheskoy Khimii, Vol 15, No 7, 1970, pp 1891-1898

nitrate ions can be replaced by iodine ions. Formation of nonstoichiometric nitratoiodides of composition $[UO_2]5Ka(NO_3)_{2-x}$ (x = 1.43-1.27) was observed. A compound of composition $[UO_2]5Ka]-NO_3Cl$ was isolated.

2/2

Acc. Nr. AT0045338

Abstracting Service: CHEMICAL ABSTR 5-70 B

Ref. Code UR0020

90949e **Nature of active centers during anionic polymerization.** Polyakov, D. K.; Baranova, N. I.; Gantmakher, A. R.; Medvedev, S. S. (Fiz.-Khim. Inst. im. Karpova, Moscow, USSR). *Dokl. Akad. Nauk SSSR* 1970, 190(1), 148-50 [Phys. Chem] (Russ). The electronic absorption spectra corresponding to the ion pairs and free carbanions of the 1,1-diphenylbutyllithium (I)-tetrahydrofuran (II), 1,1-diphenylpolyisoprenyllithium (III)-II, and 9,10-dihydroalkylanthrancenyllithium (IV)-II systems was studied over a broad range of concns. by a combined spectraphotometric and conductometric method (P., 1963, 1965, 1967). At low I and II concns. ($<10^{-3}$ mole/l.), the dependence of the equiv. elec. cond. on concn. followed Ostwald's law. The dissocn. consts. of the "living" ends of the I and II systems in this region were 3.5×10^{-6} and 13.3×10^{-6} mole/l., resp., and were const. $<10^{-3}$ moles/l. The mobility of the carbanions decreased from 88.5 to 15.9 cm²/ohm equiv. on passing from I to II carbanions. At I and II concns. $>10^{-3}$ mole/l., deviations from Ostwald's law were obsd. The electronic spectra in the region of free ion predominance (I and II concns. $\sim 4 \times 10^{-5}$ mole/l.) and ion pair predominance ($\sim 3 \times 10^{-4}$ mole/l.) were identical, so the position of the max. absorption band did not change on passing

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from free carbanions to ion pairs. Similar results were obtained with III. The same max. (445 mμ) was obsd. in the electronic absorption spectra for the free ions and the ion pairs of this system. The identical electronic spectra for the free ions and ion pairs in all the systems studied indicated that changing the energy of electrostatic interaction of the ion pair components has little effect on the absorption spectra. Changing the gegenion or solvent in anionic systems can have a decisive effect on the kinetics of the process, but has little effect on the structure and compn. of the copolymers.

DBJR

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19780266

1/2 014 UNCLASSIFIED PROCESSING DATE--11DEC70

TITLE--DESAMINATION OF AMP IN HEAVY AND LIGHT FRACTIONS OF MYOCARDIUM MICROSOMES -U-

AUTHOR-(03)-MECHIPORENKO, Z.YU., BARANCVA, N.P., PISKAROV, V.B.

B

COUNTRY OF INFO--USSR

SOURCE--UKRAYINS'KIY BIOKHIMICHNIY ZHURNAL, 1970, VOL 42, NR 3, PP 329-334

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--MYOCARDIUM, CELL PHYSIOLOGY, MICROSOME, ENZYME ACTIVITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY FICHE NO----FD70/605043/E02 STEP NO--UR/0300/70/042/003/0329/0334

CIRC ACCESSION NO--AP0142904

UNCLASSIFIED

2/2 014 UNCLASSIFIED PROCESSING DATE--11DEC70

CIRC ACCESSION NO--AP0142904

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE INVESTIGATIONS CONDUCTED EARLIER SHOWED THAT IN MICROSOMES AS COMPARED WITH OTHER CELL ELEMENTS OF MYOCARDIUM, THE ACTIVITY OF ENZYMES WHICH TAKE PART IN DEZAMINATION OF AMP DIRECTLY AND THROUGH THE STAGE OF ADENOSINE FORMATION IS THE MOST INTENSIVE. HYDROLISIS OF AMP WAS STUDIED BY MEANS OF TWO FRACTIONS OF THE RABBIT MYOCARDIUM MICROSOMES, THE HEAVY FRACTION (18000-30000 G) AND THE LIGHT ONE (30000-105000 G). THE ANALYSIS OF THE PRODUCTS OBTAINED WITH THE EFFECT OF THE FRACTIONS ON AMP SHOWED THAT THE FORMATION OF ADENOSINE OCCURS MORE INTENSIVELY IN THE PRESENCE OF THE HEAVY FRACTION AND THAT OF INOSINE ACID, IN THE PRESENCE OF THE LIGHT FRACTION OF MICROSOMES. ADENOSINE TURNS INTO INOSINIC, AND THE LATTER, INTO HYPOXANTHINE IN BOTH FRACTIONS WITH APPROXIMATELY THE SAME INTENSITY. THE DATA OBTAINED MAY TESTIFY TO THE FACT THAT IN THE LIGHT MICROSOME FRACTION AMP DESAMINATION OCCURS PREDOMINANTLY DIRECTLY, AND IN THE HEAVY FRACTION, THROUGH THE STAGE OF ADENOSINE FORMATION.

FACILITY: INSTITUTE OF BIOCHEMISTRY, ACADEMY OF SCIENCES, UKRAINIAN SSR, KIEV.

UNCLASSIFIED

1/2 023 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--MECHANISM OF THERMAL DEGRADATION OF AROMATIC POLYIMIDES OF DIFFERENT CHEMICAL STRUCTURES -U-
AUTHOR-(04)-KRASNOV, YE.P., AKSENOVA, V.P., KHARKOV, S.N., BARANOVA, S.A.

COUNTRY OF INFO--USSR

SOURCE--VYSOKOMOL. SOEDIN., SER. A 1970, 12(4), 873-84

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--THERMAL DEGRADATION, POLYIMIDE RESIN, PYROMELLITIC ACID, ACTIVATION ENERGY, MOLECULAR STRUCTURE, CHEMICAL COMPOSITION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/1684 STEP NO--UR/0459/70/012/004/0873/0884

CIRC ACCESSION NO--AP0125305

UNCLASSIFIED

2/2 023 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0125305

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE THERMAL DEGRADATION OF (P,C SUB6 H SUB4 C SUB6 H SUB4 R,P) SUBN, (P,C SUB6 H SUB4 XC SUB6 H SUB4 R,P) SUBN (R IS PYROMELLITDIIMIDO AND X IS O, SO SUB2, CH SUB2, CHPH, OR 1,1,CYCLOHEXYLIDENE), I, OR II (X IS AS ABOVE) GAVE VARIOUS AMTS. OF CO SUB2, CO, H SUB2 O, C SUB6 H SUB6, PHME, HCN, H, AND PHCN. THE ACTIVATION ENERGIES OF DEGRADATION WERE DETD. THE STABILITY OF THE POLYMERS DEPENDED BOTH ON THE NATURE OF X AND THE STRUCTURE OF THE LARGE AROMATIC FRAGMENTS. FACILITY: VSES. NAUCH.-ISSLED. INST. SIN. VOLOKON, KALININ, USSR.

UNCLASSIFIED

1/2 017 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--SPECIFIC HEAT OF AQUEOUS POTASSIUM HYDROXIDE SOLUTIONS AT TEMPERATURES SMALLER THAN 400DEGREES -U-

AUTHOR-(03)-PUCHKOV, L.V., BARANOVA, T.A., LAPIDUS, M.E.

B

COUNTRY OF INFO--USSR

SOURCE--ZH. PRIKL. KHIM. (LENINGRAD) 1970, 43(2), 455-7

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--TEMPERATURE DEPENDENCE, SPECIFIC HEAT, POTASSIUM COMPOUND, HYDROXIDE, SODIUM HYDROXIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1987/0452 STEP NO--UR/0080/70/043/002/0455/0457

CIRC ACCESSION NO--AP0104065

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002200310007-6"

2/2 017 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0104065

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TEMP. DEPENDENCE OF SP. HEAT OF AQ. KOH SOLNS. (5 TO 50 WT. PERCENT KOH) WAS DETD. AT 25 TO 400DEGREES. THE SP. HEAT INCREASES UP TO 100DEGREES, IS PRACTICALLY CONST. UP TO 150DEGREES, AND INCREASES AT TEMPS. GREATER THAN 150DEGREES. DIFFERENCES IN THE SP. HEAT AND TEMP. DEPENDENCE OF KOH AND NAOH ARE DISCUSSED. V. VESELY.

UNCLASSIFIED

USSR UDC: 621.373.826

PODGAYETSKIY, V. M., SKVORTSOV, B. V., TOKAREVA, A. N., PARABANOVA, V. N.

"A Gas-Discharge Flash Tube for Laser Pumping"

USSR Author's Certificate No 313241, filed 20 Jan 70, published 24 Apr 72 (from RZh-Radiotekhnika, No 12, Dec 72, abstract No 12D259P)

Translation: This Author's Certificate introduces a gas-discharge flash tube for laser pumping. The device contains electrode units and an optically transparent envelope filled with the working gas. To increase the effectiveness of pumping a neodymium glass active body, a mixture containing at least two inert gases under a pressure of from 200 to 600 mm Hg is used as the working gas. The following mixtures can be used: a mixture of xenon and krypton in a ratio of $\frac{1}{2}:\frac{1}{2}$ (by volume) under a pressure of 350-450 mm Hg with a discharge gap 11-12 mm in diameter; a mixture of xenon and neon in a ratio of $\frac{3}{5}:\frac{2}{5}$ (by volume) under a pressure of 350-450 mm Hg with a discharge gap 11-12 mm in diameter; a mixture of xenon, krypton and neon in a ratio of $\frac{1}{3}:\frac{1}{3}:\frac{1}{3}$ (by volume) under a pressure of 550-650 mm Hg for a discharge gap diameter of 11-12 mm, or a mixture of xenon and helium in a ratio of $\frac{9}{10}:\frac{1}{10}$ (by volume) under a pressure of 350-450 mm Hg with a discharge gap diameter of 11-12 mm.

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BARANOVA, V. P.

space physiology

SO: JPRS 54366
02 NOV 71

UDC 612.017.2:612.014.47:531.113

STUDY OF SELECTIVITY IN ADAPTATION TO CORIOLIS AND LINEAR ACCELERATIONS

[Article by B. B. Bokhov, V. P. Baranova, and A. A. Guyevi, Moscow, Kosmicheskaya Biologiya i Meditsina, Russian, Vol 5, No 4, 1971, pp 38-42, submitted for publication 8 October 1970]

Abstract: The effect of habituation to one of three tests (including Coriolis and linear accelerations) on tolerance to the other two was studied. The experiments revealed a nonspecific increase in tolerance to those tests to which no adjustment was acquired.

The attention of specialists engaged in vestibular apparatus adaptation has always been directed to selective adaptation to a vestibular stimulus (K. L. Khilov; A. I. Yaroshkiy; Graybiel, et al.). This property is readily detectable if before and after adaptation one uses a test stimulus which differs more or less sharply in its parameters from the training stimulus. In these cases the reaction to the test stimulus is appreciably less weakened than to the training stimulus. It therefore follows that the reaction to the test or to any new labyrinthal stimulus is relatively independent of the preceding training.

At the present time a real need is felt for clarifying the degree of selectivity of adaptation to tests which can be standard in expert medical flight examinations: ACA (accumulation of Coriolis accelerations) (I. I. Bryanov), NACA (normal accumulation of Coriolis accelerations) (S. S. Markaryan), and swinging in Khilov swings. A study of such interrelationships will make it possible to select the optimum stimuli in formating methods for vestibular apparatus adaptation, and in addition, will make it possible to exclude those stimuli to which tolerance can be increased due to repeated exposure to other tests.

In our study the formulated problem was to clarify the degree of selectivity of adaptation to the mentioned vestibular tests.

USSR UDC: 621.315.592

BARANOVA, Ye. K., GUSEV, V. M., and STREL'TSOV, L. N.

"Investigating Radiation Defects in Silicon Irradiated by Lithium Ions by the Infrared Absorption Method"

Leningrad, Fizika i tekhnika poluprovodnikov, No 12, 1972, pp 2399-2400

Abstract: This brief communication presents the results of investigations by the infrared absorption method into radiation defects formed in p-silicon monocrystals by the introduction of lithium ions with an energy of 80 kev in dosage intervals varying from $6 \cdot 10^{13}$ to $3 \cdot 10^{16}$ ions/cm^2. The introduction of the ions was made on ILU-3 equipment by a method described in an earlier paper (V. M. Gusev, et al, PTE, 4, 19, 1969). Transmission spectra of the irradiated specimens in the near infrared region of 0.7 to 2.5 microns were obtained with the double-beam IKS-14 spectrophotometer. A sample spectrum is shown. A curve is plotted showing the change in the spectra caused by the annealing procedures. The authors express their thanks to M. I. Gusev for his advice.

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USSR

UDC 539.216.2.001.5

GUSEV, V. M., GUSEVA, M. I., KURINYY, V. I., TITOV, V. V., TSYPLENKOV, V. S., BARANOVA, Ye. K., STREL'TSOV, L. N.

"Investigation of the Properties of an Oxide Film Obtained by Atomic Oxygen Ion Bombardment of Silicon and Use of Such a Film for Protecting a PN Junction"

Moscow, Radiotekhnika i Elektronika, Vol 16, No 8, Aug 71, pp 1462-1467

Abstract: The paper presents the results of a study of the thickness of oxide films as a function of the conditions of silicon bombardment by atomic oxygen ions, as well as the composition and dielectric properties of the films and the space charge in them. The protective properties of oxide on structures with ion-injected PN junctions are studied. Most of the experiments were done on N-type and P-type silicon with resistivity of 7-10 Ω·cm. The specimens were irradiated in the chamber of the ILU-2 ion accelerator. It was found that the thickness of the oxide film increases in proportion with the energy of the ions and decreases as the ion current density increases. The dielectric strength of the insulating layer was $(3-10)\cdot 10^6$ V/cm. It is shown that the composition of the film depends on subsequent annealing.
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GUSEV, V. M., et al., Radiotekhnika i Elektronika, Vol 16, No 8, Aug 71, pp 1462-1467

By using ion oxidation to protect ion injected PN junctions, the authors were able to synthesize high-voltage low-power diodes with a breakdown voltage of 3.3 kV.

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USSR

UDC 576.311

DEBORIN, G. A., EL'PINER, I. Ye. (Deceased), BARANOVA, V. Z., SOROKINA, A. D., and TONGUR, A. M., Institute of Biochemistry imeni A. N. Bakh, Academy of Sciences USSR, and Institute of Chemical Physics, Academy of Sciences USSR, Moscow

"The Reaction of Tobacco Mosaic Virus With Phospholipid Monolayers Exposed to Ultrasound"

Moscow, Doklady Akademii Nauk SSSR, Vol 198, No 6, Jun 71, pp 1,445-1,448

Abstract: Curves showing the expansion and compression of a monolayer of pure phospholipids (obtained from cattle brain) and of a monolayer of phospholipids with tobacco mosaic virus coincided in shape and values of maximum pressures, suggesting that the virus did not penetrate into the surface film of the phospholipids. On the other hand, curves showing the compressibility of sonicated phospholipids and sonicated phospholipids with tobacco mosaic virus diverged considerably, indicating that the layer of phospholipids was penetrated by the virus. In other words, a monolayer of sonicated phospholipid is capable of incorporating virus particles to form a mixed phospholipid -- virus film. Thus, a change in the condition or structure of a biological membrane (or its individual constituents) can influence its

USSR UDC 621.315.592

BARANOVA, YE. K.

"Study of Radiation-Induced Defects in Ion-Doped Silicon Using Infrared Absorption Spectra"

Leningrad, Fizika i Tekhnika Poluprovodnikov, Vol 6, No 2, 1972, pp 380-382

Abstract: As a result of bombarding single silicon crystals with O^+, Sb^+ and Zn^+ ions, divacancies are formed. In the infrared absorption spectra the divacancies give a characteristic band in the wavelength of $\lambda = 1.8$ microns. Results are presented from investigating the occurrence and annealing of divacancies when irradiating single silicon crystals with B^+, P^+, O^+, Ar^+, Si^+ and N^+ ions. Relations were obtained for the transmission T of the irradiated silicon samples as a function of the wavelength of the incident light in the near infrared region of the spectrum from 0.7 to 1.5 microns. The ion energies and doses were varied from 18 to 80 kiloelectron volts and from 5 to 10^3 microns/cm^2 respectively. The ion current density was 0.5 microamps/cm^2 for n and p-type silicon plates with ρ = 2,000 ohms-cm irradiated from both sides. Example transmission spectra are presented. The absorption band in the $\lambda = 1.8$ micron region caused by divacancies can serve as an indicator for studying the process of annealing of the divacancies and determination of their concentration. The mechanisms leading to this conclusion are explained.
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1/2 009 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--STRATIGRAPHICAL AND GEOMORPHOLOGICAL INVESTIGATIONS FOR NEOTECTONICAL MAPPING, EXAMPLIFIED BY THE USSR NORTH EAST -U-
AUTHOR-(02)-BARANOVA, YU.P., BISKE, S.F.

COUNTRY OF INFO--USSR

SOURCE--GEOLOGIYA I GEOFIZIKA, 1970, NR 3, PP 3-11

DATE PUBLISHED-------70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--STRATIGRAPHY, GEOMORPHOLOGY, GEOLOGIC MAPPING, TECTONICS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1991/0747 STEP NO--UR/0210/70/000/003/0003/0011

CIRC ACCESSION NO--AP0110471
UNCLASSIFIED

2/2 009 UNCLASSIFIED PROCESSING DATE--16OCT70
CIRC ACCESSION NO--AP0110471
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE NECESSARY CONDITIONS FOR ANALYTICAL SYNTHETIC AND COMPLICATED NEOTECTONICAL MAPPING ARE CONSIDERED IN THE PAPER. THE RECENT IDEAS OF SOME INVESTIGATORS ON NORTH EAST NEOTECTONICS AND THEIR COMPARISON WITH NEW DATA ON STRATIGRAPHY ARE ANALYZED. NEW SCHEME OF THE TERRITORY CONTINENTAL DEVELOPMENT STAGES FOR DIFFERENT GEOSTRUCTURAL AREAS IN MESOZOIC AND CENOZOIC IS PROPOSED BASED UPON RECENT DATA ON STRATIGRAPHY AND HISTORY OF RELIEF DEVELOPMENT. FACILITY: IGIG SO AN SSSR, NOVOSIBIRSK.

UNCLASSIFIED

1/2 023 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--MECHANISM OF RADIOSTRONTIUM INTAKE IN POTATO TUBERS -U-

AUTHOR-(02)-MELNIKOVA, M.K., BARANOVA, Z.A.

COUNTRY OF INFO--USSR

SOURCE--AEC-TR-7128, PP 127-42

DATE PUBLISHED-------70

B

SUBJECT AREAS--NUCLEAR SCIENCE AND TECHNOLOGY, BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--STRONTIUM ISOTOPE, RADIATION PLANT EFFECT, PLANT CHEMISTRY, DIFFUSION COEFFICIENT, TEMPERATURE DEPENDENCE, CHEMICAL ABSORPTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1983/1780 STEP NO--UR/0000/70/000/000/0000/0000

CIRC ACCESSION NO--AT0054618

UNCLASSIFIED

2/2 023 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AT0054618

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. INCREASING THE TEMPERATURE FROM 1 TO 35DEGREESC CAUSED NO SIGNIGICANT INTENSIFICATION OF THE PROCESS OF ABSORPTION OF PRIME90 SR BY POTATO TUBERS. DATA ON TEMPERATURE COEFFICIENTS OF THE REACTION OF STRONTIUM ABSORPTION BY THE TUBERS DEMONSTRATED THE NONMETABOLIC NATURE OF THE PROCESS. THE DIFFUSION NATURE OF THE PROCESS WAS INDICATED BY THE DIFFUSION COEFFICIENTS CALCULATED FOR STRONTIUM AND CALCIUM IN THE TUBER. COMPARISON OF THE DATA OBTAINED UNDER VARIOUS EXPERIMENTAL CONDITIONS WITH RESPECT TO TEMPERATURE COEFFICIENTS MADE IT POSSIBLE TO CONCLUDE THAT THE ABSORPTION OF CALCIUM AND STRONTIUM BY POTATO TUBERS IS A PHYSICAL PROCESS, DIFFUSION, AND IS NOT METABOLIC IN NATURE. FACILITY: GOSUDARSTVENNYI KOMITET PO ISPOL'ZOVANIYU ATOMNOI ENERGII SSSR, MOSCOW.

UNCLASSIFIED

1/2 025 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--DISCONTINUITY OF DISPLACEMENTS ALONG RECTILINEAR SECTIONS IN A PLATE WITH A CIRCULAR HOLE -U-

AUTHOR-(02)-LIBATSKIY, L.L., BARANOVICH, S.T.

B

COUNTRY OF INFO--USSR

SOURCE--PRIKLADNAIA MEKHANIKA, VOL. 6, MAR. 1970, P. 80-86

DATE PUBLISHED----MAR70

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

TOPIC TAGS--INTEGRAL EQUATION, VECTOR, APPROXIMATE SOLUTION, CRACK PROPAGATION, STRUCTURE FORM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1995/0871 STEP NO--UR/0198/70/006/000/0080/0086

CIRC ACCESSION NO--AP0116381

UNCLASSIFIED

2/2 025 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0116381

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DISCUSSION OF THE PROBLEM OF THE STRESSED STATE INDUCED AN INFINITE PLATE WITH A CIRCULAR HOLE BY A DISCONTINUITY OF THE DISPLACEMENT VECTOR DERIVATIVE OVER ONE DIAMETER. AN INTEGRAL EQUATION FOR DETERMINING THE DISPLACEMENT DISCONTINUITY IS DERIVED, AND AN APPROXIMATE SOLUTION OF THIS EQUATION IS OBTAINED FOR A DISCONTINUITY IN THE FORM OF TWO IDENTICAL CRACKS EXTENDING FROM THE HOLE. FACILITY: AKADEMIIA NAUK UKRAINSKOI SSR, FIZIKO MEKHANICHESKII INSTITUT, LVOV, UKRAINIAN SSR.

UNCLASSIFIED

USSR

UDC 512.25/.26+519.3:330.115

KUZNETSOV, V. F., BARANOVSKAYA, G. G.

"Algorithm for Solution of One Problem in Distribution of Heterogeneous Resources"

Mat. Metody Issled. i Optimiz. Sistem. Vyp 4 [Mathematical Methods of Investigation and Optimization of Systems, No 4 -- Collection of Works], Kiev, 1970, pp 42-53, (Translated from Referativnyy Zhurnal, Kibernetika, No 6, 1971, Abstract No 6 V538).

Translation: An approximate method is constructed, based on the idea of successive analysis of versions.

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USSR

UDC 51:330.115

BARANOVSKAYA, G. G., KUZNETSOV, V. F.

"Distribution of Dissimilar Resources in Minimization of Time for Completion of Work"

Mat. Metody Issled. I Optimiz. Sistem. Vyp. 3, [Mathematical Methods of Studying and Optimizing Systems, No. 3--Collection of Works], Kiev, 1970, pp 24-31, (Translated from Referativnyy Zhurnal Kibernetika, No 5, 1971, Abstract No. 5V589).

No abstract.

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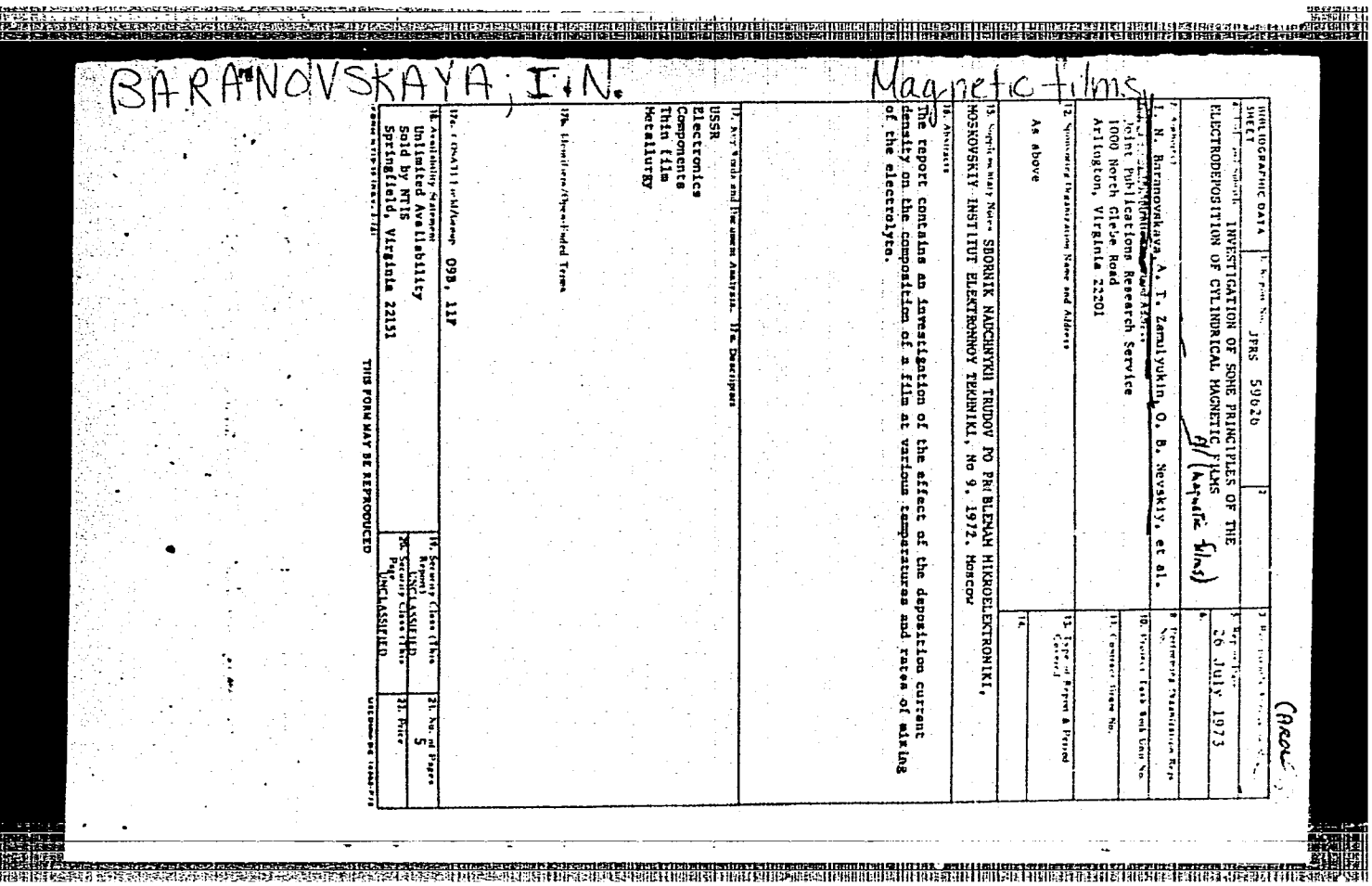

BIBLIOGRAPHIC DATA SHEET

1. Report No. JPRS 59026

4. Title and Subtitle: INVESTIGATION OF SOME PRINCIPLES OF THE ELECTRODEPOSITION OF CYLINDRICAL MAGNETIC FILMS

5. Report Date: 26 July 1973

7. Author(s): L. N. Baranovskaya, A. T. Zamulyukin, O. B. Nevskiy, et al.

8. Performing Organization Rept. No.

9. Performing Organization Name and Address: Joint Publications Research Service, 1000 North Glebe Road, Arlington, Virginia 22201

10. Project/Task/Work Unit No.

11. Contract/Grant No.

12. Sponsoring Organization Name and Address: As above

13. Type of Report & Period Covered

14.

15. Supplementary Notes: SBORNIK NAUCHNYKH TRUDOV PO PRIBLENAM MIKROELEKTRONIKI, MOSKOVSKIY INSTITUT ELEKTRONNOY TEKHNIKI, No 9, 1972, Moscow

16. Abstracts: The report contains an investigation of the effect of the deposition current density on the composition of a film at various temperatures and rates of mixing of the electrolyte.

17. Key Words and Document Analysis. 17a. Descriptors: USSR, Electronics, Components, Thin film, Metallurgy

17b. Identifiers/Open-Ended Terms

17c. COSATI Field/Group 09B, 11F

18. Availability Statement: Unlimited Availability. Sold by NTIS, Springfield, Virginia 22151

19. Security Class (This Report) UNCLASSIFIED

20. Security Class (This Page) UNCLASSIFIED

21. No. of Pages 5

22. Price

THIS FORM MAY BE REPRODUCED

BARANOVSKAYA, I. N.

Magnetic films

(Magnetic films)

USSR

UDC 621.357.7.035.14(088.8)

NEVSKIY, O. B., LOGASHEV, V. V., and BARANOVSKAYA, I. N.

"Galvanic Bath for Producing Cylindrical Magnetic Films"

USSR Author's Certificate No 324309, Filed 16 Jan 70, Published 25 Feb 72 (from Referativnyy Zhurnal -- Khimiya, No 21(II), 1972, Abstract No 21L318P by E. Z. Napukh)

Translation: The patented design of the electrolyzer is intended for preparation of cylindrical magnetic films with a uniform chemical composition. Its feed and pouring chambers are formed by the electrolyzer wall and the anode container, and the cylindrical element with anodes on its external surface is made of hydrophilic material.

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USSR

UDC: 8.74

ARUTYUNOV, A. M., BARDUGIMEOSYAN, R. B.

"Input Devices for the Specialized 'Garni' Computer"

Tr. Vychisl. tsentra AN ArmSSR i Yerevan. un-ta (Works of the Computing Center of the Academy of Sciences of the Armenian SSR and Yerevan University), 1972, 7, pp 140-153 (from RZh-Kibernetika, No 10, Oct 72, abstract No 10V619 [authors' abstract])

Translation: The paper describes magnetic tape input devices designed for input of sentences and a "dictionary". A method is given for constructing an automaton which generates certain input sequences.

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USSR

BARANOVSKIY, A. L., VASIL'YEV, A. V., PAKHAR'KOVA, A. I.

"Electrostimulator"

Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 17, 1973, USSR Author's Certificate No 376097, p 16

Translation: An electrostimulator is introduced which contains a low-frequency stimulating pulse generator and an isolating device comprising a high-frequency generator, a low-capacitance transformer and a low-frequency filter. The device is distinguished by the fact that in order to decrease the artefact, it contains a modulator-breaker connected through a square pulse shaper to the high-frequency generator, the signal input of the modulator-breaker is connected to the low-frequency stimulating pulse generator, and the output is connected through a linear amplifier to the primary winding of the low-capacitance transformer, the square pulse shaper is connected, in addition to the primary winding of the additional low-capacitance transformer introduced into the structural design of the electrostrimulator, and the secondary winding of the latter is connected to the input of the reference voltage of the phase-sensitive detector.

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1/2 031 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--NEW CIS-DIETHYLENEDIAMINE COMPLEXES OF IRIDIUM,III -U-

AUTHOR-(03)-BARANOVSKIY, I.B., KOVALENKO, G.S., BABAYEVA, A.V.

B

COUNTRY OF INFO--USSR

SOURCE--ZH. NEORG. KHIM. 1970, 15(4), 954-7

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ETHYLENEDIAMINE, IRIDIUM COMPOUND, COMPLEX COMPOUND, PERCHLORATE, IR SPECTRUM, ELECTRIC CONDUCTIVITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/1214 STEP NO--UR/0078/70/015/004/0954/0957

CIRC ACCESSION NO--AP0128632

UNCLASSIFIED

2/2 031 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0128632

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. WHEN NAOH WAS ADDED TO YELLOW SOLN. OF CIS-(IR(EN) SUB2 CL SUB2)CL (I) THE SOLN. DECOLORIZED TO FORM (IR(EN) SUB2 (OH) SUB2)OH (ABSORBANCE MAX. AT 227 NM), WHICH FAILED TO SEP. BUT ON NEUTRALIZATION WITH HCLO SUB4, (CIS-(IR(EN) SUB2 (H SUB2 O) SUB2)(CLO SUB4) SUB3 (MAX. AT 262 NM) PPTD. ACID DISSOCN. CONSTS. OF THE DIAQUO COMPLEX WERE K SUB1 EQUALS 2.3 TIMES 10 PRIME NEGATIVE6 AND K SUB2 EQUALS 1.6 TIMES 10 PRIME NEGATIVE8. CIS-(IR(EN) SUB2 (H SUB2 O) SUB2) PRIME3 POSITIVE REACTED WITH CORESPONDING ACIDS OR THIOUREA (THIO) OR NA SUB2 SO SUB3 TO GIVE CIS-(IR(EN) SUB2 HCO SUB2)BR SUB2, CIS-(IR(EN) SUB2 (THIO) SUB2)(IRCL SUB6), CIS-(IR(EN) SUB2 (NASO SUB3) SUB2)CLO SUB4, AND CIS-(IR(EN) SUB2 (NO SUB2) SUB2)CLO SUB4. REACTION OF I WITH NA SUB2 SO SUB3 GAVE CIS-(IR(EN) SUB2 CLSO SUB3). IR SPECTRA AND ELEC. CONDS. OF THE COMPLEXES ARE GIVEN, FACILITY: INST. OBSHCH. NEORG. KHIM. IM. KURNAKOVA, MOSCOW, USSR.

UNCLASSIFIED

USSR UDC 547.541.6:542.127

LITVINENKO, L. M., [redacted], L. A., and SAVELOVA, V. A., Donetsk Branch of the Institute of Physical Chemistry Imeni L. V. Pisarzhevskiy, Acad. Sc. UkrSSR, Donetsk State University

"Kinetics of the Phosphorylation of Aromatic Amines With Dialkyl Chlorophosphates"

Kiev, Ukrainskiy Khimicheskiy Zhurnal, Vol 38, No 2, Feb 72, pp 165-169

Abstract: Reaction kinetics of aniline with dimethylchlorophosphate in nitrobenzene solutions are reported. The rate of the phosphorylation was determined by potentiometric determination of the unreacted aniline with sodium nitrite in hydrochloric acid solution. After a short induction period, which varied depending on the concentrations of starting materials, the reaction appears to reach a steady state. It was shown that, depending on the reaction conditions -- concentration of the reagents, temperature -- the main process of aniline acylation with dimethyl chlorophosphate is complicated by a side reaction of N-alkylation of the aromatic amine. By keeping the concentrations of the reagents in the range 0.01-1 M/l and the temperature at 25°C, it was possible to eliminate entirely the N-alkylation side reaction.

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USSR

UDC 620:186.4

BARANOVSKIY, M. A., and SARELO, S. B., Belorussian Polytechnical Institute

"Variation of the Structure of Steel During High-Speed Swaging"

Minsk, Izvestiya Akademii Nauk BSSR, Seriya Fiziko-Tekhnicheskikh Nauk, No 4, 1971, pp 107-110

Abstract: Broad utilization of high loading rates during working of metals gives rise to the necessity for a detailed study of the physical-mechanical properties and, especially, changes in structure, since the suitability of the parts and their fitness depend on the structure of the strained material. The change in structure of samples make of steels 20 and 45 after swaging with initial loading rates of 100, 200, and 320 m/sec is described. Photographs of the macrostructures after their deformation at rates of 100 and 320 m/sec are presented from which it follows that the specimen separates into two zones on increasing the loading rate. One zone has the form of a paraboloid of rotation with its base on the impact end, and the other encompasses

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USSR

BARANOVSKIY, M. A., and SARELO, S. B., Izvestiya Akademii Nauk BSSR, Seriya Fiziko-Tekhnicheskikh Nauk, No 4, 1971, pp 107-110

the first at a certain height. Photographs of the microstructure of the samples made of steel 20 after deformation at a rate of 320 m/sec are also presented. It was established that the deformation rate depends to a significant extent on the structural state of the steel.

2/2

1/2 015 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--DETERMINATION OF FUTURE LEVELS OF THE THERMAL STATE OF A BLAST FURNACE -U-

AUTHOR--BARANOVSKIY, P.G.

B

COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., CHERN. MET. 1970, 13(5), 155-9

DATE PUBLISHED-------70

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

TOPIC TAGS--MODEL, BLAST FURNACE, THERMODYNAMICS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3008/0625 STEP NO--UR/0148/70/013/005/0155/0159

CIRC ACCESSION NO--AT0137710

UNCLASSIFIED

2/2 015 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AT0137710

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A SCHEMIATIC MODEL OF INTERACTIONS INSIDE OF BLAST FURNACE IS SHOWN, WHEREIN THE THERMAL CONDITION OF THE FURANCE IS REPRESENTED AS SEVERAL VECTORS. THEORETICAL DISCUSSION IS CARRIED OUT ON THE INTERRELATIONS BETWEEN THESE VECTORS WITH THE PURPOSE TO BE ABLE TO FORECAST CHANGES IN THERMAL STATE OF THE FURNACE THUS FACILITATING THE CONTROL OF ITS OPERATION. FACILITY: SIB. MET. INST., NOVOKUZNETSK, USSR.

UNCLASSIFIED

1/2 035 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--FARADAY EFFECT IN HOT ELECTRONS IN THE UHF, ULTRAHIGH FREQUENCY REGION -U-

AUTHOR-(03)-BEREZIKOV, V.D., POGORELSKIY, A.M., BARANOVSKIY, S.N.

COUNTRY OF INFO--USSR

B

SOURCE--FIZ. TEKH. POLUPROV. 1970, 4(4), 779-80

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--FARADAY EFFECT, GERMANIUM SEMICONDUCTOR, ELECTRON TEMPERATURE, ELECTRON TRANSITION, ULTRAHIGH FREQUENCY, ELECTROMAGNETIC INTERACTION, ELECTROMAGNETIC WAVE POLARIZATION, DIELECTRIC CONSTANT, HALL MOBILITY, CRYSTAL ORIENTATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3004/0887 STEP NO--UR/0449/70/004/004/0779/0780

CIRC ACCESSION NO--AP0131474

UNCLASSIFIED

2/2 035 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0131474

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ROTATION OF THE PLANE OF POLARIZATION OF A HIGH INTENSITY UHF ELECTROMAGNETIC WAVE WAS MEASURED. THE LATTER PASSES THROUGH THE SAMPLE (N-GE, RHO EQUALS 10 OHM-CM) AND HEATS UP THE ELECTRONS. THE DEPENDENCE OF THE FARADAY ROTATION ON THE INTENSITY OF THE HEATING FIELD AT ROOM TEMP. IS PLOTTED. AT THE FREQUENCY EMPLOYED (OMEGA EQUALS 2 PI 9.4 TIMES 10 PRIME9-SEC), THE CONDITION OMEGA TAU LESS THAN 1 (TAU IS THE RELAXATION TIME) IS SATISFIED, AND THE DIELEC. CONST. HAS THE SAME VALUE AS IN A STATIC FIELD. THE DEPENDENCE DELTA THETA OVER THETA EQUALS 3 OVER 2 DELTA MU SUBH OVER MU SUBH (THETA IS THE ROTATION ANGLE, MU SUBH IS THE HALL MOBILITY) DERIVED FOR HIGH FIELDS IS EXPTL. CONFIRMED FOR A FIELD VECTOR PARALLEL TO (111) AND AN INDUCTION VECTOR OF THE MAGNETIC FIELD PARALLEL TO (110). THE RESULTS AGREE WITH HALL MOBILITY MEASUREMENTS IN STRONG ELEC. FIELDS. FACILITY: NOVOSIBIRSK. ELEKTROTEKH. INST., NOVOSIBIRSK, USSR.

1/2 027 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--ANISOTROPY OF THE ULTRAHIGH FREQUENCY OF FARADAY ROTATION IN N GERMANIUM IN STRONG ELECTRIC FIELDS -U-

AUTHOR-(04)-BARANOVSKIY, S.N., BEREZIKOV, O.D., GORLOV, B.B., POGORELSKIY, A.M.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TEKH. POLUPROV. 1970, 4(3), 589-91

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--ANISOTROPY, ULTRAHIGH FREQUENCY, ROTATION, GERMANIUM, ELECTRIC FIELD

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/1720 STEP NO--UR/0449/70/004/003/0589/0591

CIRC ACCESSION NO--AP0120432

UNCLASSIFIED

2/2 027 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0120432

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ANISOTROPY OF THE ULTRAHIGH FREQUENCY (UHF) OF FARADAY ROTATION IF STRONG ELEC. FIELDS WAS STUDIED ON N-GE TO DET. THE ANISTROPY OF THE HALL MOBILITY. FARADAY ROTATION EXPTS. WERE PERFORMED AT ROOM TEMP. AND.A FREQUENCY OF 9.4 GHZ. DISK SHAPED, ROTATABLE SAMPLES OF N-GE (P SIMILAR TO 10 OHM-CM) WERE PLACED IN A ROUND WAVE GUIDE, THE DIRECTION OF THE UHF WAVE BEING PARALLEL TO THE (110) DIRECTION OF THE DISK, MAGNETIC FIELD IN SAMPLES WAS INDUCED BY A SOLENOID. THE DEPENDENCE OF FARADAY ROTATION ANGLE (THETA) ON THE STRENGTH OF ELEC. FIELD OF THE INCIDENT WAVE WAS TAKEN FOR FIELD DIRECTIONS PARALLEL TO (111) AND (100). FROM THESE CURVES, ANISOTROPY AND SATN. OF FARADAY ROTATION IN STRONG FIELDS WAS DETD. THE ANGULAR DEPENDENCE OF FARADAY ROTATION ON DIRECTION OF A MEAN ELEC. FIELD IN THE SAMPLE (E EQUALS 1300 V-CM) WAS ALSO EXAMD. A RELATION BETWEEN FARADAY ROTATION AND HALL MOBILITY ANISOTROPY WAS FOUND. FACILITY: NOVOSIBIRSK. ELEKTROTEKH. INST., NOVOSIBIRSK, USSR.

UNCLASSIFIED

Vacuum Tubes

USSR

B

BARANOVSKIY, VIKTOR IOSIFOVCH

"Production Technology for Cathode-Ray Tubes" (Technologiya Proizvodstva Priyemnykh Elektronnoluchevykh Trubok), Moscow, "Energiya," 1970, 7,000 copies, 328 pages.

Abstract: The book examines the principles of operation, the lay-out, and production technology of cathode-ray tubes. Primary attention is given to the problems of technology.

The book is intended for technical personnel in enterprises developing and manufacturing cathode-ray tubes, and may serve as a textbook for students of electric vacuum specialties.

The book has 74 citations and contains a subject index. The chapter headings are as follows:

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002200310007-6"

USSR

BARANOVSKIY, VIKTOR IOSIFIOVCH, "Energiya," 1970, 7,000 copies, 328 pages.

Miscellaneous

USSR UDC: 539.21:536.42

BARANOVSKIY, V. M., GUREVICH, M. Ye., LARIKOV, L. N., KHOMENKO, B. S., SHMATKO, O. A.

"Investigation of Spatial Effects During Aging"

Metallofizika. Resp. mezhved. sb. (Physics of Metals. Republic Interdepartmental Collection), 1970, vyp. 27, pp 65-79 (from RZh-Fizika, No 9, Sep 70, Abstract No 9Ye477)

Translation: The article is a brief survey of methods of studying spatial effects, with a description of the EAD-65 and AD-2 automatic dilatometers developed at the Institute of Physics of Metals, Academy of Sciences of the Ukrainian SSR. The data obtained on the automatic equipment are compared with those obtained on an optical dilatometer. The spatial effects during aging of an alloy of cobalt with 31.89 percent tungsten is calculated. The calculation is compared with experimental data. Authors' abstract.

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USSR

UDC 676.064.19:677.521.01:53

SHISHKO, V. I., BARANOVSKIY, M. V., AVRASIN, YA. D., REZ..., V. B., YAKOLSON, B. V., ZANKEVICH, V. N., and VALUYEVKO, YE. G.

"Glasstextolites Based on Non-Woven Fiberglass Reinforced Materials"

Moscow, Plasticheskiye Massy, No 3, 1972, pp 70-73

Abstract: Properties are described of the binding, saturating non-woven fiberglass materials and glasstextolites made from them for structural materials, and electrical insulation. It was established that it is economically feasible to use the nonwoven materials in production of glasstextolites for various purposes. Production of non-woven fiberglass reinforced materials from non-twisted glass thread facilitates the production expansion of the glasstextolites and reinforced plastics, both in regard to the volume and variety of materials. One of the most promising materials, in this area is the VPR-10 reinforcing material consisting of two glass laminated systems, in which 10 layers are overlaid at 90°, stitched with glass thread.

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USSR

B

UDC 621.396.677.(088.8)

BARANOVSKIY, Ye. I., TUMARKIN, E. F.

"Wide Band Linear Polarization Antenna"

USSR Author's Certificate No 233030, Filed 27 Oct 67, Published 26 Jan 70 (from RZh-Radiotekhnika, No 8, Aug 70, Abstract No 8B28 P)

Translation: The proposed wide band antenna for linear polarization consists in a set of radiating elements periodically varying with respect to size and arranged perpendicular to a two-wire feedline. In order to increase the directionalness of the antenna, the radiating elements are executed in the form of loops in the shape of circles or rectangles and excited by halfwave dipoles arranged symmetrically with respect to their axis. The operating principle is investigated, and the structural peculiarities are described. There is one illustration.

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USSR

B

UDC 621.396.677.4(088.8)

BARANOVSKIY, Ye. I., TUMARKIN, E. F.

"Circular Antenna Array"

USSR Author's Certificate No 2116041, Filed 13 Apr 66, Published 19 Jan 70 (from RZh-Radiotekhnika, No 8, Aug 70, Abstract No 8B59 P)

Translation: The proposed circular antenna array consists of log-periodic radiators installed perpendicular to the plane of the array and arranged in one or several concentric circles. In order to insure circular polarization of the radiation in a broad frequency range, the log-periodic radiators are turned one relative to the other at an angle equal to π divided by the number of radiators in the circle and shifted along the axes with respect to each other. There is one illustration.

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Acc. Nr.: AP0042644

Ref. Code: UR 0203
JPRS 50162

Polarization of Pcl Pulsations

(Abstract: "Some Characteristics of the Polarization of Pcl Pulsations Associated with Their Waveguide Propagation," by L. N. Baranskiy, Institute of Physics of the Earth; Moscow, Geomagnetizm i Aeronomiya, Vol X, No 1, 1970, pp 114-118)

Experimental and theoretical studies have shown that Pcl pulsations (pearls) are propagated from the zone of their sources (Φ = 65-72°) along the earth's surface through the ionospheric waveguide centered in the F2 layer. In this article the waveguide propagation of pearls is used as the basis for explaining a number of polarization effects characteristic of this type of pulsations. The study was based on observational data from simultaneous measurements at many stations in the USSR during 1966-1967. The instrumentation and methods have been described earlier by the author in Izv. AN SSSR, Fizika Zemli, No 5, 1969, 40. This paper is limited to an examination of the characteristics of polarization of the magnetosonic wave propagating in homogeneous unbounded plasma. The effect of the boundaries of the waveguide, which are not taken into account in this study, must be reflected in the formation of secondary Alfvén and magnetosonic waves, leading to a complication of the polarization of the main magnetosonic

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wave propagating through the waveguide. In this study it is assumed that these complicating circumstances are second-order effects which can be neglected in the first approximation. The magnetosonic wave propagating in ideal plasma has plane polarization and the direction of the variable vector h in it is determined by the following conditions: a) it must be perpendicular to the wave vector k, b) it must lie in the plane of the vectors k and H (vector of the external magnetic field). Using conditions a) and b) an expression is derived for the ratio of the east-west component of the h vector to its north-south component. It is clear that: 1) if the external magnetic field is vertical ($H_x = 0$), the direction of the horizontal projection h rigorously coincides with the direction to the source of secondary magnetosonic waves; 2) in the case of meridional wave propagation ($k_y = 0$) the direction of the horizontal projection of h coincides with the direction to the source ($h_y = 0$) for any slope of the external field to the horizon. The reverse assertion is not true: it does not follow from the condition $h_y = 0$ that $k_y = 0$; 3) in the case of latitudinal wave propagation ($k_x = 0$) the direction of the horizontal projection of h is the closer to the direction to the source the lesser the H_x/H_y value and the closer the ratio k_y/k_z is to unity. It follows from points 1) and 2) that at the

geomagnetic pole the direction of the horizontal projection of h rigorously coincides with the direction to the source. It can be concluded from points 1)-3) that in the high and middle latitudes there should be a tendency to a coincidence of the direction of the horizontal projection of h and the direction to the source. It is shown that approach of the horizontal projection of h to the meridian during Pcl intensity bursts occurs simultaneously at stations widely spaced in longitude; the horizontal projection of h during Pcl intensity maximum only approaches the meridian without crossing it. The explanation for the correlation between the intensity of Pcl pulsations and their polarization must obviously be sought in a change in the properties of the source itself, not in its movement.

19760702

USSR

BASS, F. G., BARANSKIY, P. I., GUREVICH, YU. G., KOROLYUK, S. L., POTYKEVICH, I. V., SAMOYLOVICH, A. G.

"All-Union Conference on the Physics of Semiconductors in Strong Magnetic and Electric Fields"

Leningrad, Fizika i Tekhnika Poluprovodnikov, Vol 5, No 3, March 1971, pp 587-591

Abstract: This article contains brief reviews of the reports given at the All-Union Conference on the Physics of Semiconductors in Strong Magnetic and Electric Fields and held by the Scientific Council on Physics and Chemistry of Semiconductors of the USSR Academy of Sciences, the Institute of Physics of Metals of the USSR Academy of Sciences and the Problem Scientific Research Laboratory of Anisotropic Semiconductors of the Chernovtsy State University from 14 to 17 October 1970, in Chernovtsy.

The reports were concentrated around the following problems: 1) kinetic phemonena in semiconductors in strong magnetic fields; 2) kinetic and optical phenomena in strong electric and magnetic fields; 3) electron-hole plasma in strong electric and magnetic fields; 4) electric instabilities

USSR

BASS, F. G., et al., Fizika i Tekhnika Poluprovodnikov, Vol 5, No 3, March 1971, pp 587-591

in strong fields; 5) dimensional effects and volt-ampere characteristics. Seventy-six reports were given. The next conference, which will be participated in by the member countries of the CEMA, will be held in September-October 1971, in Leningrad.

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1/2 020 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--NEGATIVE MAGNETORESISTANCE OF P TYPE GAAS AT 77 K -U-

AUTHOR-(02)-BARANSKIY, P.I., GLUSHKOV, YE.O.

COUNTRY OF INFO--USSR

SOURCE--UKRAIN'SKII FIZICHNII ZHURNAL, VOL. 15, MAR. 1970, P. 510-512

DATE PUBLISHED----MAR70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--MAGNETORESISTANCE, GALLIUM ARSENIDE, MAGNETIC FIELD

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1998/0560 STEP NO--UR/0185/70/015/000/0510/0512

CIRC ACCESSION NO--AP0121232

UNCLASSIFIED

2/2 020 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0121232

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MEASUREMENT OF THE PARALLEL AND PERPENDICULAR MAGNETORESISTANCE AS A FUNCTION OF THE APPLIED MAGNETIC FIELD IN N TYPE GAAS AT A TEMPERATURE OF 77 K. MEASUREMENTS PERFORMED ON SAMPLES CUT FROM DIFFERENT CRYSTALS SHOW THAT IN MAGNETIC FIELDS UP TO 23 KOE BOTH THE PARALLEL AND THE PERPENDICULAR MAGNETORESISTANCE ARE NEGATIVE, WITH THE PARALLEL MAGNETORESISTANCE BEING LARGER. THE PARALLEL MAGNETORESISTANCE BECOMES SATURATED AT FIELDS STRONGER THAN 10 KOE AT THIS TEMPERATURE. FACILITY: AKADEMIIA NAUK UKRAINS'KOI RSR, INSTITUT NAPIVPROVIDNIKIV, KIEV, UKRAINIAN SSR.

UNCLASSIFIED

UDC 54--126+546.56+546.81

USSR

DUSHCHENKO, V. P., BARANOVSKIY, V. M., KUZ'MOVICH, V. V., CHEGORYAN, V. M., VYSOTSKAYA, V. N., and IVKINA, N. A., Institute of Colloidal Chemistry and Chemistry of Water, Academy of Science Ukrainian SSR

"Thermophysical Properties of Metallopolymers Derived From Inorganic Heteropolyacids"

Kiev, Ukrainskiy Khimicheskiy Zhurnal, Vol 37, No 6, Jun 71, pp 618-620

Abstract: Coefficients of heat- and electroconductivity of copper and tin metallopolymers derived from silicomolybdic and silicotungstic acids were studied as functions of temperature. The acids were reduced by respective metals employing a ratio of 6 electrons per acid molecule. Highly dispersed metals were produced in aqueous solutions of complex blues by electrolytic or chemical methods; the complexes were coagulated on the surface of metal particles, and then the system was treated with barium oxide or glycerine at 200°C. The resulting powdery metallopolymers were compressed into tablets and studied by the method of dynamic heating. It was shown that the inorganic base of these metallopolymers exhibits some crystalline structure. Metal particles appear to be isolated from each other by layers of the inorganic

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002200310007-6"

USSR

DUSHCHENKO, V. P., et al., Ukrainskiy Khimicheskiy Zhurnal, Vol 37, No 6, Jun 71, pp 618-620

polymer. The relationship between the coefficient of heat conductivity and temperature is analogous to the case of crystalline polymers. An increase in the concentration of metal in metallopolymers results in different increases of the coefficient of heat conductivity, depending on the polymer.

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AA0040636 Baranovskiy, V.M.

UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent 12-69

240079 SEALED ELECTRIC MOTOR for drives of chemical reactors has sleeve (3) which protects stator (4) from the working medium at high pressure and high temp. The wall thickness of the sleeve may be thin so that the motor has a good characteristic because the sleeve is relieved from axial loads by coil spring (1).

10.8.64. as 916572/24-7, BARANOVSKII, V.M. and DOROFEEV, S.N. Leningrad Branch of All-Union Res. Inst. of Chemical Engineering. (8.8.69) Bul. 12/21.3.69. Class 21d 1 Int. Cl. H 02k.

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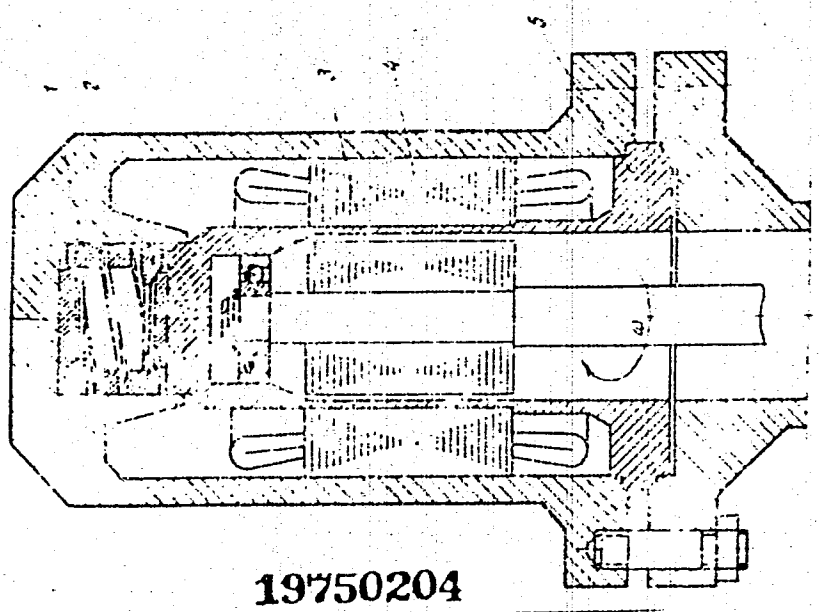

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AA0040636

AUTHORS: Baranovskiy, V. M.; and Dorofeyev, S. N.

Leningradskiy Filial Vsesoyuznogo Nauchno - Issledovatel'skogo i Konstruktorskogo Instituta Khimicheskogo Mashinostroyeniya

19750205

3/a

USSR UDC 517.933

BARANOVSKIY, V. P., MALYSHEV, G. V.

"A Problem of the Identification of a Periodic Input Signal of a Stationary Linear System"

Mat. in-t Sverdl. otd. AN SSSR (Mathematics Institute of the Sverdlovsk Department of the Academy of Sciences USSR), Sverdlovsk, 1970, 16 pp, ill., 5 ref. (Deposition No. 2106-70) (from RZh-Matematika, No 4, Apr 71, Abstract No 4B324 DEP)

Translation: It is proposed that a periodic input action on a stationary linear system and a steady-state output signal are symmetric in terms of semiperiodic oscillations. In one part of the half-period the input action is known but the output signal is unknown; in the other part of the half-period the output signal is known but the input action is unknown. A procedure is described for determining the unknown parts of the input and output oscillations. The solution of the problem reduces to the solution of a system of integral Volterra equations of the second type. Authors abstract.

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USSR UDC: 621.372.86(088.8)

DUDKOVSKIY, E. A., BARANOVSKIY, Ye. I.

"A Coaxial Measurement Line"

USSR Author's Certificate No 263698, filed 25 Apr 68, published 4 Jun 70 (from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6A305 P)

Translation: This Author's Certificate introduces a coaxial measurement line which contains a coax section to which the inner cavity of a movable probe is coupled. As a distinguishing feature of the patent, measurement accuracy is improved by using a tube as the central conductor of the coax and making the probe in the form of several radially converging pins located in the same transverse plane, passing through longitudinal slots in the walls of the tube.

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BARANSKIY, S.

SO: JPRS 54768
23 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. Baranskiy, K. Kwiatezki, Ya. Kozinski and S. Smigelskij, Moscow, "Fiziologicheskaya 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; Halberg 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) (Halberg; 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; Dettgey). 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.

USSR UDC: 517.9:621.039

ALEKSEYEVA, Ye. V., BARANTSEV, R. G.

"Use of a Kinetic Operator With Finite Interval of Departure for Calculating Near-Free Molecular Gas Flows"

V sb. Aerodinamika razrezh. gazov (Aerodynamics of Rarefied Gases--collection of works), No 5, Leningrad, Leningrad University, 1970, pp 83-90 (from RZh--Matematika, No 5, May 71, Abstract No 5B582)

Translation: A simplified analysis is made of the stationary hypersonic flow of a highly rarefied gas near a convex solid within the framework of the theory of first collisions. The approximation consists in averaging two quantities a priori: the interval of departure in the integral kinetic equation, and the velocity of surface reflection of particles. Integrated analytical expressions are obtained for local mass flows, momentum, and energy under near-free molecular streamline flow conditions. In the case of reflection along the normal, these quantities are computed as functions of the local angle of attack θ_0 and reflection velocity U_s. Complete aerodynamic coefficients at various values of U_s are found for a sphere. It is assumed that the collision cross section for the particles is constant. Authors' resumé.

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USSR UDC 532.25:536.44

KUZ'MIN, V. L. and BARANTSEV, V. G.

"Effect of an External Field on the Position of the Phase Separation Surface Close to the Critical Point"

Leningrad, Vestnik Leningradskogo Universiteta--Fizika, Khimiya, No 22, Nov 1972, pp 41-44

Abstract: This paper is a theoretical study to determine the position of the cylindrical surface for the separation of the phases formed at the critical region in the rotation of a single-component liquid as a function of the angular velocity of the rotation and the thermodynamic parameters. The results of an earlier paper published by the same authors in the same journal (No 4, 1972, p 71) were used in the present study. The results of the study can be used to find the shift of the critical meniscus in the gravitational field. Also examined in the present paper is the position of the separating surface if the liquid is a dielectric immersed in an external electric field. To attack this last problem, the authors used an expansion of the distribution functions into a functional series in terms of the external field.

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3

USSR

UDC 536.2.023

KARPINOS, D. M., KONDRAT'YEV, YU. V., KLIMENKO, V. S., BARANTSEVA, I. G., PILIPOVSKIY, YU. L., DOBROVOL'SKIY, O. A., and SHAMATOV, YU. M., Institute of Problems of Material Science, Academy of Sciences, Ukrainian SSR

"Physical Properties of Hot-Extruded W-Cu Pseudoalloy"

Minsk, Inzhenerno-Fizicheskiy Zhurnal, Vol 20, No 1, Jan 71, pp 96-99

Abstract: A study was made of a number of physical properties of W-Cu pseudoalloys in a wide range of temperatures: thermal conductivity from 370 to 2200°K, electrical conductivity from 300 to 1970°K, and thermal expansion from 300 to 870 and 1370 to 2200°K. The investigated alloys contained 8-9 wt% Cu.

Results showed that the thermal and electrical conductivities of W-Cu pseudoalloys exceed those of tungsten. The higher conductivity is caused by the effect of copper, where both conductivities in the solid state are 2.5-3 times greater than for tungsten. The sharper lowering of thermal and electrical conductivity

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USSR

KARPINOS, D. M., et al., Inzhenerno-Fizicheskiy Zhurnal, Vol 20, No 1, Jan 71, pp 96-99

of the pseudoalloys, observed at temperatures above the melting point of copper, is caused partially by a decrease of copper conductivity due to its transition to the liquid state. At temperature above the melting point of copper the pseudoalloy is depleted of copper, and after the high temperature tests the Cu content did not exceed 2-3%.

Values for the coefficient of thermal expansion (CTE) of the pseudoalloys exceed those for tungsten. This attributed to the presence of a significant amount of copper in the samples. As in conductivity tests, at temperatures close to 2200°K the copper melts and flows from the tungsten skeleton, thus reducing the copper content and resulting in an alloy with a thermal expansion close to that of tungsten.

USSR 615.217.32.813.1.015.4:612.833.81

GOLIKOV, S. N., SELIVANOVA, A. T., LEVSHUNOVA, M. A. and BARANTSEVICH, R. P., Leningrad

"The Mechanism of Armine Action on Conditioned Reflexes"

Moscow, Farmakologiya i Toksikologiya, Vol 35, No 2, Mar/Apr 72, pp 131-134

Abstract: Armine given to cats intramuscularly in doses of 3-5 mcg/kg shortens latency periods, speeds up reactions to stimuli, and increases general motor activity, while larger doses (10 mcg/kg) inhibit conditioned reflexes. Armine injected into the right motor cortex through an implanted tubule in doses of 5 mcg/kg slows down conditioned reflexes to light and sound stimuli and causes clonic twitches on the contralateral side. Larger doses (20 and 50 mcg/kg) completely inhibit conditioned reflexes, destroy coordinated motor activity, and cause epileptic seizures recurring for up to 6 months. Conditioned reflexes begin to reappear in a month, but complete recovery requires up to a year. Histological examinations of cortical slides obtained during the acute phase revealed neurons with ischemic degeneration and neurons with bleached cytoplasm and nuclei in the third, fourth, and fifth cortical layers at and around the site of injection.

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USSR

UDC 621.375.82

POPOV, A. K., BARANTSOV, V. I.

"On the Splitting of Energy Levels of Atoms Moving in a Standing Wave Field"

V sb. VII Ural'sk. konf. po spektroskopii, 1971, Vyp. 1 (VII Ural'sk Conference on Spectroscopy, 1971, No. 1 -- Collection of Works), Sverdlovsk, 1971, pp 148-159 (from RZh-Fizika, No 10, Oct 72, Abstract No 10D844)

Translation: The behavior of a three-level system in a field of two monochromatic fields of radiation was investigated theoretically. One was a standing wave field with a frequency close to the frequency of one of the transitions of the system, and the other one was a weak wave in resonance with the neighboring transition. The study was carried out in the first order of amplitude of the weak field and with an accuracy up to the fourth order in terms of the amplitude of the standing wave of the strong field. An expression was obtained for the absorption (emission) intensity at the frequency of the weak field under nonhomogeneous broadening of the spectral line. It is shown that interaction with the strong standing wave leads to an interference change in the shape of the line (without a change in its integral intensity), even if the energy of interaction between the system and the field is considerably less than the Doppler width. Kh. V.

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L/2 025 UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--EFFECT OF SOME PARAMETERS OF COLD ROLLING ON THE TEXTURE AND PROPERTIES OF TRANSFORMER STEEL -U-
AUTHOR-(04)-BRINZA, V.N., BARANTSOV, V.MA., PAVLOV, I.M., FEDOSOV, N.M.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. FIZ. 1970, 34(2), 292-6

DATE PUBLISHED-------70

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

TOPIC TAGS--TRANSFORMER STEEL, COLD ROLLING, HOT ROLLING, MAGNETIC PROPERTY, CRYSTALLIZATION, PLASTIC DEFORMATION, STEEL SHEET

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1994/1934 STEP NO--UR/0048/70/034/002/0292/0296

CIRC ACCESSION NO--AP0115744
UNCLASSIFIED

2/2 025 UNCLASSIFIED PROCESSING DATE--090CT70

CIRC ACCESSION NO--AP0115744

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECTS OF THE THICKNESS OF HOT ROLLED SHEET AND THE DEFORMATION RATIOS APPLIED IN SUBSEQUENT COLD ROLLING OPERATIONS ON THE DEGREE OF PERFECTION OF THE SECONDARY RECRYSTN. TEXTURE AND THE MAGNETIC PROPERTIES OF FINISHED TRANSFORMER STEEL SHEET (CONTG. 3.18PERCENT SI) WERE STUDIED ON SPECIMENS 50 TIMES 500 MM, COLD ROLLED IN SEQUENTIAL OPERATIONS ON A LAB. ROLLING STAND (ROLLING SPEED 0.1M-SEC) FROM INITIAL THICKNESSES OF 2.2, 2.5, AND 3.0 MM TO A FINAL THICKNESS OF 0.33 MM. STD. ANNEALING PROCEDURES WERE USED. THE DISTRIBUTION OF TEXTURE DEVIATIONS, THE SP. CORE LOSSES, AND THE MAGNETIC INDUCTION WERE DETD. AND RELATED TO THE DISLOCATION STRUCTURE IN THE DEFORMED METAL. WHEN THE THICKNESS OF THE INTERMEDIATE SHEET (BEFORE THE 2ND COLD ROLLING) WAS 0.85 OR 1.0 MM, THE TEXTURE DEVELOPED BY SECONDARY RECRYSTN. WAS INDEPENDENT OF THE THICKNESS OF THE HOT ROLLED SHEET. WHEN THE INTERMEDIATE SHEET THICKNESS WAS 0.7 MM THE EFFECT OF THE THICKNESS OF THE HOT ROLLED SHEET WAS SUBSTANTIAL; LESS PERFECT TEXTURES WERE OBTAINED FROM SHEET 2.2 AND 3.0 MM THICK. THE SECONDARY RECRYSTN. TEXTURE WAS IMPAIRED AND THE SP. CORE LOSSES WERE INCREASED WHEN THE HIGHEST DEFORMATION WAS APPLIED IN INTERMEDIATE ROLLING. MORE PERFECT TEXTURES WERE ATTAINED WHEN THE DEFORMATION WAS GRADUALLY DECREASED OR WAS UNIFORM PER PASS, OR WHEN THE MIN. DEFORMATION WAS APPLIED IN THE INTERMEDIATE ROLLING. FACILITY: MOSK. INST. STALI SPLAVOV, MOSCOW, USSR.

UNCLASSIFIED

1/2 018 UNCLASSIFIED B PROCESSING DATE--02OCT70
TITLE--COMPUTERS MUST WORK FULL TIME -U-

AUTHOR--JARABAYEV, K.

COUNTRY OF INFO--USSR, EAST GERMANY, BULGARIA

SOURCE--SEVETSKAYA KIRGIZIYA, JUNE 20, 1970, P 2, COLS 1-6

DATE PUBLISHED--20JUN70

SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR., BEHAVIORAL AND SOCIAL SCIENCES
TOPIC TAGS--COMPUTER TECHNOLOGY, CALCULATOR, INDUSTRIAL COMPUTER, COMPUTER CENTER/(U)ELKA CALCULATOR, (U)ZOYEMTRON 220 CALCULATOR, (U)VEGA CALCULATOR, (U)MINSK DIGITAL COMPUTER, (U)NAIRI DIGITAL COMPUTER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1989/1702 STEP NO--UR/9018/70/000/000/0002/0002

CIRC ACCESSION NO--AN0108075
UNCLASSIFIED

2/2 018 UNCLASSIFIED PROCESSING DATE--02OCT70
CIRC ACCESSION NO--AN0108075
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ARTICLE IS A REPORT ON THE STATE OF THE COMPUTER ART IN THE KIRGIZ REPUBLIC. ALL TOTAL THE KIRGIZ ECONOMY HAS 4,687 COMPUTERS AND CALCULATING MACHINES. THIS FIGURE IS TEN TIMES THE NUMBER OF SUCH MACHINES IN 1960. IT INCLUDES 48 PUNCHED CARD COMPUTERS, DESK TYPE ELECTRONIC COMPUTERS ELKA-22, MADE IN BULGARIA, AND ZOYEMTRON-220, MADE IN EAST GERMANY, THE SOVIET MADE "VEGA", 17 MEDIUM AND HIGH CAPACITY ELECTRONIC COMPUTERS, ETC. MOST OF THE COMPUTATION STATIONS EQUIPPED WITH PUNCH CARD COMPUTERS AND CALCULATORS ARE WITHIN THE SYSTEM OF THE CENTRAL STATISTICAL ADMINISTRATION, TSSY, OF THE REPUBLIC. IN ADDITION TO THAT THERE ARE 5 COMPUTATION CENTERS, THE TSSY, GOSPLAN, ACADEMY OF SCIENCES, "KIRGIZPROMPROYEKT" INSTITUTE, AND THE KIRGIZ STATE UNIVERSITY. THESE CENTERS ARE USING ELECTRONIC COMPUTERS OF THE "MINSK-1" OR "NAIRI" TYPE. THE REPUBLIC HAS 1500 EXPERTS AND WORKERS INVOLVED IN THEMECHANIZATION OF COMPUTATION OPERATIONS. MACHINE COMPUTATION UNITS AND COMPUTATION CENTERS SERVE 530 PLANTS AND ORGANIZATIONS INCLUDING 35 KILKHOZES, 14 SOVKHOZES, 12 BOOKKEEPING CENTERS, 90 AUTOMOBILE PARKS, AND 88 COMMERCIAL ORGANIZATIONS. THE AUTHOR LAMENTS THE FACT THAT THE POTENTIAL CAPABILITYIES OF COMPUTER EQUIPMENT ARE NOT FULLY USED. AT ADMINISTRATIVE CENTERS AND LABORATORIES, COMPUTERS ARE WORKING ONLY 4 TO 5 HOURS A DAY. THE ELECTRONIC COMPUTER AT THE "KIRGIZPROMPROYEKT" IS USED ONLY 1.3 HOURS A DAY.

UNCLASSIFIED

1/2 007 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--PLANKTONIC FORAMINIFERA IN SEDIMENTS OF THE NORTH ATLANTIC -U-

AUTHOR--BARASH, M.S.

COUNTRY OF INFO--USSR, ATLANTIC OCEAN

SOURCE--PLANKTONIC FORAMINIFERA IN SEDIMENTS OF THE NORTH ATLANTIC (PLANKTONNYYE FORAMINIFERY V OSADKAKH SEVERNOY ATLANTIKI) MOSCOW, NAUKA,
DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES, EARTH SCIENCES AND OCEANOGRAPHY
TOPIC TAGS--FORAMINIFERA, BOTTOM SEDIMENT, PLANKTON, OCEAN BOTTOM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3003/1275 STEP NO--UR/0000/70/000/000/0001/0093

CIRC ACCESSION NO--AM0130261

UNCLASSIFIED

2/2 007 UNCLASSIFIED PROCESSING DATE--13NOV70
CIRC ACCESSION NO--AM0130261
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TABLE OF CONTENTS: INTRODUCTION 5. BRIEF CHARACTERISTICS OF INVESTIGATED REGION 8. METHODS 13. DISTRIBUTION OF PLANKTONIC FORAMINIFERA IN SURFACE LAYER OF SEDIMENT 17. TYPES OF THANATOCENOSIS OF PLANKTONIC FORAMINIFERA IN SURFACE LAYER OF SEDIMENT 44. PALEOTHERMAL ANALYSIS OF CORE SAMPLES 61. CONCLUSION 66. LITERATURE 67. APPENDIX. PHOTO TABLES AND THEIR EXPLANATIONS 71. APPENDIX I. DISTRIBUTION OF PLANKTONIC FORAMINIFERA IN SURFACE LAYER OF SEDIMENT (FRACTION MORE THAN 0.1 MM) 72. APPENDIX II. DISTRIBUTION OF PLANKTONIC FORAMINIFERA IN SURFACE LAYER OF SEDIMENT (FRACTION MORE THAN 0.05 MM) 84. EXPLANATIONS OF PHOTO TABLES 95. THE BOOK GIVES A DETAILED ANALYSIS OF THE DISTRIBUTION OF SHELLS OF PLANKTONIC FORAMINIFERA IN SURFACE SAMPLES OF SEDIMENT OF THE NORTHERN PART OF THE ATLANTIC OCEAN. IN THE STUDIED REGION WERE DEPOSITED 3 TYPES OF THANATOCENOSIS OF PLANKTONIC FORAMINIFERA: SUBARCTIC, BOREAL AND MODERATELY WARM WATER. THE RELATION WAS DETERMINED BETWEEN PROPOSITION OF TYPES AND AVERAGE ANNUAL TEMPERATURES OF SURFACE WATER, THAT ALLOWS CARRYING OUT OF PALEOTHERMAL INVESTIGATIONS OF PLEISTOCENIC SEDIMENTS AND THEIR STRATIGRAPHIC DISTRIBUTION. THE BOOK WAS WRITTEN FOR GEOLOGISTS, BIOLOGISTS, PALEONTOLOGISTS AND OCEANOLOGISTS.

UNCLASSIFIED

1/2 010 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--ALL ROUND ASSESSMENT OF PRODUCT QUALITY -U-

AUTHOR-(02)-BARBASH, S.M., KOZENKO, A.V.

COUNTRY OF INFO--USSR

SOURCE--STANDARTY I KACHESTVO, 1970, NR 5, PP 58-61

DATE PUBLISHED-------70

SUBJECT AREAS--BEHAVIORAL AND SOCIAL SCIENCES, MECH., IND., CIVIL AND MARINE ENGR
TOPIC TAGS--QUALITY CONTROL, INDUSTRIAL STANDARD, INDEX, PRODUCTION STANDARD

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1999/0114 STEP NO--UR/0422/70/000/005/0058/0061

CIRC ACCESSION NO--AP0122380

UNCLASSIFIED

2/2 010 UNCLASSIFIED PROCESSING DATE--23OCT70
CIRC ACCESSION NO--AP0122380
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE METHOD SUGGESTED IN THE ARTICLE PERMITS THE QUALITY LEVEL OF A PRODUCT TO BE ASSESSED WITHOUT A COMPLETE KNOWLEDGE OF THE ABSOLUTE VALUES OF INGREDIENT INDICES. BIBL. 10.

UNCLASSIFIED

BARAR, A. S.

space physiology

SO: JPRS 53801
12 Aug 71

COLLEEN

UDC 612.842.6.014.47:531.113

CHANGES IN HUMAN RETINAL CIRCULATION DURING TRANSVERSE ACCELERATION

[Article by A. S. Barar and [illegible] Sokol, Moscow, Kosmicheskaya Biologiya i Meditsina, Russian, Vol 5, No 3, 1971, pp 55-60, submitted 26 October 1970]

Abstract: Data obtained using a teleophthalmoscopic system give evidence that the blood filling of retinal vessels decreases in response to accelerations of 6 and 8 g. Exposure to 10 and 12 g disturbs blood flow continuity in retinal vessels, giving rise to optical disturbances. These phenomena may be accounted for by changes in systemic and regional circulation. Their level is correlated with the values of the acceleration components coinciding with the direction of the vascular bed. In the pathogenesis of the described vascular disturbances an increase in hydrostatic pressure in the region of the eye back pole is of a certain significance.

The state of retinal circulation during accelerations has already attracted the attention of physiologists for many years. This interest is attributable not only to the importance of studying the pathogenesis of visual disorders under these conditions, but also to the fact that retinal circulation is very closely related to the cerebral vascular system. However, it was not until 1954 that Duane was able to make direct observations of the state of retinal circulation during accelerations. While rotating together with a subject in a centrifuge cabin, he made a direct ophthalmoscopy of the ocular fundus. As is well known, the author of these interesting experiments occupied a transverse position relative to the imparted forces while the subject was exposed to longitudinal acceleration[1]. During 1966-1969 an improvement in laboratory techniques made it possible to take motion pictures of the ocular fundus

[1] This important circumstance was overlooked by B. N. Savin (1970) in a study of the pathogenesis of visual disorders accompanying acceleration. However, it has an especially fundamental importance precisely in this sense.

USSR

UDC 621.436.002.72-181.2

ANDREYEV, S. F., BARASH, M. SH.

"Procedure for Monitoring the Position of Large-Scale Diesel Engines During Installation"

Leningrad, Sudostroyeniye, No 2, 1972, pp 61-62

Abstract: A procedure is outlined for monitoring the position of large-scale diesel engines during assembly on a sloping building slip. In this procedure the accuracy of monitoring the engine position does not depend on the degree of readiness of the stern of the ship for boring. A procedure is also presented for marking or boring the deadwood seats. The position of the diesel engine is checked by sighting on a remote light marker through a special sighting telescope set on two control points of the theoretical axis of the shafting and also variation of the noncoaxial alignment of the linked elements of the shaft line by means of an optical compensator built into the sighting telescope. The position of the engine is checked using the DP-477 optical device and a special attachment. The declivity boards for attaching the instrument and the remote markers are installed in the engine room parallel to the framing (with a deviation of no more than $\pm 1°$) and plumb considering the angle of inclination of the building slip (a deviation of no more than $\pm 1°$). When necessary, the

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USSR

ANDREYEV, S. F., et al., Sudostroyeniye, No 2, 1972, pp 61-62

position of the assembled engine relative to the theoretical axis of the shafting is corrected by means of clamps. The procedure was used to install the 6RD76 and 8DKRN74/160-2 main diesel engines on the Velikiy Oktyabr' and Baltika class ships. The results indicate that the procedure can also be used for assembly and installation of the large diesel engines of other ships built on sloping building slips. It permits a significant reduction in the ship construction cycle by combining the installation and hull assembly operations.

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USSR UDC: 621.396.6-181.5(088.8)

BARASH, Yu. V., BOGDANOV, S. S., SHESTAK, V. V., BELOPOL'SKIY, M. I., SIMDYANOV, G. I.

"A Device for Combining Microelements"

USSR Author's Certificate No 259612, filed 30 Aug 68, published 3 Jun 70 (from RZh-Radiotekhnika, No 5, May 71, Abstract No 5V190 P)

Translation: This Author's Certificate introduces a device for combining microcomponents such as the microminiature elements of radio electronic circuits. The device is made in the form of a specimen stage which can be moved in two mutually perpendicular directions and is mounted on a rotating base connected to a mechanism for holding and adjusting the position of one of the elements to be combined. In order to increase the resolving power of the device, the adjustment mechanism is made in the form of a column which rotates about a vertical axis. This adjustment mechanism and the specimen table are subjected to the action of micro-adjustment units, each of which is made in the form of a plate which changes its linear dimensions as a result of thermal expansion.

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USSR UDC: 539.171

BARASHENKOV, V. S., IL'INOV, A. S., SOBOLEVSKIY, N. M., and TONEYEV, V. D., Joint Institute of Nuclear Research, Dubna

"Interaction of High-Energy and Ultra-High-Energy Nuclei and Particles With Nuclei"

Moscow, Uspekhi Fizicheskikh Nauk, No 1, 1973, pp 91-136

Abstract: This article is a rather qualitative review of the achievements made thus far from the study of collisions between high-energy and ultra-high energy particles and nuclei on the one hand, and nuclei on the other. This branch of nuclear physics has only recently come into its own and has proved a valuable tool for computing radiation protection for high-altitude aircraft and space ships, for the "electronuclear" method of obtaining atomic energy and acquiring rare isotopes, and for solving problems in the resistance of materials to radiation, among other things. Besides the general introduction to the subject, the topics treated in this review are: the mechanism of intranuclear cascades; the nucleus model and the computation of particle collisions with intranuclear nucleons; the general method of cascade

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USSR

UDC: 539.171

BARASHENKOV, V. S., et al, Uspekhi Fizicheskikh Nauk, No 1, 1973, pp 91-136

computation; comparison of the cascade model and experiment; the model of intranuclear cascades in energies greater than several gigaelectron volts; intranuclear cascades at ultra-high energies beyond 10 Gev; the theory of inelastic collision between two nuclei; and a concluding section containing the authors' recommendations for further study. A bibliography of 85 titles is appended.

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Nuclear Physics

USSR

UDC 539.17

BARASHENKOV, V. S., ONEYEV, V. D.

"Intranuclear Cascades with Multiparticle Interactions"

Moscow, Vzaimodeystviya Vysokoenergeticheskikh Chastits i Atomnyakh Yader s Yadrami, Atomizdat Press, 1972, pp 468-502

Abstract: The methods developed in Chapters 4 and 6 of this book were used for a detailed investigation of the complete intranuclear cascade of biparticle interactions, including the contribution of the "rod" leading particle, the contributions of subsequent generations with all other generated particles, and the evaporative cascades [I. Z. Artykov, et al., Yadernaya Fizika, No 3, 978, 1966; I. Z. Artykov, et al., Nucl. Phys., No 87, 241, 1966; I. Z. Artykov, et al., Izv. AN SSSR, Ser. fiz., No 30, 1581, 1966]. This permits us to discover to what extent the generally accepted cascade model agrees with the results of the experiments in outer space. A further generalization of the cascade model is consideration of the multiparticle interactions inside the nucleus. A model of high-energy cascades with biparticle collisions is created mathematically. Some divergence of the ordinary cascade model with experience is exhibited for energies of the primary particles of several gigaelectron volts. Nevertheless, the extension of such calculations to the cosmic energy region is of great interest, especially in connection with the discovery of the role played by the leading particles in the mechanism of interaction of the particles with the nuclei.

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USSR

BARASHENKOV, V. S., et al., Vzaimodeystviya Vysokoenergeticheskikh Chastits i AtomnykhYader s Yadrami, Atomizdat Press, 1972, pp 468-502

The nuclear interaction cross sections calculated by the Monte Carlo method are discussed. The set nature of the nascent particles and their energy spectra are analyzed. Other investigated properties include the distribution with respect to a transverse pulse and angular distributions. A model and a calculation scheme are presented for multiparticle interactions and nucleon-nuclear collisions, the interactions of π-mesons with the nuclei, and the tubular model. An analysis of the nuclear interactions in the 10-30 gigaelectron-volt range shows that the experimental data known up to now cannot be matched with the tubular model.

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USSR

UDC: 539.12.17

BARASHENKOV, V. S., SOBOLEVSKIY, N. M., TONEYEV, V. D.

"Passage of Beams of High-Energy Particles Through Thick Layers of Matter"

Moscow, Atomnaya Energiya, Vol 32, No 3, Mar 72, pp 217-221

Abstract: In their previous article (Atomnaya Energiya, Vol 32, p 123) the authors described a procedure for calculating a nucleon-meson cascade in a block of matter, and they also studied the distribution of particle fluxes initiated by high-energy primary radiation inside and outside blocks of various compositions and dimensions. In this paper the same method is used for studying in more detail the characteristics of secondary particle fluxes behind a thick shield. The calculations are done by modeling the "fate" of each individual particle in the material by the Monte-Carlo method. Each case of inelastic interaction of a particle with a nucleus is calculated by the Monte-Carlo method according to the cascade-evaporative model. The behavior of neutrons with energies below 10.5 MeV was modeled on the basis

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USSR

BARASHENKOV, V. S. et al., Atomnaya Energiya, No 3, 1972, pp 217-221

of reactor constants. The results were compared with measurements on the synchrocyclotron at the Joint Institute of Nuclear Research at energies of 340 and 660 MeV. The geometry of the experiments was strictly reproduced in the computations: aluminum blocks with thicknesses of 75 and 150 g/cm^2 were exposed to a collimated beam of protons with a radius of 1 cm. The results show that the proposed method can be successfully used both for computing integral characteristics (such as the overall particle flux) and for obtaining detailed information: the spatial structure of the radiation behind the shielding, the different spectral-angular characteristics, their correlations, etc. The comparison of theoretical and experimental results shows that the accuracy of calculations depends most on the completeness of knowledge of the experimental conditions. Indefiniteness as to the individual parameters of the model plays no appreciable part. One figure, eight tables, bibliography of nine titles.

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1/2 009 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--INTERACTION CROSS SECTIONS OF NUCLEONS WITH HELIUM -U-

AUTHOR--BARASHENKOV, V.S.

B

COUNTRY OF INFO--USSR

SOURCE--N-69-40334 TRANSLATED FROM REPORT JINR-P2-4333. 4P.
NASA-TT-F-12606

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--NUCLEON INTERACTION, HELIUM ISOTOPE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1991/0615 STEP NO--UR/0000/70/000/000/0001/0004

CIRC ACCESSION NO--AM0110399

UNCLASSIFIED

USSR

UDC 577.4

BARASHENKOV, V. V., and POLYAKOVA, L. F.

"On the Diagnosis of Microprogrammed Automata"

Izv. Leningr. elektrotekhn. in-ta (Bulletin of Leningrad Electrical Engineering Institute), 1972, vyp. 118, part 1, pp 115-120 (from RZh-Matematika, No 3, Mar 73, Abstract No 3V443 by Kh. M.)

Translation: The article considers the problem of diagnosing microprogrammed automata in the event of a single fault of the constant 0,1 type. A relation is found between the matrix of unions of the initial automaton and the defective automaton.

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USSR

BARASHENKOV, V. V.

"Time Matching of Algorithms"

Vychisl. Tekhnika [Computer Technology -- Collection of Works], No 2, Leningrad, Energiya Press, 1972, pp 8-11 (Translated from Referativnyy Zhurnal Kibernetika, No 4, 1973, Abstract No 4V626, by the author).

Translation: A method is suggested for production of a logic circuit for an algorithm, reflecting the process of simultaneous realization of two algorithms, also fixed in the form of logic circuits. The possibility of using the method in problems of synthesis of multiprogramming control automata is indicated.

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BARASHENKOV, V. V., POLYAKOVA, L. F.

"The Problem of Diagnosis of Microprogrammed Automata"

Izv. Leningr. Elektrotekhn. In-ta. [Works of Leningrad Institute of Electric Engineering], 1972, No 118, Part 1, pp 115-120 (Translated from Referativnyy Zhurnal, Kibernetika, No 3, Moscow, 1973, Abstract No 3 V443 by Kh. M.).

Translation: The problem of diagnosis of microprogrammed automata is studied for the case of an individual defect similar to constant 0.1. The relationship between the matrix of connections of the initial automaton and the defective automaton is determined.

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AUTHOR-- BARASHEV, P., CORRESPONDENT

TITLE-- THE ARIADNE,S THREAD

NEWSPAPER-- PRAVDA, MAY 30, 1970, P 6, COLS 2-5

ABSTRACT-- THE AUTHOR OF THE ARTICLE WAS INVITED BY MARK IVANOVICH SHEVELEV, HEAD OF THE POLAR ADMINISTRATION OF CIVIL AVIATION, FOR A CRUISE IN AN "AN-24" EQUIPPED WITH "TOROS", A RADAR INSTALLATION THAT PRODUCES NOT THE CONVENTIONAL CONTOURS OF THE TERRAIN BUT ITS DETAILED PHOTOGRAPH-LIKE PICTURE. THE FUNCTIONS OF THE INSTALLATION, ALSO KNOWN AS THE "RLSBO" /RADAR INSTALLATION FOR LATERAL SCANNING/, WERE EXPLAINED BY ENGINEER VALENTIN YELEIMOV. IT WAS DEVELOPED BY JOINT EFFORTS OF LENINGRAD ENGINEERS AND POLAR RESEARCHERS AS AN AID FOR NAVIGATION IN ARCTIC ICE PACK. THE TEAM OF ITS DESIGNERS WAS HEADED BY V. M. GLUSHKOV. THE "TOROS" SCAN COVERS AN AREA THREE KILOMETERS WIDE. ITS PULSE CAN BE CONVERTED TO LIGHT IMAGES THAT ARE IMMEDIATELY RECORDED ON A MOVIE FILM.

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Acc. Nr.: AN0103342 Ref. Code:

OTHER PERSONALITIES MENTIONED ARE LEONID ALEKSEYEVICH KHOKHLOV, WHO PARTICIPATED IN THE DEVELOPMENT OF THE "TOROS", AND AN-24 COMMANDER ALEKSANDR RIDEL.

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TAL'ROZE, V. L., Foreign Correspondent of the Academy of Sciences USSR, and BARASHEV, P. P., Candidate of Physical and Material Sciences

"Chemical Effects of Laser Beams"

Moscow, Zhurnal Vsesoyuznogo Khimicheskogo Obshchestva imeni D. I. Mendeleyeva, Vol 18, No 1, 1973, pp 15-33

Abstract: This article reviews the literature, from about 1965, describing the chemical effects induced by laser beams. Characteristics of the beam -- monochromaticity, polarization, coherence, spectral properties, and others -- are briefly discussed. In general the responses of atoms and molecules can be placed in one of four groups: single-photon electron and vibrational absorption, multiquantum electron stimulation, photo-dissociation of the molecules and nonlinear multiquantum damping of the vibration, and multi-quantum photoconization of atoms and molecules. After a discussion of the general mechanism of each type of reaction, particular examples of such reactions are given. Other topics include the chemical reactions induced by lasers in gases, liquids, in gas jets above solid targets, and on the surface of the targets themselves, and the use of lasers in the study of very fast chemical reactions.
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1/2 048 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--ONE POSSIBLE ESTIMATE OF THE CURRENT DENSITY OF THE SURFACE MULTIPLE QUANTUM PHOTO EFFECT IN METALS -U-

AUTHOR--BARASHEV, P.P.

B

COUNTRY OF INFO--USSR

SOURCE--FIZIKA METALLOV I METALLOVEDENIE, FEB. 1970, 29, (2), 414-415

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ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A THEORY OF THE EXTERNAL MULTIPLE QUANTUM PHOTO EFFECT ARISING FROM THE SURFACE OF A NUMBER OF METALS IS PRESENTED IN THE LIGHT OF EXISTING THEORETICAL AND EXPERIMENTAL DATA. THIS PHENOMENON IS ONLY OBSERVABLE BY VIRTUE OF THE USE OF INTENSE LIGHT SOURCES SUCH AS LASERS. AN EXPRESSION IS DERIVED FOR THE C.D. CHARACTERIZING THIS EFFECT. AGREEMENT WITH EXPERIMENTAL DATA OBTAINED FOR AU TARGET IRRADIATED BY A LASER BEAM IS CLOSE.

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